

IN THE COURT OF COAL MINES REGULATION

**IN THE MATTER of an
Investigation in pursuance of
the Coal Mines Regulation Act
1982 into an accident which
occurred at Gretley Colliery on
14 November 1996 and its
causes and circumstances**

**REPORT OF A FORMAL INVESTIGATION
UNDER SECTION 98 OF THE
*COAL MINES REGULATION ACT, 1982***

BY

**His.Honour acting Judge J. H. STAUNTON
A.O. C.B.E. Q.C.**

JUNE 1998

VOLUME 1

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HOLDEN AT SYDNEY AND NEWCASTLE**

NO.1 OF 1996

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REPORT

**To The Honourable Bob Martin, M.P.
Minister for Mineral Resources
Minister for Fisheries**

Sir

Having been directed by your Notice dated at Sydney on the 4th day of December, 1996 made and issued in pursuance of the powers conferred upon you by the provisions of Section 95 of the Coal Mines Regulation Act, 1982, as amended, to hold a formal investigation as the Court of Coal Mines Regulation established under Section 150 of the said Act into the accident at Gretley Colliery on 14 November, 1996 and of the causes and circumstances of such accident, I have completed my investigation and report as follows:

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SUMMARY OF FINDINGS

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CHAPTER 1 - INTRODUCTION

The Accident

At about 5.30 am on 14 November 1996 employees of The Newcastle Wallsend Coal Company Pty Limited, a wholly owned subsidiary of Oakbridge Pty Limited, were engaged in work on the night shift at the company's mine, the Gretley Colliery. Four men of a team of eight were in the process of developing a roadway (known as C heading) in an area of the mine called 50/51 panel, operating a continuous mining machine. The remaining four members of the team were in a crib room a little distance away.

Suddenly, with tremendous force, water rushed into the heading from a hole in the face made by the continuous miner. That machine, weighing between 35 and 50 tonnes, was swept some 17.5 metres back down the heading where it jammed against the sides. The four men were engulfed by the water, swept away and drowned. The remaining team members survived the disaster by reason of being in the crib room, which itself was flooded.

The deceased men were: Edward Samuel Batterham, mining deputy, 48 years of age; John Michael Hunter, miner, 36; Mark Kenneth Kaiser, mechanical fitter, 30; Damon Murray, miner, 19.

The water came from the long-abandoned old workings of the Young Wallsend Colliery. The mine was working to a plan, which had been approved by the Department of Mineral Resources. The plan showed the Young Wallsend Colliery more than 100m away from the point of holing-in.

It is now clear that the plan was wrong. At the commencement of the night shift at 11.00pm on 13 November 1996, the Young Wallsend Colliery was only 7 or 8 metres away.

The workings of the old mine were full of water. Moreover, the water extended to the surface by means of the mine shafts, thereby providing what is known as a head of water. This head of water had the effect of significantly increasing the water pressure.

The Issues

The Court's task under s95 of the *Coal Mines Regulation Act 1982* is to determine the 'causes and circumstances' of this tragedy. The Court is enjoined, moreover, to add 'any observations which (it) thinks right to make' (s98) arising out of its investigation. The hope is, no doubt, that lessons will be learned, and similar occurrences avoided in the future.

CHAPTER 2 - THE PLAN ISSUE

The Danger of Inrush

The hazard of inrush is well known. It arises from the penetration of a reservoir of water (or other material which flows) in the course of mining. Once penetrated the reservoir naturally empties into the mine. It may do so with great force especially if it has a high head of pressure. When an inrush occurs, therefore, fatalities are likely.

Once a mine has been abandoned it is likely that over time water will accumulate in the void. Abandoned mines are, therefore, recognised as a potential source of danger from inrush. When mining in the vicinity, they

cannot be ignored. Steps must be taken either to drain the water, or maintain a barrier of unworked coal around the abandoned mine, sufficient to prevent the escape of that water. Whatever the strategy, it is fundamental that the colliery form an appreciation of the location and extent of the abandoned mine.

Now, obviously, a mine full of water cannot be entered and surveyed. Its location must be determined from plans and other documents which may be available in relation to it. Plainly, however, research must be undertaken, and a judgment formed as to the reliability of the material uncovered. The strategy of avoiding inrush is likely to be different, depending upon the level of confidence which the mine management has in the accuracy and completeness of the material it gathers relating to the abandoned mine.

The Broad Nature of the Error

One of the plans held by the Department of Mineral Resources, in respect of the Young Wallsend Colliery, was a copy of the mine plan. The plan carries the following inscription:

"Copied from the colliery plan
at the Coalfield Office
by Herbert Winchester
21st March 1892"

The plan depicts areas of coal which have apparently been extracted. The lines on the plan are in two colours - red and black. The areas extracted depicted in red are different from those in black. The workings in one colour appear to have been superimposed upon workings depicted in the other colour. At the relevant time (1996) it was marked Rt 523, Sheet 1.

The Department also has, amongst its records relating to the Young Wallsend Colliery, two other plans. They were plainly of a different era, and much more modern. They are each copies, not originals. They are reproduced on a plastic sepia material. One plan is inscribed with the words:

"Young Wallsend Coal workings
Top Seam"

The other plan carries the following inscription:

"Young Wallsend Coal workings
Bottom Seam"

Neither plan is dated, nor identifies the party responsible for its creation.

At the foot of each plan the following words appear:

"TRACED FROM RECORD TRACING
21st March 1892"

The plans separate the two different colours on the old plan (sheet 1). The area depicted as the top seam corresponds with the area in black (an oval shape) on the old plan. The bottom seam corresponds with the area depicted in red (in the shape of two arrowheads linked by roads).

It appears, therefore, that whoever produced the top and bottom seam sheets made an examination of the old plan (sheet 1), and made two assumptions upon the basis of which Sheets 2 & 3 were then drawn:

- First, it was assumed that the two colours, red and black, indicated workings in two separate seams.
- Secondly, it was assumed that the area depicted in

black (the oval shape) was the top seam (known as the Young Wallsend Seam at a depth of 460ft), and the area in red was the Bottom Seam (known as the Borehole Seam at a depth of 521ft).

Both assumptions were wrong. A drilling programme undertaken since the tragedy suggests that all workings were in one seam. But, there is no question that the workings depicted in red were workings in the top seam, whereas they were shown on sheet 2 as being in the bottom seam.

The red workings extended for more than 100m beyond the black in both an easterly and westerly direction. The Gretley Colliery was working the upper seam. Hence, the colliery (whose planning was based upon the erroneous top seam sheet) was always more than 100m closer to the eastern edge of the abandoned colliery than was thought. On 14 November 1996, the new workings of the Gretley Colliery holed into the abandoned Young Wallsend Colliery, thereby causing the inrush.

History of the Young Wallsend Colliery

It was perhaps not unreasonable to infer that the two colours on the old plan represented workings in two seams. However, what was unusual, and disturbing, about the Young Wallsend Colliery mine plan (sheet 1), was that there was no legend. There was nothing on the plan to indicate what seam was being depicted in black (whether the Young Wallsend or Borehole Seam), and what seam was being depicted in red. Each of the other record tracings before the Court, where multiple colours had been used, identify each seam by reference to a particular colour.

Assuming that the surveyor or mine manager inferred from an examination of the old plan that there were two seams, how might he take the next step, and determine which colour was the top seam, and which the bottom? One means of attempting to solve the puzzle is by undertaking historical research into the Young Wallsend Colliery. Whether due diligence required such a step will be determined later.

The Report examines historical material, old and new, relating to the Young Wallsend Colliery. What then, emerges from such material? The evidence is sparse, and some of it is obscure. Much of it is contradictory. There are scattered clues as to the true position, and some skill, and a degree of luck, would be required to reach the correct conclusion, unless one had access to a file stored in the State Archives [Ex.17.17]. That file was referred to in the Abandonment Register. It was produced by the Department late in the Inquiry. Once produced, it solved the riddle of the plan. It was apparent from correspondence on file that the two colours represented a re-survey of the one seam. All workings (apart from a small area adjacent to the shaft) were in the one seam, the upper seam (the Young Wallsend seam).

The 1:4,000 Series Seam Sheets

When considering who was responsible for the top and bottom seam sheets (RT 523, sheets 2 and 3), it is convenient to deal with a related issue which gives rise to many of the same questions. It concerns the series of plans used by the Mine Subsidence Board.

The Mine Subsidence Board commissioned the Department of Mineral Resources to produce a series of plans, known as seam sheets. These plans, which form part of the 1:4,000 series, were designed as a series of overlays. By positioning the plans, one on top of another, one can see at

a glance the location of surface features, and the position of mining at various levels underground.

The seam sheet incorporating the Young Wallsend colliery was sent by the Department to the Mines Subsidence Board in late 1985. The depiction of the old workings of that colliery are now known to have been wrong. The error was the same as that made in sheets 2 and 3.

It seemed likely that whoever produced the 1:4,000 series seam sheets relied heavily (if not exclusively) upon the top and bottom seam sheets. Hence, the error in those sheets was perpetuated, and indeed reinforced by its incorporation in yet another series of plans.

The Creation of Sheets 2 and 3

There was no direct evidence as to the creation of the top seam and bottom seam sheets (RT 523, sheets 2 & 3). There was, however, a considerable body of evidence which strongly suggested that the Department was the source of these plans.

The Department suggested various other possibilities. None was persuasive. The Court finds, upon the basis of the evidence set out in the Report, that the Department was responsible for the production of RT 523 sheets 2 and 3.

The Degree of Care Exercised in the Creation of Sheets 2 & 3

What care would one expect the Department to have exercised in the creation of sheets 2 and 3? It appears that sheets 2 and 3 were drawn after an examination of sheet 1. However, the task of creating sheets 2 and 3

was not simply a matter of mechanically tracing the outline of the black and the red workings. It was first necessary to interpret the old plan (sheet 1), and determine what the red and black workings represented.

Interpreting the old plan is not easy. It presents a puzzle, without any obvious answer. Why are there two colours? Why do they overlap? If they represent two different seams, which seam is which? Why is there no legend?

There are pencil notes on sheet 1. One is of some importance. It is written on an angle, and to one side of the workings. The note is very faint. Indeed, it is barely visible. It is partly obscured by one of the other pencil notes on the plan. A forensic examination, with the aid of an infra-red light, demonstrated that the note is in these terms:

"Black (Bo)rehole seam
Red? W? seam"

The note directly contradicts the interpretation which underlies sheets 2 and 3. Two questions arise:

- First, would one have expected the Departmental officer given the responsibility of interpreting sheet 1 (at the time sheets 2 and 3 were produced) to have noticed the faint pencil note?
- Secondly, if so, what significance should he have attached to the words appearing in the note?

One would hope that a competent surveyor, closely examining sheet 1, would notice the very faint words which appear, and would attempt to read

them. Having said that, the words are very faint. One would hesitate to condemn someone for having missed them.

However, the approach of a competent surveyor to sheet 1 would probably have been no different, whether or not he noticed the faint note. If the note were not read, then the surveyor would simply have sheet 1 as a guide. Sheet 1 may well suggest two different seams, but provides no basis for determining which is which. If the note were read, it would simply amount to one person's interpretation, which they pencilled on the plan. It would leave unresolved how that view was formed. Being a pencil note, and not part of the plan, it would provide no adequate basis for confidently interpreting sheet 1. Hence, in either case a surveyor would need to look for further information as to what the plan meant and, in its absence, do historical research.

The task of correctly interpreting sheet 1 was of the utmost importance. Lives may ultimately depend upon it being done properly. Due diligence, therefore, required some persistence. It is not unreasonable to expect that the officer from the Department who was seeking to understand sheet 1 should have examined the Abandonment Register, should have noticed the reference to the file, and should have thought to look in State Archives, given the age of the file. It was predictable that the old file was likely to contain important contemporaneous material, which in turn was likely to be invaluable in interpreting sheet 1. We now know that the file was capable of explaining how the copy mine plan had evolved. Had it been consulted, sheets 2 and 3 would not have been drawn. The Court, therefore, accepts that there was an absence of reasonable care by the Department in the production of sheets 2 and 3.

Were the Actions of the Department Unlawful?

The company, in its submission, asserted that the Department acted unlawfully in two respects:

- First, in producing sheets 2 and 3
- Secondly, by classifying sheets 2 and 3 as part of the Record Tracing for the Young Wallsend colliery (RT 523), and thereafter disseminating such documents to, amongst others, the Gretley colliery

The Court is not persuaded by either submission. Nonetheless, the inclusion of sheets 2 and 3 in the Record Tracing was misleading. It would, no doubt, cause people to assume that the Department had examined sheet 1, and determined accurately the disposition of workings in various seams.

The Creation of the 1:4,000 Seam Sheets

The process by which the Department compiled the 1:4,000 seam sheet for the Mines Subsidence Board is examined in the Report. In respect of the seam sheets which related to the Young Wallsend Colliery, the task was inexpertly performed under a system which was defective. The error in sheets 2 and 3 was, therefore, perpetuated and reinforced.

CHAPTER 3 - THE SPECIAL BARRIER ISSUE

The company, in its submissions to the Court, made a number of allegations against the Department, and specific officers of the Department. The allegations were made in the context of the allocation of the lease to

The Newcastle Wallsend Coal Company. The complaint was that the Department ought to have recognised (and perhaps did recognise) the potential for error in the depiction of the old workings of the Young Wallsend Colliery, and ought to have provided a special barrier around those workings to alert others to the presence of danger.

Elsewhere in the same submission the company asserted that the failure on the part of the Department was a "contributing cause of the accident". The officers said to be responsible for this failure were Mr I. C. Anderson, Senior Inspector of Coal Mines of the Newcastle office, and Mr G. W. Cowan, District Inspector of the same office.

The company's submission appears to rest upon a number of premises:

- First, that there was a duty upon the Department to consider whether, in the interests of safety, it was appropriate to impose a special barrier.
- Secondly, that in determining that issue, the Department was obliged to research the Young Wallsend Colliery, including plans and other material in its possession.
- Thirdly, that inevitably such research would have revealed the lack of certainty surrounding the extent of the old workings.
- Fourthly, that the Department in such circumstances was obliged to fix a special barrier, and do so on a very conservative basis to take account of that uncertainty.
- Fifthly, that the company would thereby have been warned, and if it sought to mine through the barrier,

would have been subjected to a specific approval process.

This submission is framed in terms which suggest that the Department alone (because of its failure to impose a special barrier) must take responsibility for the tragedy. However, it should be recognised that clause 8 of the *Coal Mine Regulation (Methods and Systems of Working - Underground Mines) Regulation 1984* obliged the mine manager to carry out research into the abandoned colliery, and that for the purpose of preventing inrush. It is arguably the same research which the company now suggests would inevitably have uncovered the uncertainty surrounding the depiction of the Young Wallsend Colliery. This aspect is dealt with more fully later, when the company's responsibilities are examined.

The Allegations Against Messrs Anderson & Cowan

The Report closely examines the allegations against Messrs Anderson and Cowan. They have no substance. Nonetheless, there is an issue concerning the utility of a Special Barrier in circumstances where a lease involves an abandoned colliery, which is addressed in the recommendations which accompany this report.

CHAPTER 4 - DEPICTION OF THE OLD WORKINGS

A number of issues arise. What was the basis upon which the Gretley Colliery depicted the workings of the Young Wallsend Colliery on its mine plan? What research was undertaken before that depiction? Was that research adequate, judged by the standards of prudent surveying and mining practice, and given that the context was the prevention of inrush?

The Duty of the Mine Manager to Prevent Inrush

The Coal Mines Regulation (Methods and Systems of Working - Underground Mines) Regulation, 1984 Part 3 is headed "PREVENTION OF INRUSHES". That Part contains four clauses, including:

Clause 8: Manager's duties

Clause 9: Bore holes

Clause 8 of the Regulation contemplates a progression through a number of phases. First, there is the research phase. There is, under the Regulation, as there is under the Act, a heavy emphasis upon the manager being in possession of the facts in relation to disused workings. The Department of Mineral Resources is recognised as a crucial source of information (clause 8(3)). The manager is obliged to obtain such information as it may have available.

The second phase requires an analysis by the mine manager of that information. The aim is the formulation of a strategy which will prevent inrush. The duty upon the mine manager is expressed in absolute terms ("the manager of a mine shall ensure .. such steps are taken as may be necessary to prevent any inrush") (clause 8(1)). The submission made on behalf of the relatives of the deceased miners said this:

"An underlying premise of the legislation is, it is submitted, that inrush is avoidable, preventable by the taking of necessary steps in a particular case. ..."

The quality and completeness of the information about the old workings will, no doubt, influence the strategy. In some cases it may suggest that the elimination of the hazard, by draining the old workings, is the only strategy which will prevent inrush. In other circumstances a suitable barrier of

unworked coal may be enough. Whatever the plan, the manager is obliged to ensure that it is implemented, and that it works.

The Research & Analysis Phase

Two sources are fundamental, and should be consulted during the research phase:

- First, the Department of Mineral Resources, whose role as the repository of mine plans and other information, is recognised by clause 8(3) of the Regulations.
- Secondly, neighbouring collieries.

Any examination of the original mine plan or tracing must be directed towards three fundamental issues:

- First, is there survey information from which the precise location of the mine can be determined, in terms of its relationship to surface features?
- Secondly, has the plan been accurately drawn, with appropriate survey information?.
- Thirdly, is the plan complete, and up to date?

The Accuracy of the Plan

Putting to one side the fundamental issue as to what the different colours (the black and the red) in the mine plan referred to, and ignoring the faint pencil note on the plan, which suggested that the red workings were in Young Wallsend Seam, what emerges from a close examination of the old

plan (sheet 1)? The black workings were the critical workings from the viewpoint of the Gretley mine. They were the workings assumed to be in the Young Wallsend Seam, which was the seam being worked by the mine. In respect of those workings there were significant signposts of inaccuracy. They ought to have been recognised, and they ought to have caused the colliery to approach the plan with a good deal of circumspection. The important matters are these:

- First, unlike the red workings, there are no dates on the black workings.
- Secondly, there is no survey information in respect of the location of the faces.
- Thirdly, Mr Adam (though not other surveyors) was immediately suspicious of the symmetry of the black workings, which stood in contrast to the red. It is an idealised or stylised plan, rather than an accurate survey plan.
- Finally, there were problems in the depiction of the south-eastern corner of the workings. It is not possible to determine which areas have been extracted and which are solid coal.

The company's submission repeatedly stated that the plan of the Young Wallsend Colliery was accurate at the point of inrush. So it was. The point of inrush corresponded almost exactly with the eastern extremity of the red workings. However, the same cannot be said for the black workings. The drilling programme undertaken since the inrush has demonstrated that the plan of the black workings is quite inaccurate. Where one would have expected a void, according to the plan, solid coal was found. Voids were found where none had been charted on the plan.

Further, any examination of the old plan (sheet 1), for the purposes of determining the accuracy of the black working, cannot ignore the red workings. The depiction of the red workings, likewise, suggested a number of problems:

- First, the shape of the red workings is odd (two arrowheads, connected by a number of single roadways). It is obviously incomplete. The roadways show openings to cut-throughs, but no more. It would have been impossible to ventilate the workings simply from the roadways shown.
- Secondly, the incomplete nature of the workings is the more obvious because of the pencil comments attributed to the Chief Inspector on the plan (18 January 1963). The plan includes a number of pencil lines, which presumably represent the Chief Inspector's surmise as to the extent of workings not shown on the plan.
- Thirdly, the opening for the airshaft on the red workings does not coincide with the airshaft on the black.
- Fourthly, the plan shows a roadway to the north, and at the end of the roadway a date, 4 April 1912. An adjacent pencil note is difficult to read, but certainly includes the words:

"Staple bottom seam
62' "

The red roadway, however, extends considerably

further than any black roadway in the vicinity. It is also drawn to a different alignment. There is no staple shaft shown in the black workings (or on sheet 3, which reproduces those workings).

The separation between the Young Wallsend Seam and the Borehole Seam at the central shaft was 61 feet. The pencil note beside the word "staple" said "62' ". A staple shaft ordinarily connects one seam with another. One would, therefore, expect such a connection to be shown in both sets of workings. Its absence in the black workings ought to have disturbed a surveyor examining the plan.

There is another aspect to which attention should be drawn. It affects the entire plan (sheet 1). The portion boundary has been drawn twice. The first boundary was found to be incorrect, and was re-drawn by Mr Mining Surveyor, E. Thomas on Plan M14136. The plan is so inscribed (sheet 1). The mistake is disturbing. One cannot know whether the person responsible for it was also responsible for depicting some of the workings. Mr Adam, an expert surveyor called before the Inquiry, reached the following conclusion, having examined RT 523 sheets 1, 2 and 3:

"The variation and inconsistencies of the workings shown on the two plans identified as "Young Wallsend Workings Top Seam" and "Young Wallsend Workings Bottom Seam", are such that as a practising surveyor, I would have grave doubts about the accuracy of the information contained on these two plans."

Having dealt with the question of accuracy, the remaining issue is whether the plan is complete, and up to date?

Up-dating of the Plan

Now, in the case of the Young Wallsend Colliery, there was no plan of abandonment. A person critically examining the Abandonment Register, and the copy mine plan to which it referred (then marked M18914), should have recognised that it was not a Plan of Abandonment. That being so, what assurance is there that the copy mine plan (sheet 1) is a complete record of all work undertaken? Is one able to exclude the possibility of unrecorded workings?

Where there is a plan of abandonment so inscribed, the surveyor can, no doubt, assume that the workings are up to date. But that is not this case. It was appropriate therefore, that the copy mine plan (sheet 1) should have been regarded with suspicion. The possibility of unrecorded workings should have been recognised.

The Extent of Possible Unrecorded Workings

Mr Anderson, a Senior Inspector of Coal Mines, gave evidence as to the precautions which a mine should take, as a matter of prudence, where its examination of the plan suggests the possibility of unrecorded workings. He drew attention to Clause 9 of the *Coal Mines Regulation (Methods and Systems of Working - Underground Mines) Regulation, 1984* (the Borehole Rule).

Mr Anderson provided a helpful summary from a number of texts, old and new, which dealt with the issue as to when to commence drilling in circumstances where the location of old workings is uncertain. Mr Anderson provided examples, drawn from the history of mining, of inrush, arising from inaccuracy in old plans. He ultimately expressed the view,

based upon this research, that, prudently, the company should have commenced drilling 150m to 200m from the old workings as shown on the plan.

The company responded to this evidence in a number of ways. It addressed certain arguments as to the merits. It also mounted a personal attack upon Mr Anderson. The Court will put to one side, for the time being, the personal attack, and deal with the merits.

The Court accepts that a sizeable number of individuals within the mining industry assumed before the inrush that the 50 metre Borehole Rule (Clause 9) offered adequate protection against inaccurate plans. Indeed, the history of the Borehole Rule provides some foundation for that view. However, it is a distortion of that rule to regard it as a panacea against all errors in old plans, whatever the circumstances. Each case must be looked at on its merits. It is manifestly foolish, even without hindsight, to do otherwise. Indeed, it is instructive to look at the approach of the United States to the same problem. A commentary by the Federal Register upon the US equivalent of the Borehole Rule (which requires drilling from 200 feet i.e. approximately 60 metres) is consistent with an examination of each plan on its merits, rather than proceeding upon the basis of assumption.

Within the small sample of witnesses called to give evidence there was significant experience of inaccurate plans. They were not inaccuracies that led to inrush. However, they underlined the wisdom of Mr Anderson's approach, which was essentially a mix of commonsense, and caution.

A surveyor approaching the old plan in respect of the Young Wallsend Colliery, therefore, should have taken account of the following:

- First, it was not the original mine plan, but a copy.
- Secondly, there was no plan of abandonment.
- Thirdly, it was an old plan, not signed, not certified, and drawn at a time when it may or may not have been prepared by someone with qualifications or experience in surveying.
- Fourthly, there were no survey books from which the plan might be verified.
- Fifthly, nothing was known of the history of surveying at the mine.
- Sixthly, there were puzzling and anomalous features in both the black and red workings.
- Finally, there was nothing on the plan to indicate that it was up to date.

The Attack upon Mr Anderson

The company accused Mr Anderson of deliberately misstating certain evidence. It accused him of other things besides. Its submissions in respect of Mr Anderson are extravagant. They reveal an attitude to his evidence which is extraordinary in the circumstances.

By reason of the strong and unwarranted attack upon him and the unsubstantiated allegations made against him, the Court feels it necessary to state that it rejects the aspersions cast against Mr Anderson's character and professional reputation and to state unequivocally that his evidence, rather than being found to be deliberately misleading, and containing deliberate inconsistencies, is accepted as having been given honestly with every proper endeavour to assist the Court. The attack upon him does no credit to those who make it and is rejected. It should never have been

made and, in the Court's view, it is especially reprehensible because it was not put in terms to Mr Anderson by Counsel for the company as required by the law and practice of the Courts in this State.

Consultation with Adjacent Collieries

Gretley was in possession of a number of certified plans depicting the Young Wallsend Colliery. They included the certified record tracing of the neighbouring colliery. What significance should attach to the certification of accuracy by a mine surveyor? There was a divergence of views. Some witnesses, including mine managers and surveyors, claimed that they were entitled to accept without investigation all information on a certified plan, so long as the surveyor had not signified that he was in doubt about such information.

No doubt it saves time, and is convenient, to assume that a certified plan is accurate in every detail. However, it is patently less safe to proceed upon the basis of assumption, than upon the basis of an examination and verification of information which is to be relied upon. The Court notes that above ground surveyors, where much less is at stake, do not proceed upon the basis of assumption. Rather, they seek to verify even plans which are certified.

It was asserted that the view of certification set out above was widespread throughout the coal industry, at least before the inrush. If that view is widespread, and has not been completely dispelled by the shock of Gretley, then urgent action is needed to re-educate mine surveyors, managers, and others as to the approach which prudently should be taken to a certified plan. The Court will return to this aspect when formulating its recommendations.

Historical Research

If doubt remains after an examination of material from the Department and neighbouring collieries, how might it be resolved? Should the surveyor undertake research into the history of the abandoned colliery?

The Court accepts that historical research is unlikely to resolve minor uncertainties. Here, in the context of Gretley, the issue is whether it was capable of resolving, or at least illuminating, two issues:

- First, there being no legend on the old plan (sheet 1), what was the significance of the use of different colours in depicting the workings (the red and the black?)
- Secondly, was the old plan up to date? When, in relation to the dates which appear on the plan (between 1910 and 1912), did the mine discontinue operations?

Historical research is important. The Court recognises that hitherto prudent mine managers may or may not have seen the need to embark upon such research, apart from seeking access to the Department's Annual Reports, and other material held by the Department.

The Report, of which this part is but a summary, begins with an historical account of the Young Wallsend Colliery. It is based upon a number of publications, both old and new. As already stated, the evidence emerging from these publications is not entirely consistent and often unclear. However, the quest to understand enigmatic and conflicting evidence is, itself, likely to yield a better understanding of the problem, and to expose assumptions which may have been made. Although the publication *Youngy*

Then & Now (1991) may have gone beyond its source material in asserting that the Borehole Seam had not been worked before 1912, that statement was capable of dislodging an assumption that the two colours in the old plan were referable to two seams. Further, a book by Danvers Power (1912) which is referred to, accurately identified the Young Wallsend Colliery as working in the Young Wallsend Seam. Contemporaneous newspapers reports were likewise capable of providing insight.

What then did the Gretley mine do, by way of research, before depicting the Young Wallsend Colliery?

The Plans on File after the Inrush

The Court accepts that Mr Murray was held in high esteem by his colleagues, and by those who knew him in the industry. Unquestionably, the absence of Mr Murray's first hand account of his research, his reasons and his beliefs, creates difficulties for the Court. The Court must do its best to determine what material and information Mr Murray actually used in order to depict the Young Wallsend workings in the place and form he did on the mine plan, produced for approval on the Section 138 application.

After the inrush, the Chief Surveyor of the Oakbridge Group, Mr Price, examined the plans within the survey office at Gretley, and produced to the inspectors those plans relevant to the depiction of the Young Wallsend Colliery. Two matters which one would expect to find were missing. First, there was no copy of the old plan (sheet 1) (or any portion of that plan). Secondly, there was no surveyor's file. There were no notes referring to sheet 1, nor copies of extracts from the Department's Annual Reports, nor other historical documents signifying that research had been undertaken. What evidence is there that Mr Murray (or someone at Gretley) examined

sheet 1? Any analysis of the Young Wallsend Colliery which failed to include such an examination would have been seriously flawed. The company, and the Collieries' Staff Association, pointed to three matters which established, in their submission, that Mr Murray examined the old plan. The three matters were these:

- First, the evidence of an undermanager, Mr Coffey, who recalled an occasion in 1993 when he saw Mr Murray in possession of a plan which, from Mr Coffey's description, bore resemblance in some respects to sheet 1 of RT 523
- Secondly, a conversation between Mr Porteous and Mr Murray in 1995 when Mr Porteous was seeking to understand the basis upon which Mr Murray had depicted the Young Wallsend Colliery.
- Thirdly, it was argued that because the examination of sheet 1 was so fundamental to an understanding of the abandoned mine, it is inconceivable that a person of Mr Murray's competence would have overlooked making that examination.

Each matter is examined in turn. The Court is not persuaded, however, that Mr Murray, or anyone at the mine, examined sheet 1.

What, then, did Michael Murray have available to depict the Young Wallsend Colliery? Referring to the material identified by the company the position is as follows:

- First, as stated, the Court does not accept that Mr Murray examined the old plan (sheet 1).

- Second, the Court does not accept that Mr Murray examined the Abandonment Register.
- Third, the Court does not accept that historical research into the Young Wallsend Colliery was undertaken by or on behalf of Mr Murray.
- Fourth, the Court does not believe that the seam sheets in the 1:4,000 series, used by the Mine Subsidence Board, provided a proper basis for the depiction of the Young Wallsend Colliery. Nor did Mr Knight's computer drafted boundary plan. All were plainly derivative from sources not specified.
- Fifth, the various geological reports, which contained plans of the Young Wallsend Colliery, were not drawn with survey accuracy, and also were obviously derivative. They were not a suitable source from which a surveyor could depict the old workings.
- Sixth, the certified record tracing of the Wallsend Borehole Colliery, and of the Gretley Colliery, each incorporated an outline of the abandoned colliery. The information had plainly been derived from other sources, which were not specified. Although certified, they did not furnish an adequate basis for a surveyor to determine with confidence the workings of the Young Wallsend Colliery.

A surveyor, examining these plans, should have recognised the need to go to the source documents. No doubt, a surveyor would have noticed that the depictions in the seam sheets, geological reports, and record tracings were consistent with each other. He may even have been encouraged by that consistency. However, the question as to the source of the depiction

would nonetheless remain, and would need to be examined. What else was available to Mr Murray? The only documents not dealt with thus far in this analysis are:

- First, the shaft surveys undertaken by Mr Knight in 1980.
- Second, the top and bottom seam sheets, classified by the Department as part of the record tracing for the Young Wallsend Colliery (sheets 2 & 3).

The shaft survey furnished Mr Murray with an adequate basis to accurately fix the location of the Young Wallsend Colliery, in terms of the ISG grid. The extent of the workings, and the accuracy of the plan, were matters not resolved by that plan. Could a surveyor, acting prudently, rely upon RT 523, sheets 2 and 3 as a basis for dealing with those issues? A number of witnesses attributed a special status to plans which were part of the record tracing, and which were disseminated by the Department. A moment's reflection would surely reveal that there is no basis for such a belief.

Since, on the findings made by the Court, Mr Murray only had available sheets 2 and 3, and did not view sheet 1, the basis upon which he depicted the Young Wallsend Colliery was manifestly inadequate. That inadequacy is underlined by the importance of the task being performed. The mine surveyor knew that the colliery was full of water. He must also have known that accurately depicting the Young Wallsend Colliery was fundamental to the prevention of inrush.

The Actions of Mr Romcke

On 6 September 1994 Mr Romcke submitted an application under S138

of the *Coal Mines Regulation Act 1982* to the Department seeking approval to extract coal in a development known as MW39-45. The development included the panel which became the site of the inrush a little over two years later (by which time the number had been altered from MW44/45 to MW50/51).

In fulfilling the obligations under Clause 8, the mine manager may choose to direct the surveyor as to the research which should be undertaken. However, a competent surveyor may, without direction, undertake that task, recognising that it must be performed. What the manager must do is review the completeness and reliability of the material collected. The manager's confidence in the surveyor does not relieve him of that obligation, and nor does the surveyor's guarantee. Here, Mr Romcke substantially relied upon a guarantee from Mr Murray. He was shown only two plans, the top and bottom seam sheets (sheets 2 and 3). The other plans in the possession of Mr Murray, which Mr Romcke chose not to examine, we now know did not provide an adequate basis upon which the old workings could confidently be depicted. Those matters which were relevant, and which were not uncovered by the approach which Mr Romcke chose to take, are as follows:

- First, Mr Romcke did not determine whether Mr Murray had procured all the information available from the Department.
- Second, he did not determine whether Mr Murray had examined the original of any plan held by the Department.
- Third, he did not learn, therefore, that there was an old copy mine plan (sheet 1) even though it was referred to at the foot of sheets 2 and 3 which he was

shown.

- Fourth, he did not ask Mr Murray to identify the plans he had obtained, and relied upon. Nor did he ask to see those plans.
- Fifth, he did not ascertain, therefore, whether Mr Murray had consulted the Department's Abandonment Register, or whether there was an Abandonment Plan. He understood, however, that to be fully confident of the position of the workings, the surveyor would need to obtain the Abandonment Plan.
- Sixth, Mr Romcke did not determine whether historical research into the Young Wallsend Colliery had been undertaken, and if so, what had been determined.

Moreover, Mr Romcke, in his conversation with Mr Murray, clearly did not closely examine sheets 2 and 3. He did not look at either with a view to determining whether they were reliable. Aside from the odd shape of the workings in the bottom seam sheet (sheet 2), Mr Romcke did not refer to the many disturbing, and anomalous features of sheets 2 and 3, to which reference has already been made. Even the aspect which originally sparked Mr Romcke's interest, namely the odd shape of the workings, was not pursued. All Mr Romcke really had was Mr Murray's guarantee.

That is not good enough. Mr Romcke ought to have examined the material gathered by Mr Murray, and made his own judgment. The Court believes Mr Romcke did not discharge appropriately the obligations upon him as mine manager.

The Actions of Mr Porteous

Mr Porteous' thinking was conditioned by three assumptions. They were:

- First, he believed that sheets 2 and 3 were plans circulated by the Department as Record Tracings, and could, therefore, be relied upon as being accurate.
- Secondly, Mr Porteous believed that it was appropriate to rely upon certified plans as being correct. Hence, he could accept as reliable the Record Tracings of the Wallsend Borehole Colliery, and the Gretley Colliery.
- Thirdly, in Mr Porteous' experience old plans were accurate. If there were inaccuracies he assumed that they were likely to be no more than "a handful of metres". Protection against that sort of error was provided by Clause 9 of the Methods and Systems Regulation (the Borehole Rule) in his view.

Each of these assumptions was unwarranted. Mr Porteous was by no means alone in making such assumptions. Mr Romcke, and others, approached the same task with much the same frame of mind.

Mr Porteous unquestionably went further than Mr Romcke. However, he did not go far enough. He did not uncover the following matters which were fundamental to the formulation of a strategy which would prevent inrush:

- First, the existence of the old plan, sheet 1. That plan, after all, was identified on the face of sheets 2 and 3, which Mr Porteous saw:

- Second, whether or not there was an Abandonment Plan.
- Third, the terms of the Abandonment Register.
- Fourth, whether all material from the Department had been obtained.
- Fifth, whether the mine surveyor had examined the original plan.
- Sixth, the odd and anomalous features of sheets 2 and 3 which suggested that they may not be reliable.
- Seventh, that no research had been undertaken into the history of the Young Wallsend Colliery.
- Eighth, that the material gathered by the surveyor was incapable of demonstrating either that the workings had been depicted accurately, or that they were up to date.

The Court believes that, as in the case of Mr Romcke, and for much the same reasons, Mr Porteous did not discharge appropriately the obligations upon him as mine manager.

Chapter 5 - THE DRAINAGE ISSUE

The Nature of the Hazard

Mining is universally recognised as being hazardous. Systems must obviously be developed which address the particular hazards within a mine, whether they arise from the coal being extracted, or the strata which encases that coal. These are the daily problems of every mine.

The abandoned workings of the Young Wallsend Colliery were a hazard of

a different kind. They were not something which the mine encountered every day. They were old, and known to be full of water under pressure. They had, therefore, a significant potential for harm. If there were an inrush, fatalities were certain.

Moreover, the workings of the Young Wallsend Colliery were likely to preoccupy the Gretley Colliery for a number of years. Developments were planned which, over time, would encircle the old colliery. It was, therefore, fundamental that the mine properly address the hazard.

The Available Strategies

There were two possible strategies for dealing with the hazard arising from the Young Wallsend Colliery. It could be eliminated by drainage, or isolated by a barrier. Whichever option was chosen, it was important that the choice should follow a systematic review of both options. At Gretley, draining the old workings, if feasible, was the safer option.

Feasibility of Draining the Old Workings

The company said this:

"The inevitable result ... in our submission is that approval would not have been granted to dewater from the surface. The Company cannot be criticised for not pursuing a course of action which was bound to fail."

The Court does not underestimate the difficulty in obtaining approval to dewater. It cannot be said, however, that it was inevitable that approval to dewater from the surface would not have been granted. If the quality of the water from the young Wallsend Colliery had been unacceptable for direct

discharge from the mine, it seems probable that either it was capable of dilution, or could have been stored elsewhere in the mine.

The Actions of Mr Romcke

Mr Romcke, and his surveyor, Mr Murray, had faith in the accuracy of the plan depicting the Young Wallsend Colliery. As demonstrated, that faith was misplaced. However, it appears to have caused them not to look closely at the safer option, namely draining the old workings.

The Actions of Mr Porteous

Mr Porteous was appointed manager at Gretley on 28 October 1994 . By that time the strategy to deal with the Young Wallsend Colliery by means of a barrier had already been formulated by Mr Romcke, and submitted to the Department for approval.

Mr Porteous reconsidered draining the Young Wallsend Colliery on two separate occasions. The first occasion was in May 1995, when the colliery was about to commence the development work associated with MW 41 and 42. The issue addressed at that time was not inrush, but rather the improvement of the ventilation of the mine. A consultant, Mr Savidis, was retained.

Improving the ventilation of the mine, is, of course, one issue, and an important issue. However, preventing inrush is another. The quality of the water, though unquestionably a potential problem, was plainly not regarded as insurmountable. Had it been impossible to overcome, one would hardly waste money upon retaining consultants to examine possibilities which included draining the old workings. However, the benefits in terms of

ventilation were problematical. Mr Porteous chose not to pursue the matter, and therefore draining the old workings was likewise abandoned.

In September 1996 Mr Porteous examined once more the possibility of draining the Young Wallsend Colliery. The re-examination took the form of a discussion with various other mine personnel. Again, it was rejected.

In the development of MW39-45 (MW44/45 later became MW50/51), it was foreseeable that MW50/51 would be the most vulnerable to inrush. On either side of the Young Wallsend Colliery there was a dyke system. The dyke on the eastern side was approximately 14 metres wide, with a further zone consisting of cinders and dyke material totalling 30 metres. The dykes ran from the north-west to the south-east, as was usual in the region. The dyke passing between the Young Wallsend Colliery, on one side, and MW 41 and 43, on the other, constituted a natural barrier to the expansion of the old mine.

Miniwall 50/51 had no such protection. The Young Wallsend Colliery, predictably, was obliged to develop between the two dyke systems, expanding to the south-east, and the north-west. The planned location for MW 50/51 would intrude into the south-eastern area.

Mr Porteous, like Mr Romcke, had misplaced confidence in the accuracy of the plan. If one makes the assumption that the plan was accurate, then a barrier was a simpler, less costly and yet effective solution. On that assumption, there was no need to explore the problems which unquestionably would attend the safer alternative of draining the workings. Hence, the failure to respond appropriately to the depiction issue, caused Mr Porteous, like Mr Romcke before him, to make only a superficial analysis of the drainage option, and to be deflected from further

investigation by the difficulties which would arise in the implementation of that strategy.

Chapter 6 - THE BARRIER ISSUE

The Barrier Design Width at Gretley

If the mine were to rely upon a barrier to prevent inrush, how wide should it be? Mr Anderson gave evidence that for a variety of reasons (which he provided) the barrier should be 50 m wide. Having fixed upon 50 m, Mr Anderson believed that the mine manager must then satisfy himself (no doubt with the assistance of his surveyor) that there is, in fact, 50 m of unworked coal (or thereabouts) between the old workings and the proposed development. That required a painstaking examination of the plans of the abandoned colliery. The plans may or may not enable the mine manager to say with confidence that the barrier of the design width is in place. If there is uncertainty as to the accuracy or completeness of the plans, how should it be resolved? Mr Anderson suggested that the old workings should be penetrated by drilling ahead (and by this means the plan verified). The holes should then be sealed and grouted.

The Company's response to Mr Anderson

The company responded to Mr Anderson at length. Certain arguments were directed to the merits. Others were in the nature of a personal attack. The company again accused Mr Anderson of deliberately misstating certain evidence, even though that suggestion was never put to him when he gave evidence. Mr Anderson was accused of other things besides. It is plain from Mr Anderson's response that the company's submission is, in some respects, mistaken. Where it is not mistaken, its accusations as to Mr

Anderson's integrity are without merit. The Court accepts that Mr Anderson is a person of integrity. The Report confines itself to the company's arguments on the merits. Those arguments were directed to two issues:

- First, the width of the barrier required to prevent inrush.
- Secondly, the proper construction of clause 9 of the Methods and Systems Regulations, and the practice in industry in respect of drilling ahead.

The Company's Analysis of Barrier Width

Professor Hebblewhite was called as a witness. He is a distinguished Professor of Rock Mechanics at the University of New South Wales. He provided a commentary upon Mr Anderson's evidence. He identified three purposes which a barrier must serve. He appeared to find acceptable various calculations which produced a barrier width of 41 m.

Unfortunately, Professor Hebblewhite's brief, by those who retained him, was simply to provide a critique of Mr Anderson's evidence, and not to suggest an appropriate barrier width. Given the catastrophic consequences which were likely to follow miscalculation, and the consequential need for caution, the difference between the figure of 41 m and 50 m for the first purpose identified by Professor Hebblewhite does not appear to the Court to be large. Mr Anderson's opinion in respect of barrier width appears to the Court to be reasonable.

Submissions in respect of Clause 9 (the Borehole rule)

Mr Porteous fixed a barrier of 50 m between the end of MW 50/51 and the

Young Wallsend Colliery. The barrier was fixed by reference to the plan (sheets 2 and 3). Because Mr Porteous did not intend to mine within the area identified by Clause 9, namely the 50 m, he did not regard himself as obliged to drill ahead. The company sought to defend that decision. Because there was a substantial allowance for inaccuracy in Clause 9, and because that allowance had never previously been exceeded in Australia, therefore, it was argued, the industry including Mr Porteous, were justified in assuming that inaccuracies in plans would continue to be of the same order in the future.

That assumption was unwarranted. It ignored the overseas experience, which was relevant. Even local experience of inaccurate plans, as revealed to this Inquiry, demonstrated that such an approach was incautious. Further, it was an approach which ignored the commonsense implicit in the statement of the U.S. Federal Registry, which distinguished between plans in which the mine has confidence ("where the position of the old workings are known with reasonable certainty"), and those where there is no such confidence ("where old workings are known to exist but their position is unknown or known with little confidence"). Only in respect of the former, is the mine justified in taking the perimeter of the plan, relying upon the 50 m zone to cover whatever inaccuracies may exist within the plan.

Holing-in to the Old Workings to Locate them

Given the experimental nature of re-grouting a barrier at this point in time, Mr Anderson's suggestion may not be practicable. Assuming it were impractical, and yet serious doubts remained concerning the accuracy or completeness of the plans, the manager would then be obliged either to revert to the alternative strategy of draining the old workings, or abandon the area.

Chapter 7 - RISK ASSESSMENT

The Process of Formal Risk Assessment

It is fundamental that mine managers should identify risks or hazards in mining in order that these may be removed or their potential for harm be minimised. In the past mine managers seem to have undertaken that task with minimal formality, calling upon others to provide assistance where that was thought useful.

The process of formal risk assessment is relatively new. It has been described as a "management tool". The manager appoints a team to identify the risks in a proposed development, and to devise a strategy for dealing with them. The advantages of having a team are obvious. Each member brings to the task different expertise and experience.

A risk assessment team, having undertaken the analysis, is obliged to produce a report. That is an important discipline. The report typically will break down the operation into steps or tasks. It will then identify the risks associated with each task, and suggest the means by which those risks can either be eliminated or at least ameliorated.

The company produced, amongst its discovered documents, two risk assessments which had been undertaken at the Gretley mine before the inrush. Both were impressive documents. They demonstrated the value of formal analysis, following discussion.

When should a Formal Risk Assessment be Undertaken?

Neither Mr Romcke, nor Mr Porteous saw the need for a risk assessment

in respect of the development MW39-45, and specifically in respect of the hazard posed by the Young Wallsend colliery. Two issues arise:

- First, had a risk assessment been undertaken, is it likely that it would have uncovered the error in the depiction of the Young Wallsend colliery, and have prevented the inrush?
- Secondly, would one have expected a prudent mine manager in the position of Mr Romcke in 1994, and of Mr Porteous in 1994-6, to have undertaken a risk assessment in respect of the Young Wallsend colliery?

Is it likely a Risk Assessment would have detected the Error?

Mr Romcke, and indeed, Mr Porteous either assumed or made no enquiry in respect of the following:

- That Mr Murray had been to the Department of Mineral Resources
- That Mr Murray had obtained from the Department all the material it had available relating to the Young Wallsend Colliery
- That Mr Murray had viewed the original plans
- That Mr Murray had examined the Abandonment Register
- That Mr Murray had determined whether or not there was an Abandonment plan
- That Mr Murray had undertaken historical research into the old colliery

- That Mr Murray had determined that the plan was up to date and accurate

For the reasons given earlier, the Court believes that Mr Murray did none of these things. It is highly likely that a team with responsibility of formulating a strategy in writing for the manager would have explored these, and related issues. Although the depiction of the Young Wallsend Colliery was entrenched, as a result of the circulation of sheets 2 and 3, it only needed one individual to enquire about the source documents for the mystery to begin to unravel.

Should Gretley have undertaken a Risk Assessment?

The technique of risk assessment was, before November 1996, a relatively new phenomenon. It was not required by legislation. It was not required by the Department as part of a Section 138 application. There was no published industry standard defining when it should be employed. It is perhaps not surprising, therefore, that its use was patchy. Some managers embraced it more readily than others.

No doubt the nature of the risk, and the particular circumstances ought to determine whether risk assessment should be used in a particular case. Here, the risk was serious. Fatalities and catastrophe for the mine were certain if there was an inrush. The obligation upon the mine manager was expressed in absolute terms under Clause 8 of the *Coal Mines Regulation (Methods and Systems of Working - Underground Mines) Regulation 1984*. He was obliged to take such steps as were necessary to prevent inrush. As it happens, time was not pressing. A number of panels had to be extracted (MW 39-40) before the mine would begin its encirclement of the Young Wallsend Colliery. Indeed, Mr Pala said this: (T5735)

Q. But is there any disadvantage in doing a risk assessment?

A. I couldn't think of any disadvantage.

Mr Romcke and Mr Porteous were both familiar with the technique of risk assessment. Both had employed it to advantage in the past. The Court, in these circumstances, would have expected Mr Romcke and Mr Porteous to have recognised the importance of using risk assessment in reaching an understanding of the hazard of an old colliery, and in formulating an appropriate strategy to deal with that hazard. By failing to use risk assessment they denied themselves the benefit of an expert analysis. The analysis which they chose to conduct without such assistance was, in each case, flawed. In the case of Mr Romcke it rested upon a guarantee from the mine surveyor which was accepted without investigation. In the case of Mr Porteous it rested upon limited investigation and a series of unwarranted assumptions. Had the mine surveyor been exposed to the discipline of the risk assessment process, the need for a more solid foundation for his views would more than likely have emerged. That, in its turn, would have made it more likely that the issue would have been determined by the manager on its actual merits, rather than upon the basis of assumptions. The merits suggested uncertainty, and the need for caution.

The Court is not suggesting that risk assessment will always deliver the wisdom which will avoid accidents. The report in respect of the explosion at Moura Number 2 Underground Mine on 7 August 1994 (in which eleven men died) demonstrates that, even where risk assessment has been used, accidents may still occur. Risk assessment is but one step in the systematic review of hazards. It is nonetheless an important step making it less likely, to use Mr Kininmonth's words, that matters will be overlooked.

Informing the Miners

Each risk assessment undertaken by the Gretley colliery before the inrush made provision for the workforce to be told of the risks, and to be put on alert.

There were symptoms of the impending disaster shortly before it occurred, although it must be acknowledged that they were subtle. A number of deputies noticed abnormal water in the weeks before the inrush.

Mr Porteous knew that the Young Wallsend Colliery was full of water, and that there was a head of water. His undermanagers (including the undermanager in charge), however, did not know, although each assumed that the old workings contained water. Very few of the miners who worked in 50/51 panel knew that the old workings were full of water. Plainly they should have been told. The miners would have been fully briefed had a risk assessment been undertaken. They should have been similarly briefed even though no risk assessment was undertaken.

Chapter 8 - THE DEPARTMENT

The Obligation of the Department

Once the Department receives an application to extract coal it is obliged to make an assessment under Section 138(1) of the Act. The Chief Inspector, Mr McKensey, in an introduction to certain guidelines which the Department uses, defined his role (and that of subordinate officers) in these words:

"It is the responsibility of the Chief Inspector of Coal mines to

have the proposal fully appraised and assessed and only if adequate, to approve the proposal subject to the observance of conditions considered appropriate."

The application passes through a number of hands. There is a system of "multi-level review". The separate duties of each level of review are defined within the guidelines known as Quality Assurance Work Instructions. The application first goes to the district inspector. The district inspector is obliged to satisfy himself that it conforms to the guidelines. He then distributes copies to persons described as "in-house experts". One is the Principal Subsidence Engineer (Dr Holla). The other is the Senior Inspector, Special Duties (Mr Anderson).

The application, and report of the district inspector are then passed to the senior inspector for review. Ultimately the application reaches the Chief Inspector.

The Gretley Application

On 6 September 1994 an application under Section 138 in respect of MW39-45 was lodged by Gretley. It was a substantial document, perhaps one inch thick including the annexed plans. The report required by the guidelines runs to 11 pages, of which 2½ pages are devoted to mine safety. In respect of the danger from inrush of water from old workings, the report provided one short paragraph.

The Report of the District Inspector

The application was reviewed by the district inspector, Mr Flett. He prepared a report. In respect of the danger of inrush, Mr Flett said:

"INGRESS OF WATER

Adjacent old workings to miniwall 39 are currently being dewatered and the manager advised this dewatering will be complete before extraction commences."

Pausing there, this was a reference to the danger of inrush from another set of abandoned workings, the Wallsend Borehole workings which were also at least partly full of water. The report continues:

"In accordance with the requirements of Clause of Coal Mines Regulation (Methods and System of workings - Underground Mines) Regulations bore holes are drilled ahead when approaching within 50 metres of then (*sic*) old workings."

Mr Flett was intending to refer to Clause 9 of the Methods and Systems Regulation. This short paragraph is the only material in the whole of the Department's Section 138 file which deals with the danger of inrush. There was no reference, as such, to the Young Wallsend colliery. Mr Flett recommended approval of the application.

Criticisms of the Department

The Department's handling of the Section 138 process was trenchantly criticised by a number of parties. Certain comments were directed to particular officers. Others dealt with the system established by the Chief Inspector. It is convenient to deal with these submissions under the following headings:

- First, there was criticism of Mr Anderson in his role as Senior Inspector (Special Duties), specifically in relation to a meeting on 11 October 1994 at the mine.

- Secondly, there were a number of criticisms of the system established by Mr McKensey, and in particular the acceptance without investigation of the Approved Plan.
- Thirdly, there was criticism of the Department's review procedures and in particular of Mr Flett in respect of his appraisal of the application. Those officers obliged to review his report (Messrs Morgan and McKensey) were also criticised for failing to recognise and correct the alleged deficiencies in Mr Flett's analysis.

In respect of Mr Anderson, three aspects of his conduct excited adverse comment from the company. They were:

- First, the limitation which Mr Anderson chose to place upon his role in respect of geotechnical assessments.
- Secondly, the failure of Mr Anderson to draw attention to the inadequate barrier between the Young Wallsend Colliery, and miniwall 44-45, as shown on the Approved Plan, (it being less than 50 metres).
- Thirdly, the failure of Mr Anderson to say anything to Mr Flett concerning the possibility that the plans may be grossly inadequate to the point where drilling ahead 200 metres may be regarded as prudent.

The Report considers each matter at some length. There is no substance in any of the complaints. Perhaps reference should be made to the third criticism. The company asserted that if Mr Anderson had knowledge before the inrush that plans may be grossly inaccurate (as to which it was obviously sceptical) then it was his duty to call attention to the potential for

harm arising from the proposed barrier. It was common ground that Mr Anderson administered no such warning.

The criticism, however, is unwarranted. Mr Anderson simply asserted that one should approach the issue of reliability of the plan without making assumptions as to the extent of possible inaccuracy. He was right to approach the issue in that way. There was no warrant for assuming that because the level of inaccuracy leading to inrush in New South Wales had never exceeded 26 metres in the past, that it would not do so in the future. It can be said, without hindsight, that it was demonstrably wrong to approach the important issue of the prevention of inrush with a fixed idea that Clause 9 would deal with whatever inaccuracy there may be within the plan.

The Court accepts that Mr Anderson was not hampered by these assumptions, and that his approach was in line with that recommended by the U.S. Federal Register, to which reference has been made. Each plan had to be examined, and a determination made as to whether it was reliable. If it was unreliable, it would be perfectly appropriate to turn to textbooks, as Mr Anderson did, for insight as to the way in which that issue might best be handled.

There is, fortunately, an illustration of Mr Anderson's approach which predates the inrush by some five years. It relates to the Gretley colliery. Mr Anderson's review of an inspector's report in respect of a Section 138 application, where there was the danger of inrush, demonstrates that he was conscious of the need to consider the reliability of the plan.

Criticisms of the System

Four matters were raised which may be thought to reflect upon the process established by the Chief Inspector for the assessment of Section 138 applications:

- First, Section 138 gave the power to impose conditions. The Chief Inspector recognised the merit of risk assessment as a process, and encouraged its use. However, he did not believe it appropriate to direct a mining company to undertake a risk assessment as a condition of approval, even where, as in this case, a substantial hazard was evident. Why did the Chief Inspector take that view?
- Secondly, the Chief Inspector saw the Department's role in respect of the issue of subsidence as quite different from its role in respect of safety. What was the basis for that distinction, and was it appropriate?
- Thirdly, and most importantly, Mr McKensey believed that he and his officers were entitled to accept the Approved Plan as accurate. It was, after all, certified by the mine surveyor, and accepted by the mine manager. In the absence of specific information that might suggest it was wrong, or manifestly in error, the Chief Inspector considered that his Department was entitled to accept the accuracy of the plan.
- Fourthly, the company suggested that the approval process ought to have required an examination by the Department of the material in its possession (including RT 523 sheets 1, 2 and 3) in order to satisfy itself that

nothing had been overlooked.

The Philosophy of Non-Intervention

It was evident that Mr McKensey was philosophically inclined towards self-regulation rather than prescription, and that this philosophy affected the way in which he exercised the power to impose conditions when giving approval under Section 138.

When Mr McKensey reviewed the Gretley's application in respect of MW39-45, he recognised that it did not include a risk assessment. He believed, therefore, that one had not been performed. He accepted that it was unlikely that one would be performed, unless he were to so direct. Yet Mr McKensey refrained from giving that direction. He ought not to have done so.

Mr McKensey believed that greater intervention and control was justified in the area of mine subsidence than in respect of mine safety. There is no warrant in S138 for that distinction. Indeed, the distinction carries with it the unfortunate suggestion that property is more important than human life. The distinction between mine subsidence and mine safety may to some extent explain the lack of intrusion by the Department into the discretion of management as to the way in which it should approach its task. The Court does not suggest that the Department should have assumed the manager's role. However, had the same rigour been applied to the issue of safety as was applied to subsidence, safety would have been enhanced.

Reliance upon the Approved Plan

Mr McKensey acknowledged that the Department had a responsibility

under Section 138(1) to examine each application with care. Its duty was to ensure that the proposal was "safe and sound". Now, the application in respect of MW39-45, of course, proposed a development which would partly surround the Young Wallsend Colliery, known to be filled with water. A barrier was the means by which the mine sought to prevent inrush. It was, therefore, fundamental to the success of that strategy that the plans of the old colliery were reliable. Yet the Department approached its task upon the basis that it was not required to examine that issue. It could simply accept the certified plan provided by the mine.

In the context of inrush, such a view emasculated the Section 138 process. It removed from consideration the very issue central to the Gretley application. The words of Section 138(1) provide no warrant for limiting the review process in that way. Nor, indeed, do the Department's guidelines. Such a limitation is not consistent with ensuring that the proposal is "safe and sound". The Department's faith in certification mirrors the view of a number of mine surveyors that certified plans could be accepted, and relied upon. That view has already been the subject of comment. The assumption of accuracy is unwarranted, and dangerous.

What should the Department have done? No doubt its examination of the issue concerning the accuracy of the plan would begin with a request to the company for its analysis, and the documentation upon which it relied. If that material were comprehensive, and furnished some basis for confidence in the plan, it may not then be necessary for the inspector to personally examine the documents held by the Department.

The Criticism of the Department's Review Process

This criticism relates to the alleged failure by the different inspectors,

including the Chief Inspector, adequately to appraise and review the application.

That obligation required those involved in the review process to have regard to the salient facts. Mr Hall QC suggested that the relevant matters, which the Department should have addressed, included the following:

- i. Whether drainage was feasible thereby removing the hazard altogether.
- ii. What the basis was for determining the location and extent of the old workings.
- iii. The need for an appropriate plan to drill ahead as a secondary precaution."

The report of the District Inspector, so far as it concerned the danger of inrush, was indeed brief. It deals with none of the issues identified by Mr Hall. There was no analysis of the logic behind the decision to drain the Wallsend Borehole Colliery, and yet not drain the Young Wallsend Colliery. The Wallsend Borehole Colliery was said to contain 500 megalitres of water. Young Wallsend Colliery contained only 25 megalitres. The Wallsend Borehole workings were recent, and well documented. The mine plan of the Wallsend Borehole Colliery had been found to be accurate when holing-in at Main West in 1992. The Young Wallsend Colliery, on the other hand, was old, having been mined between 1890 and 1912. It was a colliery in respect of which little was known. Why, in these circumstances, drain a massive new colliery, about which a great deal was known, and yet not drain a relatively small and very old colliery, about which little was known?

Mr Flett's report did not deal with the approved plan, and its reliability. This can, in part, be explained by the system established by the Chief Inspector

already described. Part of the explanation also lies in the fact that Mr Flett approached his task hampered by certain assumptions. He held the belief, shared by a number of others, that plans which came from the Department were accurate. Mr Flett, again like others, assumed that the "cushion" within Clause 9 for inaccuracy would accommodate any inaccuracy that there may be in the mine plan.

Mr Flett's review of the application, so far as it concerned inrush, is unsatisfactory. The Court accepts Mr Hall QC's identification of the salient facts. Mr Flett's report needed to review those issues, and did not do so. Neither the review of Mr Morgan (senior inspector), nor that of Mr McKensey, as Chief Inspector, corrected these shortcomings. A flawed strategy for dealing with the hazard was thereby approved.

Chapter 9 - THE REPLACEMENT SURVEYOR

Mr Robinson's Appointment

In May 1995 (that is 18 months before the inrush) Mr Robinson was appointed as a casual surveyor at Gretley. In September 1995 Mr Murray went on leave. The colliery is obliged under the *Coal Mines Regulation Act 1982 (Section 44)* to have a mine surveyor. Mr Robinson was appointed mine surveyor during Mr Murray's absence.

When Mr Robinson began at Gretley in May 1995, the development of MW39-45 was already well underway. Approval having been given by the Chief Inspector on 5 January 1995, a number of panels had been extracted. What research, if any, would one expect a person appointed to the position of mine surveyor to undertake in respect of a development which was then well advanced?

It is reasonable to suppose that Mr Robinson, when he first took up the position, simply had a caretaker role. Mr Murray was expected to return. However, from 1 April 1996 he was in that statutory position without interruption up to the inrush. Mr Knight's evidence, which the Court accepts, establishes that a statutory mine surveyor in the position of Mr Robinson is to be judged by the standards of a mine surveyor of ordinary competence carrying out his duties with reasonable care. In Mr Knight's opinion, which the Court also accepts, Mr Robinson had the obligation to familiarise himself with the workings of the mine and to assess for himself to what extent his predecessor had researched the Section 138 application.

Mr Robinson does not seem at first at any rate to have accepted that he had this responsibility. He said he had no reason to doubt the accuracy of the plans of the Young Wallsend mine held in Gretley files. Later he stated that he had no reason to doubt the accuracy of the work performed by Michael Murray in preparing plans showing Young Wallsend Colliery old workings in the Young Wallsend seam.

Mr Robinson said it was obvious to him that the issue of the depiction of the old workings had been thoroughly assessed and researched. However, when asked the basis for saying this was obvious, he said it was his faith in Michael Murray as well as his knowledge that "when people put workings on the plan, they do it accurately."

Mr Robinson was not aware of any efforts by Mr Murray to verify the accuracy of the Young Wallsend mine plans. He never saw a file at Gretley that was specifically related to the Young Wallsend Colliery. He never came across any surveyor's notes relating to the Young Wallsend Colliery. He did not agree that as the new surveyor it was his duty to give some

thought to the basis upon which Mr Murray had depicted the Young Wallsend Colliery, except in the sense that he must become familiar with the workings in the mine. Reminded of the question, Mr Robinson said he had done that, and referred to the Section 138 process, assuming apparently that it must have been researched and thoroughly assessed.

Thus, Mr Robinson seems to have proceeded as mine surveyor having no doubts or concerns about the location and extent of the Young Wallsend Colliery workings until September 1996. In his statement dated 25 February 1997 he set out:

"In September 1996, although I had no reason to query Michael Murray's work ... acting as a professional mine surveyor, I would endeavour to ascertain information which would reconfirm my acceptance of Michael Murray's work..."

For the purpose of determining whether he fulfilled his responsibilities with respect to the safety of the mine from the operations being conducted in 50/51 panel in its development towards the Young Wallsend Colliery old workings, it is sufficient to note that Mr Robinson in the evidence quoted above recognised that "acting as a professional mine surveyor" he had the responsibility of "reconfirming" Mr Murray's work.

"Reconfirming" Mr Murray's work required Mr Robinson to examine the available material, including that held by the repository of mine plans, the Department. This was not done.

The Court therefore finds that Mr Robinson's failure independently to investigate the basis upon which Mr Murray depicted the Young Wallsend Colliery workings on the Gretley mine plan was a breach of his responsibility as mine surveyor.

The Failure to Comply with Statutory Obligations

The last record tracing furnished by the mine to the Department before the inrush was in February 1995. It covered the period to 31 December 1994. It was not until three months after the inrush (17 February 1997) that this position was corrected. It appears that during much of 1995, and the whole of 1996, the mine was unable to produce either the mine plan or the record tracing, as required by the regulations.

This episode reflects poorly upon the Gretley survey staff. No doubt the illness of Mr Murray was a substantial part of the problem. However, Mr Robinson, as mine surveyor, should have ensured long before February 1997 that the problem was addressed, if not by computer then manually.

There is a further aspect which should be mentioned. It was evident that many of the plans reproducing the Young Wallsend Colliery (including the record tracings) were imperfect, failing to include roadways and other details contained in the Top Seam sheet. This likewise reflects poorly upon the Gretley survey staff. It was said to arise from a computer software problem. Although the problem was recognised, it was not corrected. Over a number of years, plans, which were plainly inaccurate, were reproduced and circulated, including the application under Section 138 to the Department. The staff seemed to have had a lackadaisical approach to their important duties with no proper supervision by the mine managers.

Chapter 10 - THE WATER ISSUE

The Issues raised by Submissions

In the weeks preceding the inrush there were reports of water in 50/51

panel, culminating in a report from a mine deputy, Mr McLean, on 13 November 1996, the day before the inrush, which included this:

"Coal seam is giving out considerable amount of water seepage at face C hdg"

The submission made by Mr Hall QC, on behalf of the Relatives, was that the presence of water in MW Panels 50/51 was an obvious sign which, though brought to the attention of management, was effectively ignored, resulting in the loss of a critical opportunity to have prevented the disaster that occurred on 14 November 1996.

The company, and mine manager, on the other hand, asserted that Gretley was a wet mine, and that the water which was reported was in no way unusual. It is only with hindsight that it can be recognised as a symptom of the tragedy which lay in wait. Accordingly, they say that there was no breach of duty. The inrush was caused by an error in the plans. It was not the product of any absence of diligence by the company, or its officials, whilst mining was taking place.

The Observations of the Miners

There is no question that Gretley is a wet mine. It was common ground, however, that 50/51 Panel was one of the driest panels in the mine.

The Coal Mines Regulation Act 1982 establishes a regime whereby reports of conditions in the mine are passed from one level of management to the next. These elaborate provisions recognise the importance of timely information in accident prevention.

In the period shortly before the inrush, there were observations of water in 50/51 panel. There were four reports of water in the first week of November 1996. They were:

- A statutory report of Mr McLean on 1 November 1996.
- A report by a mine deputy, Mr Bernard, to the undermanager in charge, Mr Alston, on 4 November 1996.
- A conversation between Mr McLean, a mine deputy, and the manager, Mr Porteous, on 4 November 1996 in the course of inspection by the district inspector, Mr Van Dijk.
- A further statutory report after the completion of Mr McLean's shift on 4 November 1996.

These reports were made ten days, and in one case thirteen days, before the inrush. The Court will comment separately upon the further report of Mr McLean made the day before the inrush.

The Inspection by Mr Van Dijk

Dealing with the conversation between Mr Porteous, the mine manager, and Mr McLean on 4 November 1996, it occurred during the course of an inspection by the district inspector, Mr Van Dijk. Mr Porteous recalled Mr McLean saying these words:

"There is water gathered in 7 cutthrough. We are not close to the old mine are we?" I said: "We are not close to the old mine. It is about 200 metres away from here." Mr. Van Dijk was nearby at the time of this conversation. I said to Mr. McLean; "While we are here we will go up and look at

this water." I said to Mr. Van Dijk: "Come on, let's have a look at this water". We then left the face area and walked back to 6 cutthrough which was about 80 metres away. ..."

(emphasis added)

The Court is in no doubt that Mr McLean was expressing concern about the water in 7 cut-through, and whether it signalled that the abandoned colliery was closer than the plan suggested. Mr Porteous did not need to read Mr McLean's mind to discern that clear message. The misgivings of an experienced deputy about a serious potential hazard, namely inrush, ought to have made Mr Porteous pause, and reflect upon what was being said. Instead, he brushed Mr McLean's concern to one side, glibly referring to the plan. A warning went unheeded which, had it been taken seriously and investigated, may have exposed the inadequate basis upon which the Young Wallsend Colliery had been depicted.

At the end of the shift Mr McLean once again drew attention to the water in 7 cut-through, emphasising, by his choice of words, the build up since his report of 1 November 1996. He said:

"Large amount of nuisance water in C-B 7 ct."

There were, before the Court, many statutory reports by deputies. The reports of Mr McLean of 1, 4 and 13 November (the last being the report from the day before the inrush) are indeed unusual. Superficially, the water was merely a nuisance. The accumulation in 7 cut-through to a level of 600 mm did not represent a safety hazard, as such. However, that was not the only issue. Did the water, and the build up of water, represent a "danger signal"? What was its source? What, if anything, did it suggest in relation to the flooded old workings which lay ahead?

Certain steps were taken or planned by the mine in the days that followed. The issue is whether these steps were a reaction to the reports of water, and a concern about the location of the Young Wallsend Colliery, or whether they were unrelated. The steps were:

- First, a proposal to drill ahead which, in November 1996, became part of the strategy for 50/51 Panel (although, tragically, was not carried out before the inrush)
- Secondly, contact by Mr Robinson with the Mine Subsidence Board seeking information to enable him to confirm the position of the Young Wallsend Colliery.

These steps, whether or not they were connected to the reports of water, were too little too late. Only Mr McLean appeared to give serious thought to the source of the water, and the wider ramifications it may have had in respect of the accuracy of the plan. Even Mr McLean, when he gave evidence, seemed somewhat embarrassed that he alone had applied his mind to these issues. He sought to discount his observations in various ways, which were not convincing. The Court is in no doubt that Mr McLean was a conscientious deputy who made careful observations. The reports of Mr McLean recorded the observations of an experienced deputy, and were deserving of greater attention than they were apparently given.

What should have been the response of management to the observations of Mr Bernard and Mr McLean in early November 1996? Mr Anderson, whose evidence is accepted, believed that water should have been monitored. However, no one at the mine saw the need to monitor the build up of water in 7 cut-through with a view to determining its likely source, and whether there was a need to change the strategy in order to prevent

inrush.

Proposal to Drill Ahead

It was always planned to drill to the side of the development to confirm the location of the dykes. The planning minutes for the week commencing 5 November 1996 included such drilling. However, drilling in advance was new. The question is: why did the mine, in early November 1996, decide that drilling ahead should be undertaken?

The picture which emerges from the evidence is as follows:

- First, the issue concerning drilling ahead was handled by the undermanagers. Mr Porteous was not informed. Indeed, he did not know of the proposal to drill ahead until after the inrush.
- Secondly, there was an impediment to the adoption of drilling ahead as part of the strategy to prevent inrush. Mr Alston, the undermanager in charge, did not see the need for it. It was not part of his strategy to prevent inrush. Even when the issue was raised by Mr Pritchard in early November 1996, Mr Alston remained unconvinced.
- Thirdly, Mr Pritchard, on the other hand, was concerned about water. The Court believes that he did recognise the possibility that the plan may be inaccurate. However, he was not yet in charge, and would not assume control until after 8 November 1996, when Mr Alston went on leave.
- Fourthly, meanwhile Mr Alston gave no direction to suspend mining, and monitor the build up of water, as he ought to have done. He did not discuss the matter with the manager. Instead, mining proceeded. On 5 November 1996 B heading was completed to 7

cut-through, thereby liberating the water which had accumulated. The symptoms of the problem, or possible problem, disappeared from sight.

- Fifthly, the concern felt by Mr Pritchard, therefore, never became alarm because the problem was not adequately investigated. Indeed, Mr Alston did not apparently inspect the water himself. When, before his departure on 8 November 1996, Mr Alston last inspected 50/51 Panel cannot be determined. He did not complete a daily report with respect to the general safety of the mine after each inspection, notwithstanding the Regulation which provided for that to be done (*Clause 56, Managers & Officials Regulation 1984*). One could only agree with the comment by Mr Hall QC, on behalf of the relatives, that Mr Alston's breach of the Regulation reflects an alarmingly casual attitude, made all the more serious when he is in a position of leadership.
- Sixthly, part of the reason for the apparent lack of concern by Mr Alston may be a conversation with Mr Robinson, where he provided certain reassurance in respect of the location of the Young Wallsend Colliery following the investigation of that issue by reference to material provided by the Mine Subsidence Board. The Court will now deal with that aspect.

Two Competing Versions

Shortly before the inrush Mr Robinson approached the Mine Subsidence Board for assistance. He wished to confirm the position of the Young Wallsend Colliery old workings. He spoke to Mr Hartley. There are serious differences between the account given by Mr Robinson, and that of Mr Hartley as to what was said, and the assistance provided.

The points of difference between the two accounts are:

- First, there is a difference as to what was said. Mr Hartley asserted, and Mr Robinson denied, that Mr Robinson referred to a problem with water at the mine, which management was in a hurry to resolve.
- Secondly, there is a difference as to when the conversation took place. That difference is important. Mr Hartley suggested that the conversation occurred in the week beginning 4 November 1996. By the morning of 4 November Mr Bernard had made his report to Mr Alston concerning water in 7 cut-through, and Mr Pritchard had suggested drilling ahead. However, submissions made for Mr Robinson asserted that the conversation with Mr Hartley occurred no later than 31 October 1996. If that were right, then management's attention had not yet been drawn to the water in 50/51 Panel. If there were a reference to water during the conversation, therefore, it must have been a reference to water somewhere else.
- Thirdly, there is a difference between the two accounts as to the assistance provided. Mr Hartley asserted, and Mr Robinson denied, that RT 523 sheet 1 (in three sheets) was provided.

The Attack upon Mr Hartley

It is instructive to begin with the question which the submission on behalf of Mr Robinson poses, namely, why should Mr Hartley lie?. Indeed, since

Mr Hartley's evidence is supported by Messrs Hansen and Smith, of the Mine Subsidence Board, the question must be amended: why should Messrs Hartley, Hansen and Smith deliberately lie to the Court?

The submission for the Australian Collieries' Staff Association attempted to suggest a motive. However, for reasons provided by the Report, their submission is rejected. Mr Hartley impressed the Court as a truthful witness. His evidence is accepted. Mr Hansen and Mr Smith were likewise truthful witnesses. Their evidence is also accepted. Where Mr Robinson's evidence conflicts with that of Mr Hartley, Mr Hartley's evidence is preferred.

The Court finds, therefore, that Mr Robinson did refer to a water problem at Gretley in his conversation with Mr Hartley. However, that finding does not resolve all issues between Mr Hartley and Mr Robinson. Although there was reference to a water problem, was Mr Robinson referring to the Glendale region of the mine (where there was a water problem) rather than 50/51? The resolution of that issue rather depends upon when the conversation took place. Although Mr Hartley is accepted as a truthful witness, is it possible that he is mistaken in his recollection that the conversation took place in the week beginning 4 November 1996? Is there any chance that his truthful recollection that RT 523, sheet 1 was supplied may be wrong? To deal with these issues the Court will now examine what prompted Mr Robinson to approach the Mine Subsidence Board, and when that approach was made.

Mr Robinson's Approach to the Mine Subsidence Board

After a detailed analysis of the evidence, the following findings of fact are made in relation to the events of 4 November 1996:

- That on the morning of 4 November Mr Bernard (in company with Mr Pritchard) observed the build up of water in 7 cut-through, which he later reported to Mr Alston, then undermanager in charge
- That on the same morning Mr Pritchard discussed the water with Mr Alston and suggested drilling ahead.
- That Mr Robinson was present during these discussions, or a significant part of them.
- That later the same morning Mr Robinson telephoned the Mine Subsidence Board, seeking plans which would enable him to confirm the location of the Young Wallsend Colliery
- That in the course of that conversation Mr Robinson spoke to Mr Hartley and said that Gretley had a water problem

These being the facts, the Court is left with the choice between two hypotheses. The first is that Mr Robinson's inquiry of the Mine Subsidence Board was made for no reason except in fulfilment of his professional duty, and that if he did mention water (which he denies), then he must have been referring to the water problem at Glendale, since he had no knowledge of any water problem in 50/51 Panel.

The Court prefers the second hypothesis. It believes, as a matter of probability, that these events are connected. Mr Robinson witnessed Mr Pritchard urging Mr Alston (who needed persuading) to drill ahead on 4 November 1996. He heard the reference to water in 7 cut-through. He recognised that drilling ahead was being suggested because there was the possibility that the plan may be inaccurate. He, therefore, decided to check the plan. He rang the Mine Subsidence Board that morning (4 November

1996) and spoke to Mr Hartley. In the course of that conversation he referred to a water problem at Gretley. He was referring to 50/51 Panel, not Glendale.

The Plans provided by the Mine Subsidence Board

What plans were provided by Mr Hartley to Mr Robinson? For a number of reasons which are set out in the Report, the Court believes, as a matter of probability, that RT 523, sheet 1 was included in the plans made available to the mine by the Mine Subsidence Board.

The Duty of Mr Robinson

As stated above, the Court believes that Mr Robinson, having heard the discussion between Mr Pritchard and Mr Alston concerning drilling ahead, recognised that there was an issue as to the accuracy of the depiction of the Young Wallsend Colliery, and resolved to investigate the location of the old workings.

The Court has already determined that well before November 1996 Mr Robinson was under a duty to ascertain the basis upon which Mr Murray had depicted the Young Wallsend Colliery, and the adequacy of the research which underpinned that depiction. It is plain that Mr Robinson did not appreciate that he was under that duty. He assumed that he could rely upon Mr Murray having properly done his job.

However, by November 1996 Mr Robinson did recognise that there was an issue concerning the depiction of the Young Wallsend Colliery. He went part of the way in resolving that issue. He satisfied himself that the position of the Young Wallsend Colliery was accurate. However, he should not have

stopped his investigation at that point. Once there was doubt in his mind, it was his duty, first, to inform the manager, and secondly to resolve that doubt completely (or disclose to his superiors that it was incapable of resolution, because of the paucity of material). An opportunity to make good the defects of Mr Murray's research, and his own, was therefore lost.

Chapter 11 - THE DEPUTY'S REPORT

The Issues arising from Mr McLean's Report

Mr McLean was the deputy on the day shift on Wednesday 13 November 1996, the day before the inrush. His shift began at approximately 6.30 am. Shortly after 3 pm (that is, a little over 14 hours before the inrush) he handed his statutory report to the day shift undermanager, Mr Coffey. On any view, Mr McLean's report was unusual. It included the words already referred to, namely:

"Coal seam is giving out considerable amount of water seepage at face C hdg."

When the report was handed to Mr Coffey, he directed a number of questions to Mr McLean. Having heard his answers, Mr Coffey resolved to do nothing. The conversation took place in the presence of the undermanager for the next shift, Mr Shacklady. He likewise formed the view that nothing was required to be done.

Before dealing with the obligations of Messrs Coffey and Shacklady, and whether they were in breach of such obligations, it is first necessary to determine the following issues of fact:

- First, what did Mr McLean in fact observe in C heading on 13 November 1996?
- Secondly, what was said by Mr McLean, when questioned by Mr Coffey, about his report?

What did Mr McLean observe?

Mr McLean repeatedly suggested that he had used the wrong words in his report. He claimed that what he saw was a trickle. It was not considerable. However, the Court does not accept that Mr McLean used the wrong words. He quite deliberately chose the phrase "considerable amount of water seepage at face" because those words accurately described what he saw. The Court takes this view for a number of reasons which are set out in the Report. They include his comments to members of the crew working alongside him during the shift (especially his observation to Mr Stewart: "There's water in that face") which are consistent with the words which he ultimately used in the statutory report.

What did Mr McLean say to Mr Coffey?

What did Mr McLean say in response to Mr Coffey's questions about his report? Resolving that issue will be assisted by an appreciation of the way in which Mr McLean viewed the water seepage which he described in his statutory report. Mr McLean permitted his men to remain in C heading, and the face to advance a further 12 metres, during the course of the shift. It is, therefore, accepted that he saw no immediate danger arising from the presence of water.

The Court believes, nonetheless, that Mr McLean was concerned by what he saw. His conversations with Messrs Collins, Stewart and Brown during

the shift demonstrate that concern. He saw the link, or possible link, between the water and the old workings, and recognised that it may be a symptom of danger. He was right to do so. Any water inflow in the vicinity of abandoned mines, whatever the water quality and whatever the indicated barrier width, should be considered a danger signal.

The danger seen by Mr McLean on 13 November 1996 was the same danger which he had drawn to Mr Porteous' attention on 4 November 1996. Did the presence of water suggest that the plan may be inaccurate, and the old workings closer than depicted?

Mr Coffey, when presented with Mr McLean's report, had the same concern. He immediately turned to the mine plan, and measured the distance between the face, as established during the day shift, and the Young Wallsend colliery. Mr Shacklady, too, made the link between the presence of water, and the possibility that the plan may have been inaccurate. He immediately inquired about drilling ahead.

Mr McLean placed the report on Mr Coffey's desk, without comment, and turned to leave. What significance should attach to that fact? Walking out simply meant that Mr McLean did not recognise an immediate threat to safety. It does not mean that he did not see a potential threat to safety. For the reasons given, the Court believes Mr McLean did see such a threat. However, he was content to allow the system in respect of statutory reports to deal with his observation, and concern.

The Court does not accept Mr McLean's assertion that, when questioned, he, in effect, withdrew his report, saying that the water seepage was not considerable. The Court also does not accept Mr Coffey's assertion that Mr McLean said (referring to the description of water): "It is not anything to

worry about." It is significant that those words do not appear in Mr Coffey's first account of this conversation to the inspectors.

Nonetheless, the Court believes that something must have been said by Mr McLean which qualified the words in his report, or the impression which they created. Something was said which, in Mr Coffey's mind, transformed the report from something which no-one (including Mr Coffey) could ignore, into something which Mr Coffey (and Mr Shacklady) chose to ignore.

Four aspects of Mr Coffey's conduct were the subject of comment:

- First, the adequacy of his investigation, in terms of his questioning of Mr McLean.
- Secondly, was there a need for further investigation? Should Mr Coffey have inspected the face himself, or arranged for Mr Shacklady (who was about to commence his shift) to do so? Should the water have been monitored?
- Thirdly, should Mr Coffey have notified the undermanager in charge?
- Fourthly, Mr Coffey having made a determination that no action was called for, should he have made a report which would then have been available to those on subsequent shifts?

The Adequacy of Mr Coffey's Investigation

Mr Coffey's investigation of the observations of Mr McLean was superficial. Having recognised from Mr McLean's report the symptoms of danger, they were dismissed too readily. Because Gretley is a wet mine, Mr Coffey was

prepared to assume that a trickle of water was of no consequence. Because the Young Wallsend Colliery was 130 metres away, according to the plan, considerable seepage at the face (manifesting itself in a continuous trickle) was likewise of no concern.

However, something more than a superficial assessment was called for in circumstances where mining was taking place in the vicinity of old workings, known to be full of water. The terms of Mr McLean's report were startling, and different. They were the observations of an experienced deputy. The panel was known to be the driest in the mine. How long had Mr McLean observed the considerable seepage at the face? What was the flow rate of the trickle? Had the water reappeared after production ceased? What was the likely source? If the Young Wallsend Colliery was a possible source, what did that suggest? Might the plan be wrong?

None of these questions was asked nor answered. Mr Coffey, as an undermanager, was obviously not responsible for the mine plan. He had plainly not undertaken the research into the depiction of the old workings. He believed that the depiction of the old workings was accurate (at least to within a couple of metres). However, that belief was based upon faith rather than knowledge. He ought to have been prepared to question that faith, when confronted by a report as disturbing as that of Mr McLean of 13 November 1996. At the very least, he ought to have inspected the face, or arranged for its inspection. The maintenance shift (where there would be no production before midnight) provided an ideal opportunity to monitor the face, and the flow of water, if it were to reappear. The undermanager in charge ought to have been informed.

The Inspection of Mr Hegarty

The afternoon shift began at approximately 2.30 pm. The deputy was Mr Hegarty, who had considerable experience.

Mr Hegarty's attention was not drawn to Mr McLean's report. Nonetheless, as a mine deputy, he was obliged to read the report of the outgoing deputy. He did so, initialling Mr McLean's report upon the copy which was kept underground. Mr Hegarty found a trickle of water. There was no obvious source. It continued throughout the shift. Mr Hegarty's report at the end of the shift made no reference to Mr McLean's report, or to water he had seen, which is surprising. Given that Mr McLean's report was "significant" (to use Mr Hegarty's word), and disturbing, one would have expected some comment. Had there been a comment, those on later shifts would have had their attention drawn to Mr McLean's report, which they may otherwise not have read.

Mr Shacklady's Role

Although the responsibility for recognising the issue arising from Mr McLean's report, and responding appropriately, was primarily that of Mr Coffey, being the person to whom Mr McLean handed that report, nonetheless, Mr Shacklady also had a responsibility as the undermanager on the next shift. He inherited the problem. He acknowledged that Mr McLean's report was a "highly significant report". He knew that Mr Coffey had not been underground, and made his own inspection, following the presentation of that report. He knew that the only investigation made by Mr Coffey was a brief conversation, approximately 2 minutes with Mr McLean. He should have recognised that he did not have enough information to conclude that there was no problem. Much would depend upon whether

the water reappeared once production was suspended. In these circumstances, he ought to have inspected the face himself. At the very least, he ought to have questioned Mr Hegarty about what he had found. He did neither.

The Nightshift of 13/14 November 1996

The inrush occurred during the course of the nightshift (5.31 am on 14 November 1996). The shift began at 11.30 pm. The undermanager for the shift was the undermanager in charge, Mr Pritchard. Mr Pritchard was not told of Mr McLean's report, nor Mr Coffey's conversation. He did not himself read Mr McLean's report, although he did read that of Mr Hegarty, the deputy on the preceding shift.

It would certainly have been good practice for Mr Pritchard to have read the reports of the last production shift. However, the primary duty to pass on information about matters which may affect safety on his shift rested with Mr Shacklady. Because Mr Shacklady (like Mr Coffey before him) had wrongly dismissed Mr McLean's report, he failed to alert Mr Pritchard to that report, and to Mr Coffey's "investigation". Had Mr Pritchard been told of Mr McLean's report, he may have linked Mr McLean's observation with the water he had seen ten days earlier in 7 cut-through. He may in those circumstances have examined the area himself.

At 5.20 am, Mr Nichols parked the shuttle car in 7 cut-through. He made his way down B heading to the crib room (at 6 cut-through). He arrived at 5.30. Within ten seconds he noticed water coming underneath the trapdoor in the stopping. After a further 10 or 15 seconds the door burst open and water rushed into the crib room with force so great that he found it hard to stand up.

The tragedy, therefore, was complete. The Mines Rescue Team began its work, seeking to determine whether there were any survivors. The rescue effort was rapid and professional. The only real blemish was the failure of the mine to notify the Police and Ambulance Service once it was recognised that men were missing.

Causes of the Tragedy

The evidence before the Inquiry has demonstrated serious shortcomings in the performance of the Department of Mineral Resources, in the context of Gretley, and that of the mining company, The Newcastle Wallsend Coal Company Pty Ltd. In the case of the mining company, the shortcomings were widespread. They affected every level of management, namely successive mine managers, mine surveyors and certain undermanagers. They are dealt with in detail throughout the Report and are collected in the Summary of Findings. Those which appear to the Court to be the most important and clearly linked, directly or indirectly, to the tragedy are as follows:

- First, the Department was responsible for the creation of RT 523, sheets 2 and 3, which misinterpreted sheet 1. The failure properly to interpret sheet 1 was the consequence of a lack of care on the part of the Department. These plans were potentially dangerous, available and intended to be distributed by the Department from time to time to mining companies. A potential problem would become an actual problem, unless it were recognised beforehand.
- Second, there was a failure by the then mine surveyor (the late Mr Murray) properly to research the Young

Wallsend Colliery before depicting the colliery on the mine plan, and in the section 138 application to the Department.

- Third, there was a failure by the mine manager, Mr Romcke, to determine the basis upon which the colliery had been depicted, and to recognise that the task had not been properly performed.
- Fourth, there was a failure by Mr Porteous, who succeeded Mr Romcke as mine manager, to discharge the same obligation, namely to determine the basis upon which the old colliery had been depicted, and recognise that it had not been properly researched.
- Fifth, there was a failure by both Mr Romcke and Mr Porteous to prevent inrush by devising an appropriate strategy, and in failing to use the technique of risk assessment to assist them in determining that strategy.
- Sixth, there was a failure by the Department properly to appraise and evaluate the application by the company under s138. A flawed system was approved.
- Seventh, there was a failure by the new mine surveyor, Mr Robinson, to investigate the basis upon which his predecessor had depicted the Young Wallsend colliery, and to recognise that the issue had not been properly researched.
- Eighth, Mr Robinson in November 1996 did recognise that there was an issue concerning the depiction of the Young Wallsend colliery, but failed properly to investigate that issue.

- Ninth, in early November 1996 Mr Alston, the undermanager in charge, failed properly to investigate reports of water in 50/51 panel made to him by at least two deputies.
- Tenth, that on 13 November 1996, the day before the inrush, Messrs Coffey and Shacklady, both undermanagers, failed properly to investigate the issues raised by the report of Mr McLean, a mine deputy, and failed to inform the undermanager in charge, Mr Pritchard, of the contents of that report.

REPORT OF FORMAL INVESTIGATION

1. INTRODUCTION

1.1 The Accident

At about 5.30 am on 14 November 1996 employees of The Newcastle Wallsend Coal Company Pty Limited (the company), a wholly owned subsidiary of Oakbridge Pty Limited, were engaged in work on the night shift at the company's mine, the Gretley Colliery (Gretley). Four men of a team of eight were in the process of developing a roadway (known as C heading) in an area of the mine called 50/51 panel, operating a continuous mining machine. The remaining four members of the team were in a crib room a little distance away.

Suddenly, with tremendous force, water rushed into the heading from a hole in the face made by the continuous miner. That machine, weighing between 35 and 50 tonnes, was swept some 17.5 metres back down the heading where it jammed against the sides. The four men were engulfed by the water, swept away and drowned. The remaining team members survived the disaster by reason of being in the crib room, which itself was flooded.

The deceased men were: Edward Samuel Batterham, mining deputy, 48 years of age; John Michael Hunter, miner, 36; Mark Kenneth Kaiser, mechanical fitter, 30; Damon Murray, miner, 19.

The water came from the long-abandoned old workings of the Young Wallsend Colliery. The mine was working to a plan, which had been approved by the Department of Mineral Resources (the Department). The plan showed the Young Wallsend Colliery more than 100m away from the point of holing-in.

It is now clear that the plan was wrong. At the commencement of the night shift at 11.00pm on 13 November 1996, the Young Wallsend Colliery was only 7 or 8 metres away.

The workings of the old mine were full of water. Moreover, the water extended to the surface by means of the mine shafts, thereby providing what is known as a head of water. This head of water had the effect of significantly increasing the water pressure.

The Young Wallsend Colliery

This colliery, near Wallsend, was opened by the Young Wallsend Coal Mining Company Limited in 1890 for the purpose of extracting coal from a seam (now known as the Young Wallsend seam) about 450 feet below the surface, and from the Borehole seam at about 520 feet. For various reasons the mine ceased operations in 1892 and was closed down. In 1907 the mortgagee in possession commenced the unwatering of the mine and operations resumed. However, the mine finally closed in 1912 after further financial difficulties. It seems that the Borehole seam had not been developed except for the shaft connections. The mine remained closed, its two shafts capped and was formally declared abandoned on 19 June 1928 by the Department of Mines, no Notice of Abandonment having been received.

The Newcastle Wallsend Coal Company Pty Limited

The company has produced coal since 1861 and operates two underground collieries, Gretley near Wallsend and Pelton/Ellalong Colliery near Cessnock. Gretley has been operated by the company since 1968 and was upgraded in 1988 with the introduction of miniwall mining.

In March 1994 the company secured a coal lease under the *Coal Mining Act 1973* from the Minister for Mines of some 385 hectares of land adjacent to the land it was working at Argenton and which included the abandoned Young Wallsend Colliery. The purpose of obtaining this lease was to enable the company to continue to produce coal from the Young Wallsend seam for several more years.

1.2 The Issues

The Court's task under s95 of the *Coal Mines Regulation Act 1982* is to determine the 'causes and circumstances' of this tragedy. The Court is enjoined, moreover, to add 'any observations which (it) thinks right to make' (s98) arising out of its investigation. The hope is, no doubt, that lessons will be learned, and similar occurrences avoided in the future.

What, then, are the issues?

- **First**, there is an issue concerning the mine plan. There is no question that it was wrong. What was the nature of the error, and how did it come about? (**The Plan Issue**)
- **Second**, the Department has the Statutory obligation of allocating leasehold rights in respect of coal deposits throughout New South Wales. In July 1992 it invited a mining company (F.A. I. Mining Limited) to apply for a lease to mine an area immediately adjacent to the Young Wallsend Colliery [Ex.94.02]. In 1994, the Department allocated the adjoining area (which included the Young Wallsend Colliery) to the

company [Ex.6.24]. The company, in its submissions to this Court, has criticised the Department for not having recognised the potential for error in the depiction of the old mine, and for not having provided a special barrier around the old workings to alert others to the presence of danger. (**The Special Barrier Issue**).

- **Third**, was the error in the plan reasonably discoverable by the mine management of Gretley? What research did the mine undertake before depicting the Young Wallsend Colliery workings on the mine plan? Was that research adequate, judged by the standards of prudent surveying and mining practice? (**The Depiction Issue**)
- **Fourth**, there is an issue concerning the precautions taken by the mine to avoid inrush. Successive mine managers, concerned with development of 50/51 panel in the vicinity of the Young Wallsend Colliery, decided not to drain the old workings. Rather, they each decided to isolate the mine from the danger of inrush by leaving a barrier of unworked coal around the old colliery. Was it reasonable not to drain the old workings, judged by the standards of prudent mining practice? (**The Drainage Issue**).
- **Fifth**, having decided not to drain the Young Wallsend Colliery, and to rely upon a barrier, what precautions should have been taken as a matter of prudent mining

practice to ensure that the barrier would provide the separation necessary to safeguard the mine? Was it necessary to drill ahead in order to demonstrate the integrity of the barrier? (**The Barrier Issue**)

- **Sixth**, some mines, when faced with significant and unusual hazards, carry out what is known as a Risk Assessment. A Risk Assessment is the systematic analysis by an expert team of the hazards involved in a particular proposal, and the means by which those hazards may be eliminated or ameliorated. The company at Gretley did not undertake a Risk Assessment in respect of the proposed development adjacent to the old workings of the Young Wallsend Colliery. Should it have done so? Had it done so, is it likely that the error in the plans would have been uncovered? (**The Risk Assessment Issue**).
- **Seventh**, the mine management was obliged to seek the Minister's approval to extract the blocks of coal (50/51 panels) on either side of the roadways which were being driven (A, B and C headings) (*s138 of the Coal Mines Regulation Act 1982*). Mr Romcke, the mine manager, prepared a lengthy application describing the mine's proposal. The application was submitted to the Department in September 1994. It was examined by a number of inspectors, including the Chief Inspector. Each inspector was either a mining engineer or a former mine manager or both. Approval was then given, subject to a number of

conditions. Was the evaluation by the Department adequate? Should approval have been given? Should that approval have included conditions to safeguard against inrush? (**The Approval Issue**).

- **Eighth**, the mine surveyor who had researched the old workings for the purposes of the mine's application to the Department (Mr Michael Murray) fell ill in September 1995. He was diagnosed as having cancer. He worked intermittently thereafter until 21 May 1996. He died on 2 October 1996. Under the Coal Mines Regulation Act, the mine is obliged to have a mine surveyor (s44). During the periods that Mr Murray was unable to work, and once he ceased work altogether, he was replaced by another surveyor, Mr Mark Robinson. Should Mr Robinson have discovered the error in the plan? (**The Replacement Surveyor Issue**).

- **Ninth**, in early November 1996 (that is, two weeks before the tragedy) there were reports of water in 50/51 panel. At about the same time Mr Robinson sought certain information relating to the Young Wallsend Colliery from the Mine Subsidence Board in Newcastle. Mr Robinson denied that his request was in any way related to the water reported in 50/51 panel, or to any uncertainty in relation to the plans. Evidence from personnel attached to the Mine Subsidence Board suggested otherwise. Where does the truth lie? What was the purpose of Mr Robinson's

inquiry? (**The Water Issue**).

- **Tenth**, on the day before the inrush, the mine deputy on the day shift, Mr Alistair McLean, submitted a report which included the following words [Ex.6.2]:

"Coal seam is giving out considerable amount of water seepage at face C hdg"

Was this a warning of the impending tragedy, and if it was, why it was not heeded? (**The Deputy's Report**).

- **Eleventh**, personnel of the Mines Rescue Service arrived at the pit within 50 minutes of the inrush. The Police were summoned somewhat later (8.10am). The bodies were discovered soon thereafter, and were brought to the surface at about midday. Some criticisms have been made of the rescue effort. Most were minor, and some unfounded. They are briefly examined in the Report (**The Rescue**).

1.3 **Subsidiary Issues**

During the Court's investigation, a number of subsidiary matters were examined which, in one way and another, were intimately connected with these issues. They were:

- **First**, there were a number of issues concerning the Department's role in investigating mining accidents, and especially serious mining accidents. There was a general issue concerning the appropriateness of

inspectors from the Department undertaking an investigation where the Department may itself be implicated as one of the indirect causes of the accident. The Department may be implicated by having given approval when approval ought to have been withheld, or in failing to detect and correct unsafe conditions whilst conducting mine inspections. There is an apparent conflict of interests which may inhibit dispassionate investigation. There were also questions concerning the particular investigation by the Department into the inrush at Gretley. These matters are examined in the course of this Report (**The Investigation Issue**).

- **Secondly**, the *Coal Mines Regulation Act 1982* includes elaborate provisions relating to offences against the Act (s160 and following). The *Occupational Health & Safety Act 1983* likewise includes offences in respect of accidents occurring in the workplace where the employer has failed to ensure the health and safety of workers. This notwithstanding, not one mining company has been prosecuted in the more than seven years during which the present Chief Inspector (Mr McKensey) has held office (since 30 April 1990), despite some 33 deaths in that time [Ex.17.14]. In this respect the Chief Inspector appears to have continued practices which were already well entrenched before his arrival. Does the timely prosecution of acts of gross neglect which lead to death or serious injury make any contribution

to mine safety? Does the failure to prosecute, even acts of serious neglect, encourage behaviour which is less than prudent, or less careful than it might be if mining companies, and mining officials, knew that they were accountable for their actions before a Court? **(The Prosecution Issue);**

- **Thirdly**, the holing-in obviously permitted much of the water within the Young Wallsend Colliery to flow into the Gretley mine. A seal has now been erected in C heading, separating the old workings from the mine. However, over time, gases are likely to build up within the old workings. Those gases are potentially explosive. Does that potential represent a threat either to the surface area (via the shafts) or to the mine? If there is that potential, how can it best be managed? **(The Aftermath)**

1.4 The Course of the Investigation

Mr David Kirby QC and Mr John Higgins were appointed Counsel Assisting the Court. The following parties sought, and were given leave, to appear:

- The relatives of the deceased represented by Mr P. Hall QC.
- The Newcastle Wallsend Coal Company Pty Ltd (a subsidiary of Oakbridge Limited), being the operator of the Gretley Colliery, represented by Mr C. Steirn SC with Mr R. C. Williams and Mr R. C. Nicholls.
- The mine manager, Mr R. Porteous, represented by Mr B. T. Stratton QC with Mr G. McGrath.
- The Australian Collieries' Staff Association (on behalf of undermanagers and surveyors) represented by Mr I. D. Strathdee QC and Mr A. C. Girard.
- The Director General, Department of Mineral Resources, represented by Mr C. Leggat of Counsel.
- The Construction, Forestry, Mining & Energy Union (the CMFEU) (on behalf of miners and mine deputies) represented by Mr S. Crawshaw of Counsel.
- The Mines Rescue Service represented by Mr W. G. McNally, Solicitor.
- The Police Service represented by Mr G. J. Willis of Counsel.

The Colliery Officials' Association, a union representing certain officials within the mining industry, also sought, and was given leave to appear. It chose not to avail itself of that leave, however, and did not participate in the public hearings.

The company known as the United Mining Support Services Pty Ltd was also given leave to appear. In recent years the mining industry has used contract labour to some degree rather than permanent employees where there is a need for additional labour. United Mining Support Services Pty Ltd is a company part-owned by the CMFEU, which provides contractors to mines when required. Three of the four men who died (the exception being Mr Batterham) were contractors provided by the United Mining Support Services Pty Ltd supplied under contract to The Newcastle Wallsend Coal Company Pty Limited at Gretley. United Mining Support Services Pty Limited sought and was given leave to appear. Although given leave, it chose not to appear.

Mr Ian Anderson is a Senior Inspector of the Department of Mineral Resources. On 9 December 1997, after the close of evidence, the Court gave Mr Anderson leave to appear in order to answer certain allegations made against him by The Newcastle Wallsend Coal Company Limited (T9630).

Counsel Assisting opened the public hearings of the Investigation on 3 March 1997. The evidence concluded on 24 November 1997. Written submissions were lodged by 9 December 1997, apart from those of Mr Anderson which were received on 6 January and 20 February 1998.

1.5 Persons Referred to in this Report

An identification of those who gave evidence, and others referred to in the body of this Report, may be of some assistance. The names are grouped according to the nature of their evidence.

Newcastle Wallsend Coal Company

1. Mine Managers

John Angelo Pala	(1992/93)
Jonathan Erik Humphries Romcke	(1993/94)
Richard Myles Porteous	(1994-96)

2. Surveyors

Kevin Price	(Group Surveyor)
Stewart Frederick Tilden	(1975 to August 1993)
Michael Murray (Deceased)	
Mark Robinson	(September 1995 to date)
Michael Paul Foley	(Surveying Assistant)
Alan Robert Blakeney	(Surveying Assistant Employed by Peter Easson Mining Survey Services)

3. Undermanagers

Michael Francis Alston	(Undermanager in Charge until 08.11.96)
Phillip John Pritchard	(Undermanager, and later Undermanager in Charge)
Michael John Coffey	
Terence Shacklady	(Casual)

Christopher Wayne Nicholls

4. *Mine Deputies*Edward Samuel **Batterham** (Deceased)Clive Arthur **Bernard**William Anthony Gould **Hegarty**Alistair Buchanan **McLean**David Wayne **Pugh**5. *Miners*Darren Wayne **Atkins**Stephen Donald **Bailey**Dallas **Bellamy**Bernard Francis **Brown**Stephen William **Brown** (Employed by UMSS)Barry Neville **Stewart**Leonard Robert **Collins**Frederick Jay **Franklin** (Employed by UMSS)David Clive **Hardman**John Michael **Hunter** (Deceased) (Employed by UMSS)Kevin Marshall **Mathews** (Local Check Inspector for CFMEU)John Robert **McCallum** (Employed by UMSS)Damon **Murray** (Deceased) (Employed by UMSS)Wayne Charles **Nichols**Ian Robert **Nunns**Barry Neville **Stewart**6. *Others*Frances Mary **Murray** (Casual Secretary)David Roy **Hern** (Maintenance Fitter)

Mark Kenneth Kaiser (Deceased)	(Mechanical Fitter)
	(Employed by UMSS)
Darryl Richards Martin	(Fitter)

Department of Mineral Resources

Dr Garry George Lowder	(Former Director General)
Alan William Coutts	(Director General)
Albert Francis Perkins	(Former Chief Inspector)
Bruce Robert McKensey	(Chief Inspector)
Ian Charles Anderson	(Senior Inspector Special Projects)
Terence Abbott	(Senior Inspector)
Antony Philip Rowland Morgan	(Former Senior Inspector)
Robert James Kininmonth	(Senior Inspector Retired)
Graham William Cowan	(District Inspector)
William Robert Flett	(Senior Inspector)
Franciscus Joseph Van Dijk	(District Inspector)
Anthony Arthur Ryan	(District Inspector)
Terence John Francis Brennan	(Regional Manager Northern Section)
Valentine Alexander Sobol	(Land Information Officer)
Dennis Raymond Hayes	(Land Information Officer)
Graham Martin Hawkes	(Manager Drafting)
Thomas John House	(Chief Drafting Officer)
John Cyril Dunnell	(Manager TAS Graphics Development Unit)
Stephen Sidney Kinsela	(Senior Titles Administrator)
Marjorie Lloyd Roberts	(Land Information Officer)
Geoffery Charles Simpson	(Administration Officer)
Francis Krstic	(Legal Officer)
John George Carroll	(Department Solicitor)

Construction Forestry Mining and Energy Union

Leslie Gordon Yates	(District Check Inspector)
John James Tapp	(District Check Inspector)

NSW Police Service

Inspector Gary Thomas **Smith**
 Inspector Allan Wayne **Thompson**
 Detective Senior Sergeant Rodney **Hunt**
 Senior Sergeant Robert Joseph **Cooney**
 Senior Constable Ian Maurice **Boughton**

Others

Darrel Adam	(Consultant) Inami Pty. Ltd.
Murray Stuart Bird	(Regional Manager Newcastle Station) Mines Rescue
Dennis William Browning	(Senior Computer Operator) Oceanic Coal Pty. Ltd
Robin Allen Knight	(Former Chief Surveyor) BHP
Ian Forbes MacLeod	(Manager Closed Operations) Coal & Allied
Paul Ian Maddocks	(Drilling Expert) Advanced Mining Technology Pty. Ltd.
Dale William McNamara	(Assistant Manager) Firefly International
Jan Conrad Muysken	(Partner) Coopers & Lybrand
John Hanes	Geologist
Robert Graham Hansen	Mine Subsidence Board
Professor Alan James Hargraves	Mining Engineer
Gary Hartley	Mine Subsidence Board

Professor Bruce Kenneth **Hebblewhite** Professor of Rock Mechanics
NSW University

Frank **Hungerford** (General Manager)
AMT Drilling Australia Ltd.

Janette **Kremers** (Administration Clerk) Firefly International

Jonathon **Smith** Mine Subsidence Board

Robin Ian **Turner** (Geologist) BHP

Barrington Macleay **Walker** (Chief Surveyor) R.W. Miller

John Barrington **Walker** (Mine Surveyor) R.W. Miller

Grahame Michael **Wallis** (Acting Principal Surveyor)
Land Titles Office

Terence Edward **Watson** (District Inspector)
NSW Ambulance

Walter Andrew **Williams** (Group Services Manager)
Oceanic Coal Pty. Ltd.

Marta Elizabeth **Vos** (Handwriting Expert)
Forensic Document Services

2 THE PLAN ISSUE

2.1 The Danger of Inrush

The hazard of inrush is well known. It arises from the penetration of a reservoir of water (or other material which flows) in the course of mining. Once penetrated the reservoir naturally empties into the mine. It may do so with great force especially if it has a high head of pressure, thereby engulfing everything in its path.

When an inrush occurs, therefore, fatalities are likely. The following table, taken from a paper published in 1987, identified, for example, some of the more significant inrushes in England and Scotland up until 1973¹:

**"Table 1. Selected Innundation Accidents
in England and Scotland**

Year	Mine	Fatalities
1815	Heaton Colliery, Northumberland, Eng.	90
1837	Workington Colliery, W. Cumberland, Eng.	27
1895	Audley Colliery, N. Staffordshire, Eng.	77
1901	Donibristle, Scot.	8
1908	Rochburn, Scot.	3
1918	Stanrigg-Arbuckle, Lanarkshire, Scot.	19
1923	Redding Colliery, Falkirk, Stirlingshire, Scot.	40
1925	Montagu Colliery, Northumberland, Eng.	38
1950	Knocksninnoch Colliery, Ayrshire, Scot.	13
1973	Lofthouse Colliery, Northumberland, Eng.	7

Source: "*Great Pitt Disasters*" H. and B. Duckham, David and Charles Publ. North Pumfret, Vt. 1973, 227 pp."

¹ Ex.76.04 "*Water - a Hazard and a Nuisance*"

Once a mine has been abandoned it is likely that over time water will accumulate in the void. Abandoned mines, therefore, are recognised as a potential source of danger from inrush. When mining is conducted in the vicinity they cannot be ignored. Steps must be taken either to drain the water, or maintain a barrier of unworked coal around the abandoned mine, sufficient to prevent the escape of that water. In either case, it is fundamental that the colliery form an appreciation of the location and extent of the abandoned mine.

As an underground coal mine full of water, or suspected of being full of water, is incapable of being inspected and surveyed, and its extent determined by that means, how, then, is a colliery to know precisely where it is?

It is possible to reconstruct the history of an abandoned mine (such as the Young Wallsend Colliery, in the case of Gretley) by reference to contemporaneous documents, including plans. The documentation, of course, may or may not be complete. The picture created by such documentation, therefore, may or may not be reliable.

Plainly, however, research must be undertaken, and a judgment formed as to the reliability of the material uncovered. The strategy of avoiding inrush is likely to be different, depending upon the level of confidence which the mine management has in the accuracy and completeness of the material it gathers relating to the abandoned mine².

2.2 The Broad Nature of the Error

As indicated at the outset, the plan which the Gretley Colliery was using at the time of the inrush on 14 November 1996 was wrong. This section is concerned to identify the nature of the error, and describe how it came about.

The error can be simply described. The Department of Mineral Resources is the custodian of plans and archival material in respect of coal mines. The records relate to mines which are still operating (such as the Gretley Colliery). They also relate to abandoned mines, some of which are very old. The Young Wallsend Colliery, for instance, was mined between approximately 1890 and 1912.

One of the plans held by the Department of Mineral Resources, in respect of the Young Wallsend Colliery, was a copy of the mine plan. The plan carries the following inscription:

“Copied from the colliery plan
at the Coalfield Office
by Herbert Winchester
21st March 1892”

The plan has obviously been updated since 21 March 1892. The following dates appear on the plan against certain workings which are recorded:

5 December 1910
18 August 1911
4 April 1912

The plan itself shows two shafts. Alongside one shaft there appears the words:

"Top Seam 460 feet
Worked"

On the other side of the same shaft, the following words appear:

"Bottom Seam
521 feet"³

The plan depicts areas of coal which have apparently been extracted. The lines on the plan are in two colours - red and black.⁴ The areas extracted depicted in red are different from those in black. The workings in one colour appear to have been superimposed upon workings depicted in the other colour (see Figure 1, being a copy of the relevant portion of Exhibit 13.63, at the end of this report). The plan in appearance is plainly very old. It presumably came into existence in March 1892. It is very large, dilapidated and had been patched and repaired during its long life. It has been catalogued at various times according to different reference numbers which appear on the back. At the relevant time (1996) it was marked Rt 523, Sheet 1.

The Department also has, amongst its records relating to the Young Wallsend Colliery, two other plans. They were plainly of a different era, and much more modern.⁵ They are each copies, not originals. They are reproduced on a plastic sepia material. One plan is inscribed with the words:

³ Ex.13.63

⁴ A close examination of the plan reveals that very small areas have been drawn with a blue (rather than a black) pen

⁵ J. C. Muysken T3318
(cf. Company's submissions, MFI 91RT 523 1 p105, para. 6.1.11)

"Young Wallsend Coal workings
Top Seam" ⁶

The other plan carries the following inscription:

"Young Wallsend Coal workings
Bottom Seam" ⁷

Neither plan is dated, nor identifies the party responsible for its creation.
At the foot of each plan the following words appear:

"TRACED FROM RECORD TRACING 21st March 1892"

The plans separate the two different colours on the old plan [Ex.13.63]. The area depicted as the top seam corresponds with the area in black (an oval shape) on the old plan. The bottom seam corresponds with the area depicted in red (in the shape of two arrowheads linked by roads) (see Figures 2 and 3, over).

It appears, therefore, that whoever produced the top and bottom seam sheets made an examination of the old plan [Ex.13.63], and made two assumptions upon the basis of which Sheets 2 & 3 were then drawn:

- First, it was assumed that the two colours, red and black, indicated workings in two separate seams.

⁶ Ex.13.22 (Rt 523, Sheet 3)

⁷ Ex.13.22 (Rt 523, Sheet 2)

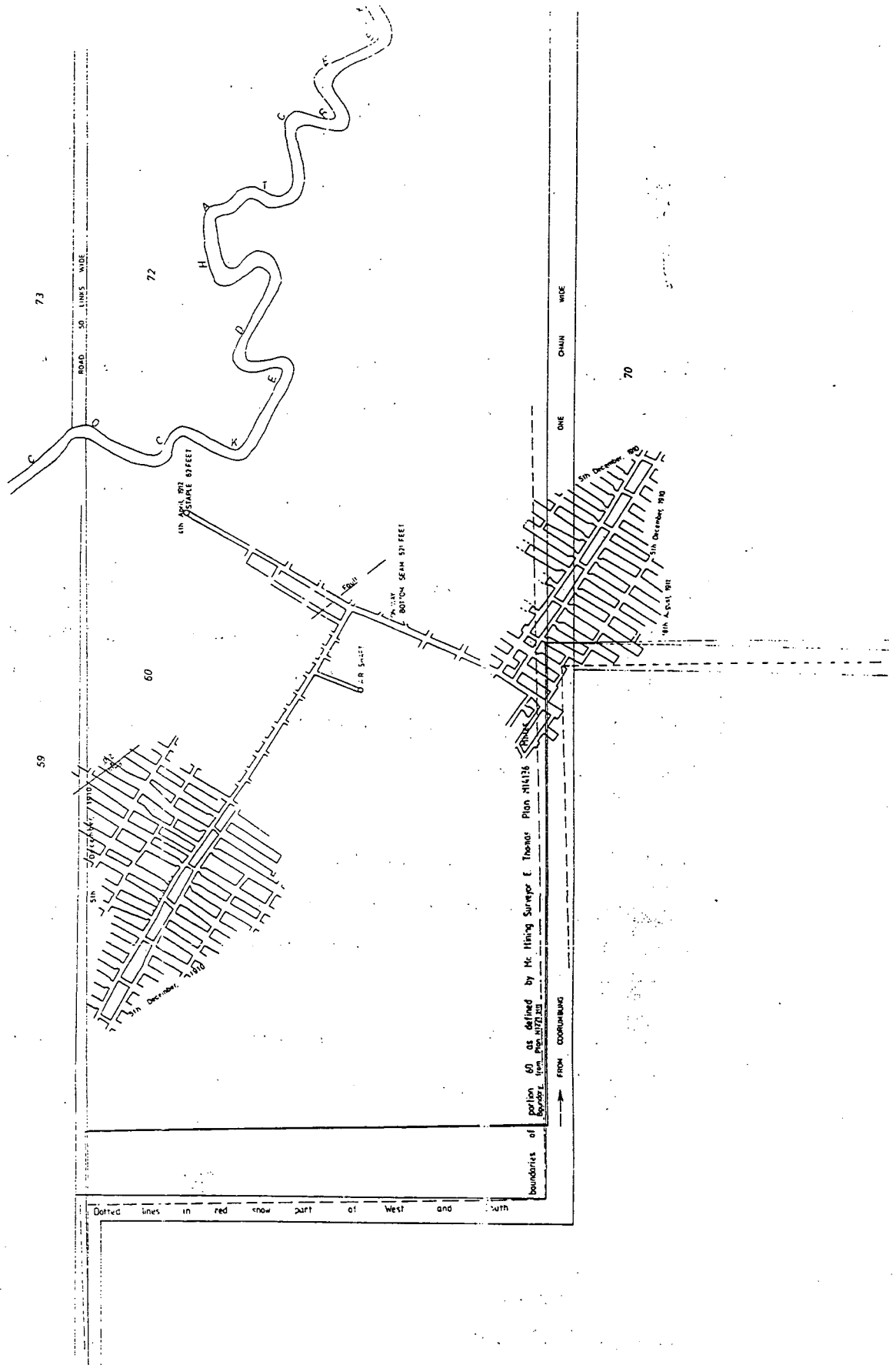


FIGURE 2: RT 523 SHEET 2

YOUNG WALLSEND COAL WORKINGS

TOP SEAM

Parish TERALBA County NORTHUMBERLAND

SCALE 1: 1584

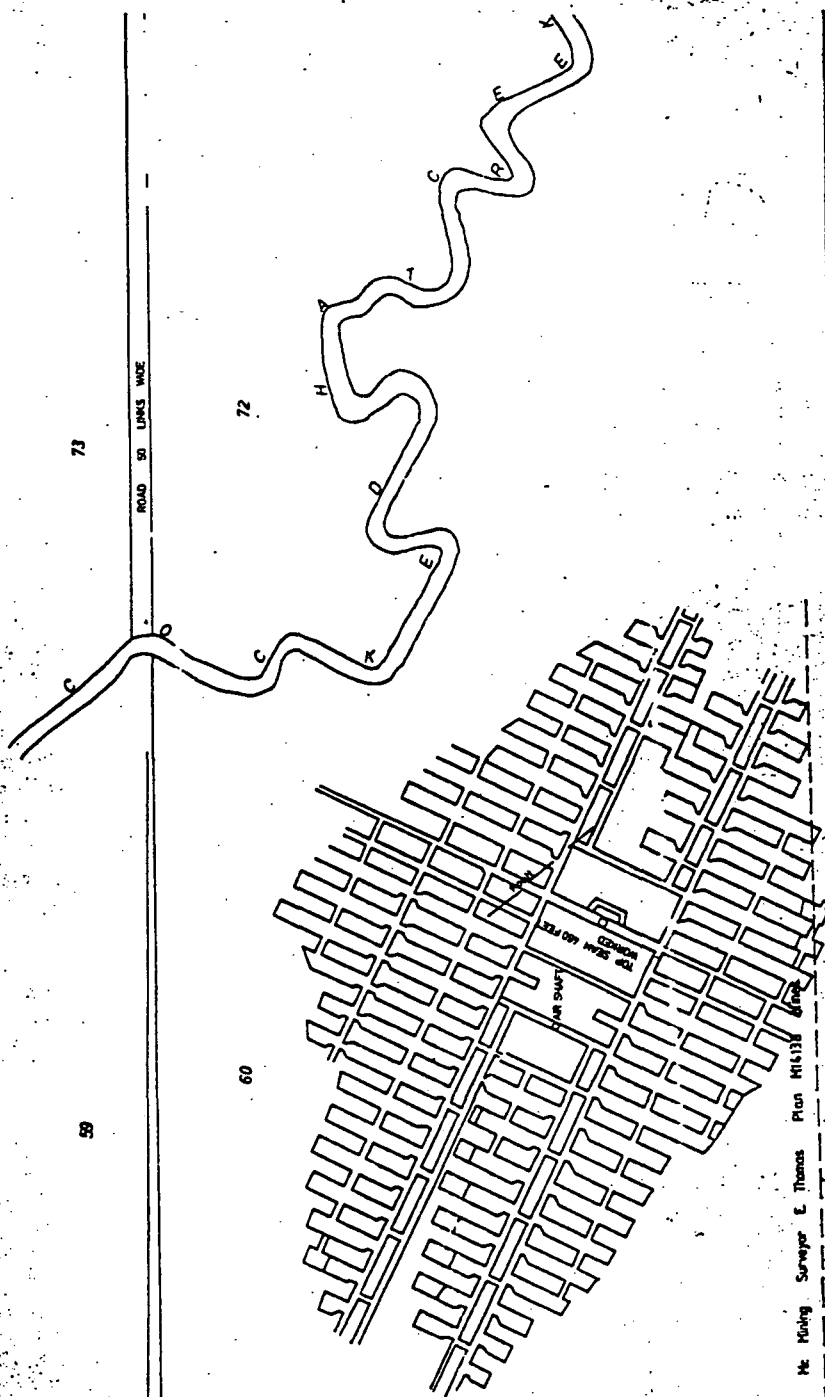


FIGURE 3: RT 523 SHEET 3

- Secondly, it was assumed that the area depicted in black (the oval shape) was the top seam (known as the Young Wallsend Seam at a depth of 460ft), and the area in red was the Bottom Seam (known as the Borehole Seam at a depth of 521ft).

Both assumptions were wrong. A drilling programme undertaken since the tragedy suggests that all workings were in one seam⁸. But, there is no question that the workings depicted in red were workings in the top seam, whereas they were shown on sheet 2 (RT 523) as being in the bottom seam.

The red workings extended for more than 100m beyond the black in both an easterly and westerly direction. The Gretley Colliery was working the upper seam. Hence, the colliery (whose planning was based upon the erroneous top seam sheet) was always more than 100m closer to the eastern edge of the abandoned colliery than was thought. On 14 November 1996, the new workings of the Gretley Colliery holed into the abandoned Young Wallsend Colliery, thereby causing the inrush.

2.3 The Issues to be Examined

An examination of the way in which the error in plan came about requires an analysis of the following:

- First, as a result of the Court's investigation, a great deal is now known about the Young Wallsend Colliery. Material has come to light which was not known either to the Gretley

⁸

Colliery or the Department of Mineral Resources. It may be helpful to sketch the mine's history as it is now known. It will be plain from that history that anyone cognisant of it could not have made, or would not have readily made, either of the erroneous assumptions to which reference has been made. That is not to condemn, necessarily, either the Department of Mineral Resources, or the Gretley Colliery because they were not aware of this material. Whether the material was readily discoverable, and whether due diligence required that it be discovered, will be separately examined in a later chapter.

- Secondly, who was responsible for the creation of the top and bottom seam sheets? Who was it that made the erroneous assumption that the workings were in two seams, and that the black workings on the old plan represented the extent of coal extracted from the top seam (ie Young Wallsend Seam)?

These issues will be examined in turn.

2.4 Sources of Information

Before describing the history of the Young Wallsend Colliery one should first identify the sources of information which have been used. It is important to do so for a number of reasons. The information available varies in quality. Some sources are manifestly more reliable than others. One's confidence in the picture which emerges will no doubt depend upon the quality of the information available, taken as a whole.

Further, an identification of the sources of information will assist the Court in reaching a judgment as to whether a prudent mine manager or surveyor could reasonably have been expected to have been aware of the availability of such information. If they should have been so aware, then it may not be unreasonable to expect that they should have uncovered such information, as part of the process of determining precisely where the Young Wallsend Colliery was, and that for the purpose of avoiding inrush.

The first source is the annual reports of the Department of Mines, (as it was then known). Under the statute in operation when the Young Wallsend Colliery began its life, the Coal Mines Regulation Act, 1876 (39 Vic. No. 31), provision was made for the appointment of inspectors. The duties of an inspector were defined in these terms:

- "4. It shall be the duty of examiner or inspector to ascertain the state and condition of all mines and to obtain plans of all workings thereof and reports of all accidents therein and other matters of importance connected therewith and especially of every breach of this Act..."

Moreover, an inspector was obliged twice yearly to make reports to the Minister. The obligation was expressed in these terms (s26):

- "26. Every inspector shall during the months of January and July respectively in every year make a report in writing of his proceedings during the preceding half-year and transmit the same to the examiner who shall thereupon submit them with a general report to the Minister"

The 1896 Act (60 Vic. No. 12)(replacing the 1876 Act) made provision for the incorporation of reports by inspectors into the annual report of the Department, which was required to be laid before both houses of

Parliament (s21). A mining company was also obliged to make an annual return. The 1876 Act made the following provision (s6):

- "6. On or before the first day of April in every year the owner agent or manager of every mine shall send to the Minister a correct return for the preceding twelve months ending on the thirty-first day of December previous specifying the quantity of coal or other mineral wrought in such mine and the number of persons ordinarily employed in or about such mine below ground and above ground respectively. The return shall be in the form contained in the Schedule hereto..."

Provision was made for the publication of such return by the Minister. It was an offence for a company not to submit a return, or to knowingly submit a false return (s6). A similar obligation was imposed in later statutes (for instance, s27(1) of the 1896 Act).

The annual reports of the Department are still available. They provide sparse, but important information relating to old mines. They are a source well-known to industry⁹.

Secondly, perhaps the most important aid to a mine manager or surveyor in forming a judgment as to the location and extent of an abandoned mine are the plans held by the Department of Mineral Resources. Successive statutes regulating the coal industry have imposed obligations upon both the Department, and upon collieries, in respect of the creation and preservation of accurate mine plans. Indeed, one of the duties of an inspector under the 1876 statute (and subsequent legislation) was to "obtain plans of all workings" of all mines within his district (s4, 1876 Act).

⁹

Company's submission MFI 91RT 523 2; p.283, para. 14.3.5

If the coal extracted was owned by the Crown, royalties were payable. The mine plan was one of the means of determining how much coal had been extracted¹⁰.

Under the 1876 statute, the obligation upon the owner (or manager) in respect of the mine plan was expressed in these terms (39 Vic. No.31 s5):

"5. On the occasion of any examination or inspection of a mine the owner or agent shall if required so to do produce to the examiner or inspector...an accurate plan of the workings thereof..."

The section further provided as follows:

"And every such plan as aforesaid shall show the workings of the mine up to within six months of the time of the inspection and the owner or agent shall if required by such examiner inspector or other authorised person cause to be marked on such plan the progress of the workings of the mine up to the time of such inspection and shall also permit the examiner or inspector to take a copy or tracing thereof."

Provision was also made for the preservation of such plans. A person within the Department was appointed the keeper of mining records. The Act, also in Section 5, required that every such copy or tracing be deposited with the keeper of mining records.

The importance of such plans in the prevention of inrushes was no doubt recognised. The New South Wales legislation was closely modelled, as one might expect, upon equivalent English legislation¹¹. A Royal Commission in the United Kingdom appointed in 1879, in its final report in

¹⁰ J. Dunnell Ex.35.01, p.1(7); Ex.20.01, pp. 16 & 17

¹¹ Company's submission, MFI 91RT 523 1, p.49ff

1886, made the following comment (reproduced in the report of the *Water Dangers Committee* entitled '*The Prevention of Dangers in Mines from Accumulations of Water or other Liquid Matter*', appendix 1, p19)(MFI 91, Vol 3):

"Irruptions of water which often threaten the safety of many persons at once may be caused by one or other of the following conditions:-

By workings inadvertently advanced too near to the bottom of the sea or some other body of water...or by accumulations of water, sometimes under great hydrostatic pressure, which have occupied the cavities of old workings...The comparatively new regulations as to the keeping up and preservation of mine plans will doubtless in course of time tend greatly to decrease the liability to those accidents"

As a result of the same Royal Commission the United Kingdom changed its legislation in 1887 to oblige owners of coal mines to ensure that the mine plan was accurate to within three months of work undertaken (in lieu of six months previously). The 1896 Act in the Colony of New South Wales introduced a similar provision (60 Vic. No.12, s28(1)). Current legislation in this state (*Coal Mines Regulation (Survey & Plan) Regulation 1984*) makes the same provision. Clause 13(3)(a) of that Regulation is in these terms:

"13(3) The mine working plan shall show -

- (a) all current workings of the mine in the seam or seams of the mine up to a date not more than three months before the making of the plan. "

The 1896 Act (60 Vic. No.12) followed the United Kingdom in another respect. Under the 1876 Act (39 Vic No. 31) the owner of a mine was obliged to notify the examiner or inspector in circumstances where the

mine was either abandoned or discontinued (s7). Following the United Kingdom, the new Act (60 Vic No.12, 1896) went further. It introduced the concept of a plan of abandonment. The plan of abandonment would ensure that the mine plan was brought up to date so that future generations would have the means of determining the full extent of work undertaken before the mine closed. The obligation was expressed in these terms (1896 60 Vic. No.12, s32(1)):

“32(1) Where any mine or seam is abandoned, the owner of the mine at the time of its abandonment shall, within 3 months after the abandonment, send to the Minister an accurate plan showing the boundaries, the whole of the workings of the mine or seam up to the time of abandonment, and the position of the workings with regard to the surface, and the general direction and rate of dip of the strata, ...

(2) The plan and section shall be preserved under the care of the Minister...”

The owner was also obliged within three months of abandonment to send to the inspector of the district a correct return of particulars required in the annual return (s32(3)).

These provisions were included in the replacement legislation, the Coal Mine Regulation Act 1902 (s32). That Act was probably in force when the Young Wallsend Colliery ceased operating (late 1911 or early 1912). The 1902 Act was itself replaced by the Coal Mine Regulation Act 1912, (which was assented to on 26 November 1912). The obligations imposed upon the owner by that Act were in similar terms (s39). Hence, whether the 1902 Act (s32), or the 1912 Act (s39) applied at the time of the Young Wallsend Colliery ceased operations, there was an obligation upon the owner to provide a plan of abandonment. The Department of Mineral Resources, as

the successor to the Department of Mines, is the custodian of a number of old plans, preserved as a result of these obligations. Such plans, and especially abandonment plans, are obviously an important source of information in respect of an old colliery, such as the Young Wallsend Colliery.

A third source is information about the life of a mine in contemporaneous newspaper reports. The coal industry was fundamental to the well-being of Newcastle. The establishment of a mine, its performance, and its ultimate closure were matters which attracted comment. That comment is capable of providing insight. The reliability of the comment obviously requires critical evaluation.

Fourthly, there are books and pamphlets which record the history of the Newcastle coal fields, and particular mines. Some are well known. Others are more obscure. Some are learned textbooks by authors with established reputations. Others are open to doubt. They are, however, housed in various libraries, and are not difficult to find. Mr Yates (of the CMFEU) was the check inspector for the Gretley Colliery. He gave the following evidence concerning research undertaken by him after the inrush:

- Q. On Thursday the 28th you went to Newcastle Library at 9 o'clock in the morning.
- A. Yes.
- Q. And that was for the purpose ... to look - - - ?
- A. To try and find any old material that had some relevance to the Young Wallsend Colliery.
- Q. Where in particular in the library did you go?
- A. To the archive area.
- Q. That is open to the public, is it?
- A. Yes, it is.
- Q. What did you look at in the archive area on that morning?
- A. Old booklets in relation to Young Wallsend and - I

can't remember the exact name of the books - Young Wallsend and its Environs. I believe there was another book put out by a local school, I looked at that and any other information that the library assistant could help me with.¹²

Mr Yates added:

- Q. Were you taken at some stage by the library assistant to a particular part of the library where material of this sort was stored together, is that right?
- A. No, I was not.
- Q. Approximately how long did it take the library assistant to assemble the documents and bring them to you?
- A. About five minutes, if that.

Finally, at a time when the Investigation was well under way (September 1997), the Department of Mineral Resources recovered from State Archives the file which had been maintained by its inspectors during the period 1908 to 1928¹³. What may have been obscure, based upon material collected from within the first four sources, was suddenly made clear.

2.5 History of the Young Wallsend Colliery

The copy mine plan of the Young Wallsend Colliery which was held by the Department of Mineral Resources [Ex.13.63] has already been described, and the fact that it showed workings in two colours, red and black. The Court has a number of old mine plans before it as exhibits. They relate to collieries developed at much the same time as the Young Wallsend Colliery. A number show workings in different seams on the one plan, using

¹² L. G. Yates T1530

¹³ Ex.17.17

colours to differentiate between seams¹⁴. Moreover, a pencilled comment written on the mine plan for the Young Wallsend Colliery, [Ex.13.63] attributed to the Chief Inspector of the Department in 1963, plainly suggested that he thought that the two colours represented different seams

Mr Robin Knight, a highly qualified surveyor, and a former principal surveyor for BHP Steel, gave the following evidence after a detailed examination of the mine plan:

- Q. ...is that the impression that you get from the plan namely, that there are two seams that have been worked?
- A. Yes, that's right, there has been a suggestion put to me in the last few weeks that they could in fact be one and the same seam, but I feel you would have to be fairly imaginative to think that the red and the black were in fact the same seam.¹⁵

It was not unreasonable, therefore, to infer that the two colours represented workings in two seams.

What was unusual, and disturbing, about the Young Wallsend Colliery mine plan [Ex.13.63], was that there was no legend. There was nothing on the plan to indicate what seam was being depicted in black (whether the Young Wallsend or Borehole Seam), and what seam was being depicted in red. Each of the other record tracings before the Court, where multiple colours had been used, identify each seam by reference to a particular colour [Exhibits 13.47, 13.48].

Assuming that the surveyor or mine manager inferred from an examination

¹⁴ Ex.13.47 and 13.48

¹⁵ R. A. Knight T6806

of the old plan that there were two seams, how might he take the next step, and determine which colour was the top seam, and which the bottom? One means of attempting to solve the puzzle is by undertaking historical research into the Young Wallsend Colliery. Whether due diligence required such a step will be determined later. For the moment, an examination will be made as to whether there were clues within the historical material as to which seam or seams were developed by the Young Wallsend Colliery, and in what sequence. The sequence might be important because the red workings (following a convention which is still used today) are accompanied by dates, (1910 to 1912). There are no dates shown on the workings shown in black. If one were able to say, based upon historical research, which seam was being mined between 1910 and 1912, one may be in a position to infer that the red workings related (or may relate) to a particular seam.

The land which included the Young Wallsend Colliery was owned by Mr John Charles Bonarius, an auctioneer from Newcastle. Mr Bonarius issued a prospectus for the Young Wallsend Coal Mining Company Limited in 1886. The prospectus was published in *The Newcastle Morning Herald* and *The Miners' Advocate* (as the newspaper was then known) on 6 July 1886. It opened with these words:

"This Company is being formed to work 744 acres of coal land at Young Wallsend, containing two seams of marketable coal. The Government diamond drill, No. 4, under the management of engineer, Mr Alexander Roy, started work in February last, upon the land at Young Wallsend, and at a depth of 392 feet from the surface came upon a splendid seam of coal, 10 feet thick, showing 8 feet of good marketable coal, and at a depth of 464 feet came upon the celebrated Wallsend seam, showing 6 feet 2 inches of good

coal"¹⁶

The passage is confusing. The depths of the two seams (392 and 464 feet) do not correspond with the depths of the Young Wallsend seam (460 feet) and the Borehole seam (521 feet). The confusion is compounded by describing the lower seam as the 'celebrated Wallsend Seam'. However, it does appear that there was an intention to exploit both seams. That impression is reinforced by a further passage, later in the prospectus, which was in these terms¹⁷:

"Having carefully examined the core from each seam of coal, I have no hesitation in stating that the quality is equal to any worked in the district, more especially the lower, or Wallsend seam of coal."

The Department's annual report for 1887 contained the following entry in respect of the newly established Young Wallsend Colliery:

"In December last a shaft 10 feet in diameter was in course of sinking to the Borehole coal-seam, and a pair of coupled winding engines, boiler, &c had been erected, and material was being drawn from the shaft thereby." ¹⁸

The report then included a geological section of a coal seam. It was identified as the Borehole coal-seam, although it appeared to have been taken from an adjacent colliery, the West Wallsend Colliery. Nonetheless, the impression remained that the Company intended to extract coal from the Borehole seam (i.e. the lower seam).

¹⁶ Ex.31.07

¹⁷ ibid

¹⁸ Ex.31.04 p.124

The annual report for 1888 further reinforced that impression. It again included a diagram, identified as a geological section from the Borehole seam, this time, taken from the Young Wallsend Colliery. The report also included the following description:

"Sections of the Borehole Coal Seam, worked at West Wallsend and Young Wallsend, and proved by borings at Brooks' Bore, Cockle Creek and Northumberland Co's Bore, at Fassifern. Taken by John Mackenzie, F.G.S., Examiner of Coal-fields, and John Dixon, Inspector of Collieries, February 1889." ¹⁹

Useful information concerning the history of the Young Wallsend Colliery is to be found in a publication, *Youngy Then & Now* by Sue Sokolov, published in 1991 to mark the centenary of the Edgeworth Public School²⁰. The author makes the following comment based upon an article in the Newcastle Morning Herald on 11 August 1888:

"By November the main shaft reached the Borehole Seam at a depth of 530 feet. At the bottom of the shaft headings (tunnels) seven feet six inches high, five yards wide and thirty-three yards long were driven north and south. Twenty yards from the shaft, east and west headings were driven to open out the mine. The winding engines, cages and platforms were all ready for work" ²¹

The Department's annual report for 1889 contained the following entry:

"Young Wallsend Colliery - The under ground work in connection with this colliery has been suspended for some months past, for the erection of the permanent machinery,

¹⁹ Ex.31.04 p.155

²⁰ Ex.31.02

²¹ Ex.31.02 p.20

pit head frame, screens, &c. But as the whole of the plant is now nearly completed, it is expected that operations in the mine will very shortly be resumed. The provisions of the Coal Mines Regulation Act are complied with in every particular".²²

The colliery was officially opened in the presence of two hundred visitors on 21 March 1890²³. A book published in the same year by George Kingswell, *The Coal Mines of Newcastle, N. S. W., Their Rise and Progress*, said this:

"The work of opening out the Young Wallsend Colliery has been accomplished with a dispatch which reflects considerable credit on the directors and officials. In December, 1887, the work of sinking the mine was commenced, and the shaft has been put down to the Borehole or Wallsend seam a depth of 530ft. At the bottom, headings are driven north and south, with a height of 7ft 6in, and having a width of 5 yards. These have been opened thirty-three yards each side of the pit, and timbered every 4ft. At a distance of twenty yards from the shaft, main headings have been driven 20ft each way, east and west, to open out the mine. The pit at present is ready to start work with thirty-six miners, and as it opens out more will of course be required".²⁴

The author continued as follows: (p.56)

"There are two seams in the mine, **and the bottom one, which is to be worked**, is 7ft in thickness. An analysis of the coal gives - Moisture, 2.02 per cent; volatile hydrocarbons, 35.05; fixed carbon, 57.00; ash, 5.93; and for coke, 62.93; specific gravity, 1.32; and sulphur, .578. Above this is another seam 10ft deep with 7ft 6in of workable coal...quality

²² Ex.31.04 p.192

²³ Ex.21.02 p.23

²⁴ Ex.31.07 Item 49 p.56

of the coal is stated to be excellent." (emphasis added)

The Company's annual return to the Department for 1891 recorded 30 men employed above ground, and 120 men underground²⁵. However, this level of activity was not to last. The annual report of the Department in 1892 included the following statistics in respect of the colliery:

*"Young Wallsend Colliery - About 25 men, &c, are employed in this mine, and are supplied with about 30,000 cubic feet of air per minute. The provisions of the Act are complied with."*²⁶

The Department's report relating to the latter part of the same year (1892) included the following:

"Young Wallsend Colliery - Work at this mine is at present temporarily suspended" ²⁷

The publication, *Youngy Then and Now*, elaborated as follows:

"The Newcastle Morning Herald and Miners Advocate reported, on 17 February 1893, that the Young Wallsend Coal Company was to be voluntarily wound up by the shareholders". ²⁸

Pausing there, a person conducting research into the Young Wallsend Colliery would be little the wiser as to whether, in the period before it ceased operations in 1892, it extracted coal from both seams or from one only, and if only one, whether the upper seam or the lower. The

²⁵ Ex.31.04 p.29

²⁶ Ex.31.04 p.97

²⁷ Ex.31.04 p.101

²⁸ Ex.31.02 p.32

impression created is that both seams had been developed.

The mine then remained idle (though not formally abandoned) until 1907, filling with water because it was no longer being pumped dry.

2.6 The History of the Colliery after its Re-opening

The 1907 Annual Report of the Department included the following:

"Young Wallsend Colliery. - On 2 November, Mr .T. O'Neill, manager of the Australian Joint Stock Bank, Limited notified that they were about to unwater the Young Wallsend Colliery, and that Mr. J. Jefferies was the contractor in charge of the operations." ²⁹

There is an elaboration in the publication *Youngy Then & Now*, based upon a newspaper report:

"The Newcastle Morning Herald of 2 December 1907 made the exciting announcement that the Young Wallsend Colliery was being unwatered and work could begin again shortly. The work was being done on behalf of the Australian Joint Stock Bank who still held the mortgage on the mine from Bonarius' time." ³⁰

On 27 January 1908 there was a further report in the Newcastle Morning Herald:

"Rapid progress has been made with the unwatering of Young Wallsend Colliery. Many years ago the Borehole seam lying at a depth of 520 feet, and the Young Wallsend seam at a depth of 445 feet, were opened out. **The area of workings in the former seam is comparatively small, and in the Young Wallsend seam the area opened out is about 20 acres**, the thickness being 7 feet. The whole of the workings were filled with water, which stood at a depth of 28 feet from the top of the shaft." ³¹(emphasis added)

²⁹ Ex.31.04 1907 p.149

³⁰ Ex.31.02 p.36

³¹ Ex.83.05

This passage furnishes an important clue. It suggests that at the time of the re-opening (1908) the workings were largely confined to the upper (Young Wallsend Seam). Mr MacLeod, a former Mine Manager, gave the following evidence in relation to the newspaper article:

- A. I would have measured the black workings to see what area they were, and if the suggestion was that they were about 20 acres, then it would leave me to the conclusion that that plan of the black workings was the Young Wallsend workings. The red workings were a continuation of the Young Wallsend seam workings after 1908 when it restarted.³²

Mr MacLeod made a calculation of the approximate area of the black workings as being near enough to 22 acres (T7829).

The company's submission suggested that Mr MacLeod had gone too far. It said this:

"We submit that the newspaper article confirms that the black workings were in the Young Wallsend Seam, with some workings in the Borehole Seam as at that date. The article states that dewatering had been completed to the floor of the Young Wallsend Seam on the previous day and refers to limited exploration. There is nothing in the article that is inconsistent with continued dewatering to the Borehole Seam."³³

The Court believes that the company is right. The article is capable of identifying the black workings. It does not exclude, however, the possibility that after the mine re-opened, it developed the lower seam, in which case the red workings would be within the Borehole Seam.

³² I. F. MacLeod T7514/15

³³ MFI 91 Vol. 1 p.233

However, Mr MacLeod supported his inference with certain other material from the Department's Annual Reports. The mining Company, as part of its annual return, was obliged to supply the depth of the shaft in feet (Coal Mine Regulation Act 1902: S27(1)) and Fourth Schedule). This data was then reproduced in a table, combining information from a number of mines. The 1909 report (repeated in 1910) identified the depth of the shaft for the Young Wallsend Colliery as 440 feet [Ex.83.08]. Mr MacLeod gave the following evidence in relation to that information:

- Q. So from that you would draw what inference?
A. From that I would draw the inference that they were winding from the Young Wallsend seam.³⁴

The depth of the top seam on the mine plan [Ex.13.63] was stated to be 460 feet (in contrast to 440 feet in the Annual Report). Mr MacLeod's attention was drawn to this difference. He said this:

- Q. Would that discrepancy worry you?
A. It wouldn't - it wouldn't worry me very much because the depths of shafts, I think particularly in ... older times, there seems - seems to be no firm doctrine, if you like, of determining ... what did you mean by the depth of the shaft. Did you mean the depth of the shaft to the top of the seam, did you mean the depth of the shaft to the bottom of the seam, did you mean the depth of the shaft to the bottom of the drainage sump, so that there is I suppose could be up to three different ways of describing the depth of the shaft. So, what that's saying is that maybe it was to the top of the seam, and maybe it was ... to the top of the working height of the seam, it may have been ... to the bottom of the seam, it may have been to the bottom of the sump.³⁵

³⁴ I. F. MacLeod T7515

³⁵ I. F. MacLeod T7828/29

It will be noticed, incidentally, that the newspaper report of 27 January 1908 [Ex.83.05] referred to the Young Wallsend seam as being at 445 feet.

Why, if the red workings were an extension of the black, did the mine plan show them as overlapping, rather than one simply adding to the other? Mr MacLeod suggested the following explanation:

- Q. What then would you make of the differences between the red and the black on the original record tracing ..?
- A. The red workings are a continuance of the workings at a different azimuth.
- Q. How does that come about?
- A. There has been obviously a difference in surveying between the original workings in the black to the time that the red workings were - started to be plotted in that particular time.³⁶

The company's submission suggested that the reference to 440 feet may be a mistaken reference to 540 feet, which, in turn, may be a reference to the Borehole seam (521 feet), allowing for a sump [MFI 91RT 523 1 p.233]. The submission is unpersuasive. The Colliery was obliged to provide accurate information to the Department (Coal Mine Regulation Act 1902, Fourth Schedule). The same information in relation to the depth of shaft (440 feet) is repeated in both the 1909, and the 1910 reports.

Having said that, it must be acknowledged that the clue provided by the annual reports is obscure. One would hesitate to criticise someone undertaking research for having missed it.

The Department's Annual Report for 1908 described the re-opening of the

mine, without specifying which seam was being worked [Ex.31.04, 1908 p.158]. In 1909 the mining lease was taken over by A Kethel & Co. Ltd. of Sydney [Ex.31.04, 1909 p.169]. There was, for a time, a return to full production. Inspector Hutton's annual report of 1909 recorded 216 persons as having been employed underground, and 56 above ground, a total of 272. There were 9 inspections by the Department in that year [Ex.31.04, 1909, p.156].

The file recovered from State Archives [Ex.17.17] contains contemporaneous memoranda which strongly suggest that the top seam (the Young Wallsend seam) was being worked. In 1909 an issue arose as to whether the Young Wallsend Colliery had encroached upon a road between certain portions of land, and whether the road was required as a barrier between the Young Wallsend Colliery and an adjacent colliery. The acting Chief Inspector of Coal Mines responded on 1 July 1909 in these terms:

"The Young Wallsend Colliery workings in the upper seam known as "Young Wallsend" are under this road and so far as I can see there is no objection to this coal being worked. It adjoins the west Wallsend Colliery holding whose workings are in the underlying "Borehole" Seam. I am therefore of opinion that the coal of the upper seam under the road need not be left as a barrier." ³⁷

The area identified as the subject of the encroachment (being a road between portion 60 and portion 70) can be identified from the mine plan [Ex.13.63]. It forms part of the "red workings". It follows from the terms of the memorandum that the red workings are in the upper seam. Since the black workings are also known to be in the upper seam, (supra p38) it

follows that both the red and the black are in the same seam (the upper seam).

On 16 November 1909 a letter in the archive file from J. G. Hutton, Inspector of Collieries to the Chief Inspector of Coal Mines stated as follows:

"Referring to the Record tracing of Young Wallsend Colliery, I omitted to mention this afternoon, in my note from the Coal Fields Office, that, the skeleton tracing which was taken from the new mine plan shows the position of the workings up to date. I did not see the manager, Mr Rostron till nearly 1 P.M. when we compared the Record Tracing and the Mine Plan. I saw at a glance that it would be useless to try to extend the workings on the tracing, and as there was not any tracing cloth in the Colliery office Mr Rostron kindly allowed me to take the mine plan to the Coal Fields Office. It seemed to me that the best that could be done was to make a tracing of the true position of the shafts, main wheeling roads, and working places. The roads and boundaries on the Record tracing agree with those on Mr Mining Surveyor Thomas' Helio, and the Mine Plan. By placing the skeleton tracing on the Record Tracing and bringing the roads and boundaries to agree, it will be seen how far the workings, shown on the Record tracing, are out of their true position." ³⁸

This letter was capable of explaining how the black and red workings came to be on the same plan, and drawn in a way which showed some overlap. Mr Robinson, the statutory mine surveyor at Gretley at the time of the inrush, asked about Exhibit 17.17A, said:

- Q. And of course you have gone through exhibit 17.17A and analysed that, have you not?
- A. I spent a couple of hours late one evening.
- Q. And without going to all of the details is there an

explanation you believe that can be elicited from the various documents in that file as to what really happened?

A. It's quite clear from that file that information as to what sheet 1 of the Record Tracing is and how it came about.

Q. Yes, so that file had it been studied would have answered in your view that question, is that right?

A. Yes, I believe so.

Q. Would you just tell his Honour in a summary form what it is about 17.17A that you believe sets out the position?

A. There was a survey by Ed Thomas into the mine, Young Wallsend Colliery, and the Manager of the Mine, I think a Mr Rostron, requested that Survey from the Department of Mines at the time so that he could correct his plans. Then - and it is quite clear from the plans in the file around that time which refers to, I think, points A, B, C, D which referenced points on the red workings on sheet 1 where seam sections have been taken and those seam sections are shown in the file and they are clearly the Young Wallsend Seam. So you can tell straight away that the red workings are the Young Wallsend Seam and then I think it is page 183 we see where the Inspector, I think, Hutton goes to the Mine to take a Tracing of the new mine plan. So it appears that the Mine Manager has created a new mine plan, and when the Inspector overlays this Tracing here which at this stage I believe just has the black workings on it and that is exhibit 13.63 I think ---

Q. Yes? ---

A. He overlays that onto the new mine plan. At this stage, this is about 1909 I think, at this stage that exhibit 13.63 has the black oval shape which was created when the mine was worked first I believe. Then he sees - he says immediately that it would be pointless to try and extend the workings as shown because they're inaccurate and then what he does is he says I think the best thing to do is to do a Tracing of the new mine plan and he takes ---

Q. Is that where he refers to a skeleton tracing?

A. Yes. So he does that Tracing but he does it onto this plan here and I think that's where the - that's what happens and it's clear from the file as well that the

Mine Manager is doing surveys in the Mine. That the mine plan is being brought up to date but that's basically the puzzle, I think, we see as to what's happened with that plan.³⁹

The red workings are, of course, dated. The dates (between 1910 and 1912) indicate that the area was developed after the mine re-opened in 1907. The Archive File [Ex.17.17] contains notes by Inspectors of their observations during these years. Their memoranda include seam sections of the coal being extracted. The sections plainly describe coal within the Young Wallsend seam, including the characteristic white clay band approximately 4 inches wide, above the floor line [Ex.17.17A pp. 171, 172 & 189]. It is clear that the mine was extracting coal from the upper seam, and that the red workings were in the upper seam.

Since the material from State Archives arguably may not have been readily accessible, at least to the mine, it is necessary to consider what other historical material, relating to the Young Wallsend Colliery, was available to someone undertaking research before the inrush. On 7 November 1909 the mining union went on strike. The mine owners endeavoured to reach an accommodation with the union which, had they been successful, would have insulated the Colliery from the strike. However, ultimately the Colliery became involved [Ex.31.02 p.38].

The strike lasted four months (until 14 March 1910) [Ex.31.02 p. 38]. By the time work resumed A Kethel & Co., the mine owners, were said to be in financial difficulties [Ex.31.02 p.38]. The Department's Annual Report of 1910 records the greatly reduced scale of the company's operations. Only 64 men were employed underground, and 32 above ground (compared to

272 men the previous year) [Ex.31.04, 1910, p.153]. Only 129¼ days were worked in that year [Ex.31.04, 1910, p.170].

The position deteriorated further in 1911. The publication *Youngy Then & Now*, summarises the information which emerges from the Department's Annual Report for that year:

"Kethel and Company's financial position was grim. On 28 April 1911 Mr. O. Finney, manager of the Australian Bank of Commerce, notified the New South Wales Department of Mines that the bank was mortgagee in charge of Young Wallsend Colliery. By the end of 1911 the workforce had plummeted to 4, 2 under and 2 above ground. The colliery worked a total of 42 days for the year. The most days worked were 6 in each April and May, while there was no work at all in December." ⁴⁰

The picture was not, however, entirely bleak. The same publication, *Youngy Then & Now*, describes the events of early 1912 as follows :

"At the beginning of 1912 the Broxburn Coal and Shale Company (which was also operating Broxburn-Maitland, former Ebbw Main) obtained an interest in the Young Wallsend Colliery. **The company planned to work the previously undeveloped Borehole seam.** It seemed that prosperity would again return to Young Wallsend...." ⁴¹
(emphasis added)

Now, the Young Wallsend Colliery had worked during two periods, 1890 - 1892 and 1908 until late 1911. The newspaper article on 27 January 1908 [Ex.83.05 (supra p.37)] suggested that before the mine re-opened, its workings had been confined to the upper seam, the Young Wallsend seam,

⁴⁰ Ex.31.02 p.38

⁴¹ ibid

and that the Borehole seam had not been worked. The passage from *Youngy Then & Now* goes further. It suggests that in 1912, when the mine's working life was all but over, the lower seam had still not been worked. If that were right, then it could be inferred that both the black and red workings were in the upper seam (the Young Wallsend seam). What source did the author of this publication rely upon for that suggestion? A footnote identified the Newcastle Morning Herald of 16 January 1912. That newspaper report was in these terms:

"Young Wallsend Colliery was idle all last year, and residents began to fear that it would be closed down again for an indefinite period. However, it is understood that the Broxburn Coal and Shale Company has obtained an interest in the mine, and operations are to be carried out with a view to the development of the Borehole seam, which lies 60 ft below the Young Wallsend seam. The Borehole seam under this property was tested some years ago, and it was found to be 7 ft 9 in thick, and of this 5 ft was found to be coal of fine quality. It is claimed that the coal is amongst the best taken from the Borehole seam in any part of the Newcastle district, and if the company pushes on with the work and places the coal on the market- as apparently it fully intends to do - a new era should commence for Young Wallsend." ⁴²

The company submitted to the Court that the newspaper article did not support the assertion in *Youngy Then & Now* that the Borehole seam had not previously been worked (MFI 91RT 523 1, p.229). Whilst there are hints in the newspaper article that the Borehole seam may not have been previously worked, the text transforms that suggestion into a positive statement. It therefore goes beyond the evidence, and the company's submission is right.

Mr Darrel Adam was called as a witness in respect of various surveying

issues. He furnished a statement which included the following paragraph (referring to a consultation between Mr Adam and a retired mine manager, Mr Saywell):

"In a book by F. Danvers Powers called *Coalfields and Collieries of Australia*, published in 1912, Mr Saywell also found reference to Young Wallsend Colliery. In this work Powers stated that Young Wallsend Colliery was the only one in the district to work the Young Wallsend seam. Powers made no reference to the working of a second seam at that mine." ⁴³

The text *Coalfields and Collieries of Australia* by F. Danvers Power was indeed published in 1912. It identifies the seams developed and worked by various mines operating at that time, including the Young Wallsend Colliery. In cataloguing the operations of various mining companies, the author said this:

"The Young Wallsend seam (is worked) in the Young Wallsend colliery; and the Borehole seam (is worked) in the Lambton, Maryland, Co-operative, Wallsend, Duckenfield, New Winning (A.A. Co.), Hetton, Newcastle A. and B., Seaham No. 1 and No. 2, West Wallsend, West Wallsend-Killingworth, Teralba or Borehole, Dudley, Burwood, Lambton B., and Burwood Extended collieries." ⁴⁴

In other words, the Young Wallsend Colliery is identified as mining the Young Wallsend Seam (the upper seam). It is not amongst the list of collieries which worked the Borehole Seam (the lower seam).

The same book also included the following:

⁴³ Ex.86.03 p.5

⁴⁴ Ex.31.06 p.241

"In some places the Young Wallsend is too dirty to work. The Young Wallsend colliery is the only place where it has been worked, and here it is 47 to 60 ft above the Borehole seam."⁴⁵

This is powerful contemporaneous evidence. Having been mentioned by Mr Adam, a copy of the book was subsequently produced to the Court. It came from the library of Mr Anderson, a Senior Inspector from the Department. The publication is, however, available at the University of Newcastle Library, and at the Mining School of the University of New South Wales (T9488) (cf. Company submission MFI 91RT 523 1 p.231, para. 11A.1.11).

Another contemporaneous text was that of Professor T. W. Edgeworth David, Professor of Geology at the University of Sydney. It is entitled *The Geology of the Hunter River Coal Measure New South Wales*, and was published in 1907. It was in the possession of the Gretley Colliery at the time of the inrush. It contains a description of both the Young Wallsend and the Borehole seams at the Young Wallsend Colliery. Under the section of the Borehole Seam the following words appear: [Ex.31.04]

"Thickness of seam worked,
Five feet and a half inch"

The author then added the following comment:

"It may be noted that at the Young Wallsend Mine the Young Wallsend Seam was of a more workable quality than the Borehole Seam itself."⁴⁶

⁴⁵ Ex.31.06 p.242

⁴⁶ Ex.31.03 p 239

The company, in its submission to the Court, suggested that the reference to the Borehole seam, together with the passage set out above, supported the following inference:

“The above two extracts show that by 1907 there had been workings in both seams, with the Young Wallsend seam being of more workable quality.”⁴⁷

The Court believes, however, that the passage from Professor Edgeworth David's book is entirely consistent with the newspaper report published at about the same time, 27 January 1908 [Ex.83.05] to which reference has been made (supra p.37). The newspaper report suggested that it was the Young Wallsend seam which had been developed before 1907, apart from a small area adjacent to the shaft, opening up the Borehole seam. Indeed, the passage from Professor Edgeworth David's book perhaps furnishes an important clue as to why the Young Wallsend seam was favoured over the lower seam. It furnishes, at the same time, a reason why the colliery, once dewatered and reopened in 1907, might have chosen to continue developing the Young Wallsend seam in preference to the Borehole seam.

2.7 The Abandonment of the Mine

The Broxburn Coal and Shale Company apparently decided not to pursue further the re-opening of the Young Wallsend colliery [Ex.31.02 p.38]. The Department's Annual Report for 1912 recorded 4 persons as having been employed underground at the Young Wallsend colliery during that year, and 1 person above ground [Ex.31.04, 1912 p.148]. The same report included the following entry:

"Young Wallsend Colliery.-On the 4th October, Mr. O'Neill, manager of the Australian Bank of Commerce, notified the suspension of work at this colliery, which was being closed down."⁴⁸

The Young Wallsend colliery was not identified as an operating mine in the reports to the Department after 1912. On the copy mine plan [Ex.13.63] the last date recorded is 4 April 1912.

The file maintained by the Department, recovered from State Archives, includes a memorandum of 11 May 1914 from the Chief Inspector of Coal Mines. It is in these terms:

"This Colliery has been entirely abandoned for some time and no work has been done underground since date of last report."⁴⁹

On 6 November 1914 a further memorandum was written by the Chief Inspector of Coal Mines as follows:

"The Young Wallsend Colliery is closed down and is not likely to be re-opened in the near future. The pulley frames, winding arrangements, and all machinery, have been removed."⁵⁰

Fourteen years then passed before another memorandum was written in respect of the Young Wallsend Colliery [Ex.17.17]. On 13 June 1928 the Chief Draftsman wrote to the Chief Inspector of Coal Mines, drawing attention to the previous Chief Inspector's file note of 1914, and adding the

⁴⁸ Ex.31.04, 1912, p.168

⁴⁹ Ex.17.17A p.11

⁵⁰ Ex.17.17A p.17

following:

"In order that this Department's maps may more correctly represent the boundaries of Colliery Holdings, it is asked that, if this Colliery has not worked in recent years, approval be sought to delete the record of the boundaries of the Young Wallsend Colliery Holding from the Departmental maps, as the coal is almost wholly Crown, and no part is covered by a plan lodged under Section 35A Coal Mines Regulation Act or Section 70E Mining Act.

No notice or plan of abandonment appears to have been received." ⁵¹

The Chief Inspector responded on 14 June 1928 as follows:

"No work has been done at this Colliery for over fourteen years, at least, and the plant has been dismantled and removed.

In the circumstances I am of opinion that the Colliery may be considered to have been abandoned." ⁵²

Approval to declare the colliery as abandoned was given on 18 June 1928.

The Chief Draftsman thereafter made the following suggestion (25 June 1928):

"Record tracing might be forwarded to Charting Branch to be catalogued as a plan of "abandoned workings"." ⁵³

The record tracing identified in this memorandum was the copy mine plan containing the black and red outline of workings which we have described [Ex.13.63]. It was catalogued M18914. At the same time an entry was

⁵¹ Ex.17.17A p.4

⁵² ibid

⁵³ Ex.17.17A p.5

made in the Abandonment Register. The entry, apart from identifying the location of the mine (by reference to shire and lease boundaries) provided no further information about the mine. It did, however, include the following words:

"Declared Abandoned.19.6.28
Ms 28/7067. Plan. M18914." ⁵⁴

Ms 28/7067 is the reference number of the file which was ultimately recovered from State Archives [Ex.17.17], and which provides an invaluable guide to an understanding of the mine plan [Ex.13.63]. The Court will consider later in this report whether the Department, or the Gretley Colliery should have examined the Abandonment Register, following up the reference to file Ms 28/7067.

The company, in its submission to the Court attached considerable significance to the Abandonment Register:

"The first contributing cause of the accident was the recording, in 1928, by the Department of plan number M18914 [Ex.13.63], without comment, in the register of abandoned mines. Again, this action was both negligent and unlawful. At the relevant time the legislation provided for the provision to the Department by the Manager of the mine, of a plan that was both accurate and charted to the date of abandonment. The Department had at the time, the plan [Ex.13.63] which had been allocated the number M18914. The Department recorded such plan so numbered in the Register, knowing that it may not have been provided by the owner or Manager of the Young Wallsend Colliery, that it may not be accurate; and that it may not, at least insofar as the red workings were concerned, be charted to the date of abandonment. Subsequent users of the information portrayed by the plan, including officers of the Department and the Board, were entitled to assume, and did assume,

that the Department had acted both correctly and lawfully in making the record in the Abandonment Register."⁵⁵

The same point was expressed in a slightly different way elsewhere in the submission:

"5.1.5 At that time, (1928) the legislation provided inter alia to the effect that on abandonment, a plan was to be lodged with the Department by the owner. Such plan was required by the legislation to be:
(i) accurate; and
(ii) charted to the date of Abandonment ... "⁵⁶

The submission added:

"This number (referring to M18914) was entered into the Department's register of abandoned collieries without qualification in 1928. We submit that that action by the Department constituted a representation without qualification that the Department had turned its mind to whether the plan complied with the requirements set out in paragraph 5.1.5 above and decided that it did before entering the plan number in the register without any qualification. It is noted that other entries in the register contain qualification. [Ex.31.09]"⁵⁷ (parenthesis added)

The document referred to, [Ex.31.09] was an entry in the Abandonment Register relating to another colliery (the West Greta colliery), where the following words appear:

"Plan accepted as Abandonment M20745, being old tracing

⁵⁵ MFI 91 Vol.1, p.6, para 2.2.1

⁵⁶ MFI 91 Vol.1, p.92, para 5.1.5

⁵⁷ MFI 91 Vol.1, p.92, para. 5.1.7

located at Coalfields office, Newcastle.”⁵⁸

The Abandonment Register also included the following words in relation to another colliery (the Wilga Colliery):

“To be considered abandoned.”⁵⁹

However, the company's submission is unpersuasive. First, it elevates the Abandonment Register into something which it plainly is not. The Register has not been established as a consequence of some statutory provision in the *Coal Mines Regulation Act 1982* (or regulations) or predecessors of that Act. It is simply a collection of documents, assembled by the Department for its own convenience, and, no doubt, as a point of reference for others. That is not to say that the Department is absolved from the need to exercise care when adding material to the Register. Plainly care should be taken when performing that task. At the same time, the Register cannot be regarded as the equivalent of a certificate of title under the Torrens system. A person conducting research, who has access to it, can be expected to examine critically any entry which it may contain.

Secondly, there is nothing on the face of plan M18914 [Ex.13.63] to suggest that it is an abandonment plan submitted by the mine to the Department in compliance with either Section 32(1) of the 1902 Act, or Section 39 of the 1912 Act. Indeed, the evidence is the other way. There is on the plan no reference whatever to abandonment. There is nothing to suggest the workings are up to date (cf. Surveying and Drafting Instructions 1984, Clause 4(1)(b)[Ex.30.01]). The roadways giving access to areas

⁵⁸ Ex.31.09

⁵⁹ *ibid*

mined have been left open, rather than closed off. Moreover, the plan M18914 is a copy of the mine plan made on 21 March 1892, and periodically updated thereafter. It is so inscribed. Its likely source was the Department, rather than the mine. Had the source been the mine, and the intention abandonment, one would have expected lodgement of the original mine plan, not someone's copy made in 1892. Further, if the likely source was the Department rather than the mine, then the use of plan M18914 in the Abandonment Register would suggest that the company had defaulted in its obligations under the Act (as it is now known that it had), and that the Department had resorted to its own plan for want of something better.

Thirdly, the impression of default on the part of the company is reinforced by the use of the words "declared abandoned" in the Register, rather than simply "abandoned". It is also reinforced by the lapse in time between the last date on the plan (4 April 1912), and the date the colliery was declared abandoned (19 June 1928).

Further, the suggestion that the Abandonment Register was one of the causes of the tragedy at Gretley presupposes that someone from Gretley examined the Register before the inrush, as part of the research undertaken into the location of the Young Wallsend Colliery. The Court will address that issue later in this Report. However, the Court believes that it is highly unlikely that the Register was consulted by anyone from the mine, whether the surveyor or the mine manager. Accordingly, it appears to the Court that the Abandonment Register cannot be regarded as one of the causes of this tragedy.

What, then, emerges from the historical material? The evidence is sparse, and some of it is obscure. Much of it is contradictory. There are scattered clues as to the true position, and some skill, and a degree of luck, would

be required to reach the correct conclusion, unless one had access to the material in the State Archives [Ex.17.17].

Having dealt with the historical material, the Court is now in a position to consider who was responsible for the creation of sheets 2 and 3 of Rt 523, the top and Bottom seam sheets, which are now known to be wrong.

2.8 The 1:4,000 Series Seam Sheets

When considering who was responsible for the top and Bottom seam sheets (RT 523, sheets 2 and 3), [Ex.13.22], it is convenient to deal with a related issue which gives rise to many of the same questions. It concerns the series of plans used by the Mine Subsidence Board known as the 1:4,000 series seam sheets.

The Mine Subsidence Board is a statutory corporation established under the *Mine Subsidence Compensation Act 1961* (S6(1)). Its responsibilities include the determination of claims for compensation arising out of damage to property caused by subsidence (S12). Where underground mining occurs, a seam of coal is extracted. Seams vary in thickness. At Gretley the Young Wallsend Seam (the upper seam) is 2.8 metres thick. Obviously, once the coal is removed, a void is created. The surrounding strata makes an adjustment. That adjustment may, depending upon the terrain, and the extent of mining, cause the surface to slump. That may, in its turn, bring about structural damage to property, giving rise to a claim for compensation against the Board.

The Mine Subsidence Board, in these circumstances, commissioned the Department of Mineral Resources to produce a series of plans, known as seam sheets. These plans, which form part of the 1:4,000 series, were

designed as a series of overlays. By positioning the plans, one on top of another, one can see at a glance the location of surface features, and the position of mining at various levels underground.

The creation of these plans meant that those responsible for their production were obliged to identify the location of collieries, including abandoned collieries, and thereafter identify the individual seams which had been worked. In the case of the Young Wallsend colliery that required an understanding of whether one seam had been mined, or two, and if only one, whether the upper seam (the Young Wallsend seam) or the lower seam (the Borehole seam).

The seam sheet incorporating the Young Wallsend colliery was sent to the Mines Subsidence Board in late 1985 [Ex.3.02]. The depiction of the workings of that colliery are now known to have been wrong [Exhibits 3.4 & 13.16]. The error was the same as that made in sheets 2 and 3, namely:

- It was assumed that the colliery had developed both the upper and lower seams.
- It was further assumed that the workings in the upper seam corresponded with the black oval shape on the original copy mine plan [Ex.13.63]
- It was also assumed that the red workings on the copy mine plan were in the lower seam, rather than the same seam as the black.

It seemed likely that whoever produced the 1:4,000 series seam sheets had relied heavily (if not exclusively) upon the top and bottom seam sheets [Ex.13.22]. Hence, the error in those sheets was perpetuated, and indeed reinforced by its incorporation in yet another series of plans.

After the inrush, the Gretley colliery was obliged to identify all plans relied upon in the depiction of the Young Wallsend colliery [Ex.73.01 p.31(77)]. Amongst the plans in the survey office were the top and bottom seam sheets [Ex.13.22] and the 1:4,000 series seam sheets used by the Mines Subsidence Board.[Ex.6.34]

2.9 Submissions by the Parties

The Australian Collieries' Staff Association made the following submission to the Court:

"In our submission the cause of this accident was the fact that Sheet 1 had been misinterpreted by the Department of Mineral Resources. If Sheets 2 and 3 had never been created, authenticated by having been given the title of record tracing (R/T) and then being circulated to adjoining collieries this tragedy would never have occurred." ⁶⁰

The Company made a similar submission, although it went further:

"We submit that the tragedy at Gretley on 14 November 1996 was caused by the Department's negligent and unlawful creation and dissemination of two erroneous sets of plans, being the "Top Seam" and "Bottom Seam" plans and designation of those plans as record tracings and by the Department's negligent creation and dissemination of the relevant 1:4000 Seam Sheets.

It is submitted that the Department had a duty of care to the industry and its employees to properly exercise its functions. The Department's failure to do so was the prime cause of the accident." ⁶¹

What was the Department's position? The Department did not concede that

⁶⁰ MFI 89 Vol.1, pp 30/31

⁶¹ MFI 91 Vol.2, p.455

it was responsible for the creation of sheets 2 and 3. It pointed to certain evidence which suggested some other party may have been responsible (MFI 92 p.76(ff)). The Department acknowledged that it certainly came into possession, at some stage, of sheets 2 and 3, and decided to incorporate them into the plans which it labelled "Record Tracings" (RT 523 sheets 2 and 3). It did not concede, however, that doing so was either unlawful, or the consequence of any lack of care. Whilst the Department acknowledged its responsibility in respect of the production of the 1:4,000 series seam sheets, it neither conceded negligence, nor the relevance of such plans to the task which the mine was required to perform (MFI 92 p.88)

The following issues will be examined in order to resolve these differences:

- First, who was responsible for the creation of sheets 2 and 3, and did they exercise that degree of care which one would expect?
- Secondly, if the Department was responsible, was its action unlawful, as suggested by the company?
- Thirdly, when were the bottom and top seam sheets incorporated into the series of plans labelled "Record Tracings" in respect of the Young Wallsend colliery (RT 523 sheets 2 and 3 respectively; RT 523 sheet 1 being the old mine plan showing the red and black workings). What significance attaches to that action on the part of the Department, and was it unlawful, as the company again suggests?
- Fourthly, what research was undertaken by the Department before producing its depiction of the Young Wallsend colliery in the 1:4,000 series seam sheet supplied to the Mine Subsidence Board? Was

that research adequate in the circumstances?

The Court will consider these issues in turn.

2.10 The Coopers & Lybrand Review

It was soon apparent to those investigating the inrush that the plans held by the colliery, and by the Department, were wrong. The Chief Inspector, Mr McKensey, in these circumstances, thought it undesirable that the Department should further investigate its own role in the creation and dissemination of such plans. Coopers & Lybrand, Chartered Accountants, were retained to carry out a review of the Department's procedures. The report by Coopers & Lybrand, however, reached the following conclusion on this issue:

"Based on the investigations conducted as part of this review, it has not been possible to identify who may have created sheets #2 and #3." ⁶²

A number of witnesses interviewed by Coopers & Lybrand, however, identified the mapping programme by the Department on behalf of the Mine Subsidence Board (the 1:4,000 series plans) as a possible reason for the creation of separate sheets, said to represent the top seam and the bottom seam of the Young Wallsend Colliery. Coopers & Lybrand referred to this evidence in these terms:

"It is unclear why these two sheets would have needed to be created. The linen of the original record tracing is not in such poor condition as to require copies to be made in the event of the original becoming illegible or falling apart. Some staff

members of the Department speculated that the most likely reason for these two sheets to be prepared would be for the purposes of a mapping project, in which each worked seam may have been required to be shown separately and then reduced to the appropriate scale for the purposes of the mapping project.”⁶³

The report identified two mapping projects undertaken by the Department.

It said this:

“From discussion with a number of Department employees, it appears there have been two such mapping projects in recent times. The first occurred in the early 1970's, and another project occurred in the first half of the 1980's, known as CD1 and subsequently extended to CD10.”⁶⁴

However, Coopers & Lybrand discounted at least the latter mapping project, CD10. It said this:

“Based upon examination of the files relating to CD1 and CD10, it appears that RT #523 already comprised 3 sheets (rather than the single original record tracing) prior to the commencement of CD10. Therefore it does not appear that sheets #2 and #3 were created as part of this project.”⁶⁵

2.11 The Creation of Sheets 2 and 3

There was no direct evidence as to the creation of the top seam and bottom seam sheets (RT 523, sheets 2 & 3) [Ex.13.22]. There was, however, a deal of circumstantial evidence which strongly suggested that the Department was the source of these plans.

⁶³ Ex.20.02 p. 32

⁶⁴ Ex.20.02 p. 33

⁶⁵ ibid

Mr Barrington Walker was the Chief Surveyor of R. W. Miller & Co. Pty. Ltd. (later Coal & Allied) until his retirement in 1988. In 1972 he sought from the Department a copy of the record tracing for the Young Wallsend colliery. The Department responded by letter of 27 October 1972 [Ex.83.03]. It provided a solitary sheet, being a copy of the old plan, showing the black and red workings (now known as RT 523 sheet 1) [Ex.13.63]; (T7886). It is safe to infer, therefore, that in 1972 sheets 2 and 3 (separating the red and black workings) had not yet been included amongst the plans which the Department classified as the record tracings for the Young Wallsend Colliery.

Mr Robin Turner was a geologist who formerly worked for BHP, Newcastle. BHP, before 1990, owned a number of collieries, including the Stockton Borehole colliery. That colliery contemplated expansion into an area which included the abandoned workings of the Young Wallsend Colliery. Mr Turner undertook an investigation into the geology of that area. He produced a number of reports, the first in April 1979 [Ex.50.2], and the second in July 1983 [Ex.6.04]. The second report included a number of plans, some relating to the Young Wallsend seam, and others to the Borehole seam. The outline of the Young Wallsend Colliery in the Young Wallsend seam corresponded to the outline appearing in the top seam sheet. His investigation of the Young Wallsend Colliery included an examination of the old plan [Ex.13.63]. He recalled his reaction in these words:

"My recollection of looking at the original record tracing when I went to the Department of Mineral Resources in Sydney was that it was confusing. This was because the two workings were superimposed over one another in black and

red ink.”⁶⁶

Mr Turner sought a copy of the plan. His recollection of the conversation with the departmental officer was as follows:

“I want a sepia copy of this plan so I can take it back and reduce it to 1:4000 to locate onto our structural geological maps that we are producing.”

He would have said words to the effect of:

“We cannot give you a sepia of that because it is the blue linen and it is vague. What I can do, however, is give you a copy of a retracing of it.”

I then said words to the effect of:

“That would be good. Can you please send them to me as soon as possible.”

He then said;

“Ok.”⁶⁷

Mr Turner was unable to fix the date of that visit, beyond suggesting that it was some time between 1979 and 1983 (T4021). Within a month of having made the request a tube arrived from the Department containing two plans (T4022). The first was titled “Young Wallsend Colliery Workings Top Seam”, and the second “Young Wallsend Colliery Workings Bottom Seam”. Mr Turner said this:

“Both plans were on milky white film. The unusual thing about them was that they were actually originally traced. They were obviously traced by the Department straight off that blue linen. I did not expect to get a tracing, I expected to get a sepia copy of a tracing if they would have traced it, but they sent me the original tracings of each set of workings in each seam.”⁶⁸

⁶⁶ Ex.50.01 p.8 para. 41

⁶⁷ Ex.50.01 p.6 para. 33

⁶⁸ Ex.50.01 p.7 para. 37

Mr Dennis Browning, a draftsman employed by BHP, witnessed the arrival of the plans. Mr Turner recalled his conversation with Mr Browning as follows:

"When I opened them up I spoke to Dennis Browning who was the draftsman working with me at BHP at that time and said words to the effect of:

"Dennis, look at what they have done. They have sent us the originals. This is crazy, this never happens."

Dennis then said:

"Yes, it is crazy."⁶⁹

Mr Turner added:

"The main reason for my visit to the Department of Mineral Resources was to obtain a clear copy of the Young Wallsend Colliery workings together with their location. I do not think I asked the Department to separate the workings. I did not expect a retracing, I expected a photographic copy of the original sheet 1."⁷⁰

Mr Browning remembered the incident. His account was in these terms:

"Subsequent to Robin's visit to the Mines Department a set of plans was received at our office at the Steelworks. On the day they arrived an exchange between Robin Turner and myself took place in words to the following effect:

R Turner: "Stagger me mate, you should see what I have just received!"

D Browning: "What's that Robin?"

R Turner: "When I was at the Mines Department in Sydney recently I saw the mine record plan for Young Wallsend Colliery. I asked if I could have a copy. I wasn't sure how they would make a copy but I didn't expect this."

⁶⁹ Ex.50.01 p.7 para. 38

⁷⁰ Ex.50.01 p.8 para. 42

D Browning: "Why, what have they sent you?"

R Turner: "They have gone to the trouble of drafting original drawings of each of the seam's workings onto drafting film."

D Browning: "That's amazing! Seeing the quality of the drawings I would have expected that it would have taken someone a day or two to produce them."⁷¹

When BHP sold its interest in various mines in 1990 it passed its records, including plans, to the purchaser, FAI Mining Pty. Ltd. (later Oceanic Coal Australia Ltd. ("Oceanic Coal")). The plans described by Mr Turner are still held by Oceanic Coal. They were produced to the Court [Ex.13.49]. They indeed have a milky white appearance, and are originals, not copies.

Shortly after the plans were received from the Department, Mr Browning arranged for them to be photographed. The negatives, known as aperture cards, were also produced to the Court [Ex.51.02]. Mr Browning recorded the date on the foot of the plan as each was photographed. A print out [Ex.51.03] revealed the date as 27 May 1980. Upon this basis, Mr Browning was able to provide the following evidence:

Q. Having regard to the aperture cards which you located over the weekend or on Friday, am I right in assuming that the date of this conversation can now be fixed rather more accurately than at the time you made your original statement?

A. It can, yes.

Q. You would fix it as some time shortly before those cards were in fact created?

A. That is right.

Q. In 1980?

A. That's correct.⁷²

⁷¹ Ex.51.01 p.2 para. 7

⁷² D. W. Browning T4085

Neither Mr Turner nor Mr Browning knew the source from which the Department had obtained the plans which it had chosen to send. Mr Turner, not unreasonably, assumed that the Department had responded to his request by arranging for the plans to be drawn.

The following submission was made on behalf of the mine manager, Mr Porteous:

"Although there is no direct evidence of how the plan (that is, the plan headed Young Wallsend Coal Workings - Top Seam) came into existence, the only reasonable inference to be drawn is that it was created by the Department." ⁷³
(parenthesis added)

The company, in its submissions, was even more emphatic:

"The evidence is overwhelming that the Department created the "Top Seam" and "Bottom Seam" plans. In particular, Mr Turner of BHP Collieries gave evidence of the receipt by him of original tracings [Ex.13.49] depicting the Top Seam and Bottom Seam workings in about 1978 or 1979. He received these plans in response to a specific request to the Department." ⁷⁴

The Department, however, resisted the inference, characterising it as speculation. It said this:

"At the time of the request the officer said to Mr Turner:

What I can do, however, is give you a copy of a
retracing of it. [Ex.50.01 p.6 para. 33]

The answer was not to the effect "I will make a copy."

Nor was the answer to the effect "I will spend time and effort tracing them by hand and I will not charge you for it."

⁷³ MFI 88 p.54

⁷⁴ MFI 91 Vol.1, p.102

The actual answer that was given supports two propositions equally.

The first is that the Department created Sheets 2 and 3, and then sent them to Mr Turner.

The second is that the Department located Sheets 2 and 3 in its records and then sent them to Mr Turner.

To choose the first proposition over the second proposition is to resort to speculation." " 75

The submission continued:

"In fact, the second proposition is more likely because:

- a. It is inherently unlikely that a Departmental officer would have expended time and effort creating such sheets and not have forwarded a covering letter or an invoice with the sheets.
- b. It is inherently unlikely that a Departmental officer would not have dated, signed or in some way identified the sheets if they had been created at work.
- c. The material used is "mylar (plastic) film double A3 size."

Such material was recognised by Miss Roberts as being "the sort of plastic that we tried out for a short period when I was in private industry before I came to the Department." 76

The submission concluded by identifying another possible source. It said this:

- "d. B.H.P. may well have created sheets 2 and 3 and provided them to the Department. It is clear that B.H.P. "had in its possession and photographed either the original record tracing or a copy of it in March of 1978". In such circumstances B.H.P. had the opportunity to create sheets 2 and 3 prior to forwarding them to the Department and prior to Mr Turner receiving them from the Department. If B.H.P.

75 MFI 92 p.76

76 MFI 92 pp 77/78

did in fact create sheets 2 and 3 that would be consistent with the three points referred to above." ⁷⁷

The Court is unpersuaded by the Department's arguments. The evidence strongly points to the Department as having created sheets 2 and 3. First, the sequence described by Mr Turner supports that inference. Secondly, the provision of such a service by the Department, though unquestionably generous, was not unduly so. The Department plainly sees itself as providing a service to industry, assisting where it can.

Thirdly, it must be acknowledged that providing the originals of sheets 2 and 3 to Mr Turner was odd. One would expect the Department to retain the originals. However, the fact that it supplied the originals does not assist in determining who produced such plans. If one assumes that someone else produced sheets 2 and 3, and gave them to the Department, one would not then expect the Department to give the originals away to a person who made an inquiry, retaining only a copy. Supplying the originals casts no light, one way or the other, upon who was responsible for production.

Fourthly, the other party suggested as a possible source, namely BHP, (see also I. C. Anderson at T2972) would appear unlikely. BHP had a system of logging in a register each plan produced (T4080/1). Plans drawn after the receipt of sheets 2 and 3, for instance, appear in that register [Ex.51.01 Annexure B]. The register contains no reference to sheets 2 and 3 (T4100). Moreover, it would be odd for BHP to furnish the Department with the originals of sheets 2 and 3, drawn it is suggested some time after 1978, and a short time thereafter for the Department to return the same plans to BHP, in response to a request for information.

2.12 The Degree of Care Exercised in the Creation of Sheets 2 & 3

What care would one expect the Department to have exercised in the creation of sheets 2 and 3? It appears that sheets 2 and 3 were drawn upon the basis of an examination of sheet 1. However, the task of creating sheets 2 and 3 was not simply a matter of mechanically tracing the outline of the black and the red workings. It was first necessary to interpret the old plan (sheet 1), and determine what the red and black workings represented.

Interpreting the old plan is not easy. It presents a puzzle, without any obvious answer. Why are there two colours? Why do they overlap? If they represent two different seams, which seam is which? Why is there no legend?

Whoever was responsible for sheets 2 and 3 did resolve these issues by determining:

- First, that the two colours represented workings in different seams
- Secondly, that the black workings represented the upper seam (the Young Wallsend Seam)
- Thirdly, that the red workings represented the lower seam (the Borehole Seam)

What was the basis upon which that interpretation was made? Since there is no direct evidence, one must rely upon inference. In determining what inferences should be drawn the following questions will be examined:

- First, is there anything on the old plan (RT 523, sheet

1) [Ex.13.63] to support (or refute) the interpretation which lies behind sheets 2 and 3 [Ex.13.22].

- Secondly, if there is not, what other source or sources would one expect a person who has the responsibility of interpreting the old plan to consult? Is there anything within that material which sheds light upon these issues?

Dealing with the interpretation of the old plan itself, two things should be said. Both are obvious. First, one would expect the person given the task of interpreting sheet 1 to be suitably qualified. He (or she) should be a surveyor, or possibly a mine manager, or both. It would be quite unacceptable to assign such a task to a draftsman.

Further, one would expect such a person to make a very close examination of the plan before reaching a view. Mr Knight, a surveyor, and a qualified mine manager, stated what he would have done had he been required to interpret the plan:

A. ...if I was in that situation, where I had to go to the department and I was presented with that plan ...

His Honour. Which plan?

A. The record tracing, I would have examined it closely and taken into consideration all the markings on the plan, the pencil markings included,⁷⁸

In 1984 the Wallsend Borehole Colliery was obliged to address the same issue as would have been addressed by the Department when creating

sheets 2 and 3, namely, the interpretation of sheet 1 [Ex.13.63]. The *Coal Mines Regulation (Survey & Plan) Regulation 1984* obliges a colliery to show on its mine plan any abandoned workings within 100 metres of its boundary (clause 13(3)(b)). The Young Wallsend Colliery was within 100 metres of the boundary of the Wallsend Borehole Colliery. The colliery, as it happened, had a colour copy of the mine plan of the Young Wallsend Colliery amongst its records. The mine manager, Mr MacLeod, described what was done in order to comply with the new regulation. He said this:

"A group of our staff including the surveyor, who I think was John Walker, probably the Manager and maybe survey assistants examined the plan prior to meeting the Department's requirements. There was some doubt about whether the plan we had showed one or two seams." ⁷⁹

Mr Barrington Walker (the father of Mr John Walker referred to) when cross-examined by Counsel for the company had a similar recollection. He said this:

Q. If you were to retrace your steps now and if you had to do the job now you would agree, would you not, that merely by looking at the old mine plan it does not in any way allow you or assist you to make a separation of the workings, does it, or the seams?

A. It doesn't lend itself to that at all.

Q. And because the plan did not allow you to carry out the request by the Department you went back to the Department to see whether or not it had further information?

A. That's right. ⁸⁰

Mr Knight, having examined sheet 1, expressed a similar view: (T6803;

⁷⁹ Ex.83.01 p.2 para. 6

⁸⁰ B. M. Walker T7960

T7329).

In three locations on the old plan (sheet 1) there are pencil comments which were clearly visible and legible. Each comment is the same, and is in these terms (referring to the Chief Inspector of Coal Mines):

"CICM states that First Workings were probably carried out in this area

18.1.63"

Each comment is accompanied by an arrow which points to various locations near the centre of the workings. The comments, no doubt, were intended to draw attention to the odd shape of the red workings [Ex.61.04, p.28 (para. 101)) and the fact that they appeared to be incomplete (Mr McKensey T7055; Mr Adam T8426). It is not uncommon to find pencil notations upon plans, assisting interpretation of them. Mr Turner, for instance, gave the following evidence in which he identified his reasons for wanting to see the original record tracing:

- A. ... because even a photocopy or whatever of a linen tracing is inadequate ... I mean, I looked at the linen tracing quite carefully because I was looking for structure from it and it was shades of colour, pencil marks, anything that anyone would write on it ..." ⁸¹

Mr Knight gave similar evidence. He said:

- A. ... my previous experience with old plans it is often useful to find some little snippet of information on the plans whether it be in pencil or sometimes pencil that's been rubbed out. Have a close look at the original plans to try and get some sort of information

that will give a better definition of just where things are.⁸²

There is a further pencil note on sheet 1. It is one of some importance. It is written on an angle, and to one side of the workings. It directly contradicts the interpretation which underlies sheets 2 and 3. The note is very faint. Indeed, it is barely visible. It is partly obscured by one of the other pencil notes to which reference has been made. A forensic examination, with the aid of an infra-red light, demonstrated that the note is in these terms:

"Black (Bo)rehole seam.
Red? W? seam"⁸³

"?" indicates that there may be characters present which cannot now be deciphered, "()" indicates a less certain decipherment. The message, however, is plain enough. The red workings were thought to be in the Young Wallsend Seam, (the upper seam). Sheet 3, in contrast represented the red workings as the Borehole Seam (the lower seam).

There is no date on the note, nor indication as to the author. Since the other pencil note, attributed to the Chief Inspector (dated 18.1.63) has, in part, been superimposed upon the note, it is reasonable to suppose that it was made before 1963. The evidence revealed two occasions, prior to 1963, when sheet 1 was considered for the purpose of determining the locations from which coal had been extracted. A memorandum in the file recovered from State Archives, written by the Chief Mining Surveyor on 14 March 1912, included the following paragraph (written at a time when the

⁸² R. A. Knight T6767

⁸³ Ex.91.02 p.2

operations of the mine had been discontinued):

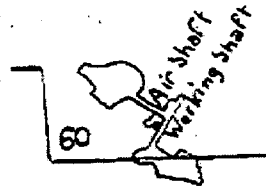
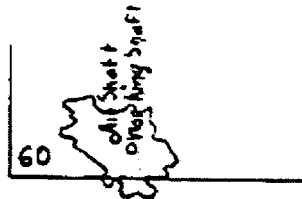
"The workings of both seams would appear to slightly encroach upon portion 101 which has been reported on as being a part of the West Wallsend Colliery Holding." ⁸⁴

The note was accompanied by a diagram. The diagram separated the two colours on sheet 1 [Ex.13.63], placing the red in the top seam, and the black in the bottom seam (i.e. the reverse of sheets 2 and 3). The diagram is reproduced overleaf (see Figure 4 taken from Ex.17.17A p.14). Figure 4 is entirely consistent with the pencil note on sheet 1.

The second occasion revealed by the evidence, when the issue was again considered, was a comprehensive study of the geology of the Newcastle coalfields undertaken by the Geology Department of BHP. The study was apparently made between the years 1948 and 1955 [Ex.50.01 p.2 para.11]. It included a diagram relating to the Young Wallsend colliery which was almost identical to Figure 4. In other words, the person from BHP, responsible for interpreting sheet 1, formed the view that the two colours represented workings in two seams, and that the red workings were in the upper seam, and the black in the lower. Again, that interpretation is entirely consistent with the faint pencil note on sheet 1.

Figure 4: TRACING

Young Wallsend Colliery Workings from State Archive file

Top seam workings*Borehole seam workings*

Two questions arise:

- First, would one have expected the Departmental officer given the responsibility of interpreting sheet 1 (at the time sheets 2 and 3 were produced) to have noticed the faint pencil note?
- Secondly, if so, what significance should he have attached to the words appearing in the note?

The faint pencil note is unquestionably difficult to read. The company accurately summarised the evidence in these words:

"The attention of several witnesses was drawn to the faint pencil note. Some, despite attention having been drawn to it, either could not see it, or could not decipher it. Some of the witnesses said that they believe they would have noticed it."⁸⁵

The submission continued:

"The most telling evidence, however, is that, in fact, despite the accident having occurred in November 1996, whereupon Exhibit 13.63 was scrutinised by many people, including Mr Anderson, Mr Kininmonth and Mr McKensey who have given evidence, no-one noticed the marking until its existence was disclosed well after the hearing commenced."⁸⁶

That submission is, however, not accurate. The faint pencil marking was noticed within days of the inrush. Mr Robinson, the mine surveyor at Gretley, for instance, described a meeting on 25 November 1996 at the colliery where a colour photocopy of the old plan (sheet 1) was examined.

⁸⁵ MFI 91 p.294 para.14.4.14

⁸⁶ MFI 91 p.294/5 para.14.4.15

He said:

"I took the colour photocopy plan back to the Survey Office and looked at it for some time. I was trying to find something that was not obvious and that had not been noticed so far. I noticed there was some faint handwriting, but I couldn't work out what it was. The handwriting appeared to be in pencil and had been written over by some other writing. A little later (approximately 15 minutes after I left the Conference Room), John McGarvie walked through the Survey Office on his way to the Main Office. We then had a conversation during which an exchange to the following effect occurred:

I said, pointing at the faint handwriting on the colour photocopy plan:

"Can you tell what this faint writing says?"

He said:

"No, I will go and get my glasses."

John McGarvie left the room. He returned a little later and looked at the plan with his glasses on and said he could make out the word "black" or "borehole" (I don't remember which). I believe that I could make out that the two lines of writing said: "Black Borehole Seam" and "Red YW Seam".⁸⁷

The Australian Collieries' Staff Association made the following submission, relevant in this context:

"We remind your Honour that the only witness that was able to read the hand written note relating to colours of seams was Robin Knight. He gave this evidence after he had been allowed time to examine the plan in circumstances that we have said at other points in the evidence "has an air of unreality about it". Your Honour will recall that he was given time to examine the plan with a magnifying glass and Counsel Assisting in fact drew to his attention the particular pencil notation."⁸⁸

⁸⁷ Ex.62.05 p.35 para.93/4

⁸⁸ MFI 89 Vol. 1 p.21

That submission is also inaccurate. Mr Knight clearly was not the only witness who could read the faint pencil notation. Nor would it be the least unusual for a surveyor to use a magnifying glass to read an old plan. Moreover, Counsel Assisting did not specifically direct Mr Knight's attention to the faint pencil note. Rather, he directed his attention to a general area of the plan. The transcript of Mr Knight's evidence is as follows:

- Q. Can I approach the plan, and I just draw your attention to this general area below the H and the A, do you see that?
- A. Yes, I see the area, yes.
- Q. If you just look at it for a moment?
- A. Yes, okay.
- Q. I think you can see an arrow and certain pencil notations?
- A. Yes.
- Q. Can you see anything else?
- A. There's some other pencil notations there that I can't read, but there are some of the markings there, yes.
- Q. Would you expect a surveyor to attempt to read those notations?
- A. Yes.⁸⁹

One would hope that a competent surveyor, closely examining sheet 1, would notice the very faint words which appear, and would attempt to read them. Having said that, the words are very faint. One would hesitate to condemn someone for having missed them.

Assuming the note was seen, what significance should attach to it? Mr Knight said:

"However, I would point out that I believe on an examination of that plan I would have seen the pencil notations that you

pointed out to me yesterday and that would have raised the question of which seam was which; and as a result of that it probably would require further investigation, because I believe from a close examination of that plan I cannot see any other reference on that plan that would clearly indicate which seam is which. The pencil notation that you pointed out wouldn't be the normal method of identifying which seam is which; there would normally be a legend of some sort on that plan. Possibly that pencil notation is a notation by somebody who has been viewing and trying to interpret the plan or somebody who perhaps had other information or local knowledge of the seam, but I don't believe it is conclusive evidence of which seam is which, and as I say I can't find any evidence on that plan to indicate which seam is which. There are suggestions here and there but I can't see anything that is conclusive in that regard." ⁹⁰

When cross-examined by Counsel for the company, Mr Knight also said:

- Q. No, I want you to put sheets 2 and 3 aside for a moment, if you would?
- A. Okay.
- Q. There was a pencil mark on sheet 1, correct?
- A. Yes.
- Q. And you voiced your opinion that you would not be able to know or say how that pencil mark got on that document?
- A. Yes.
- Q. And obviously you would not know who put it on and at what stage?
- A. That's right.
- Q. You went on to say that in your own experience and consistent with your own knowledge it could never be part of a certified plan, a pencil mark, could it?
- A. But it wouldn't be disregarded. ⁹¹

We now know the actual position of the workings in the upper seam

⁹⁰ R. A. Knight T6803

⁹¹ R. A. Knight T7329

corresponds with the extremity of the red workings. This aspect of the faint note was, therefore, accurate, whereas sheet 3 was wrong. It is likely that whoever produced sheets 2 and 3 had not seen the note. Given what is now known, there appears to be no basis upon which someone could have read the note, and rejected it.

However, the approach of a competent surveyor to sheet 1 would probably have been no different, whether or not he noticed the faint note. If the note were not read, then the surveyor would simply have sheet 1 as a guide. Sheet 1 may well suggest two different seams, but provides no basis for determining which is which. If the note were read, it would simply amount to one person's interpretation, which they pencilled on the plan. It would leave unresolved how that view was formed. Being a pencil note, and not part of the plan, it would provide no adequate basis for confidently interpreting sheet 1. Hence, in either case a surveyor would need to look for further information as to what the plan meant and, in its absence, do historical research. (K. Price T5350).

Where would one expect the Departmental officer, who had the task of interpreting sheet 1, to look? One obvious source were the Annual Reports of the Mines Department, to which reference has been made (R. A. Knight T6789). Another was the Abandonment Register. Mr Knight gave the following evidence:

- Q. ... Now, you would have expected that whoever was going to consider separation of the seams would have, for instance, gone to the Plan of Abandonment Register, would you not? This is somebody working in the Department?
- A. Yes, I don't know what information they would have used, but ...
- Q. No, but one would expect that the first place they

would look is in their own records would they not?

A. Certainly, yes.⁹²

Mr Knight's attention was then drawn to the entry in the Abandonment Register, and the reference to the file number Ms 28/7065. His cross-examination continued:

Q. And they would see that there is a file number there?

A. Yes.

Q. And they would want to access that file and see what information they could get to help with their conundrum, would they not?

Mr Kirby: If it is available.

A. Yes.⁹³

When the investigation began the parties were required to prepare a list of documents in their possession, relevant to the purpose of the investigation. Mr Carroll, a solicitor with the Department, said:

"3. Exhibit 31.1 contains an inscription "Ms28/7067", which I identified as possible reference to a Departmental file from the year 1928. As part of the discovery process, I approached an officer of the Department's records section and asked if such a file was held in the Department. At this stage, I am not certain who I approached, but believe it could have been Ms Megan Gomes: If I have any inquiries as to records matters, I usually direct them to her. The person I spoke to informed me to the effect of:

"Records Branch does not keep files that old. We don't have the record cards from that period either, so I can't tell you whether the file still exists, or has been

⁹² R. A. Knight T7387/8

⁹³ ibid

destroyed." ⁹⁴

During the cross-examination of Mr Knight on 21 August 1997 the Court urged that a further attempt be made to locate the Abandonment file. Mr Carroll thereafter caused a search to be made of State Archives [Ex.88.01 p.2 (para. 6)]. The file, Ms28/7067 was then located, and produced [Ex.17.17].

The task of correctly interpreting sheet 1 was of the utmost importance. Lives may ultimately depend upon it being done properly. Due diligence, therefore, required some persistence. It is not unreasonable to expect that the officer from the Department who was seeking to understand sheet 1 should have examined the Abandonment Register, should have noticed the reference to the file, and should have thought to look in State Archives, given the age of the file. It was predictable that the old file was likely to contain important contemporaneous material, which in turn was likely to be invaluable in interpreting sheet 1. We now know that the file [Ex.17.17] was capable of explaining how the copy mine plan had evolved (supra p.) Had it been consulted, sheets 2 and 3 would not have been drawn (cf. Company's submission MFI 90 Vol.1 p.104 para 6.1.6). The Court, therefore, accepts that there was an absence of reasonable care by the Department in the production of sheets 2 and 3.

2.13 Were the Actions of the Department Unlawful?

The company, in its submission, asserted that the Department acted unlawfully in two respects:

- First, in producing sheets 2 and 3 (MFI 91 Vol.1 p.4 para 2.1.4)
- Secondly, by classifying sheets 2 and 3 as part of the Record Tracing for the Young Wallsend colliery (RT 523), and thereafter disseminating such documents to, amongst others, the Gretley colliery (MFI 91 Vol.1 p.2 para 2.1.2)

In respect of the creation of sheets 2 and 3 the company submitted:

"14.7.19 Clause 19(1) of the Survey and Plan Regulation sets out a regime under which a plan may be prepared by on behalf of the Department. We submit that unless a plan falls within that regime then the preparation of any plan by or on behalf of the Department, purporting to be a mine working plan or a record tracing is ultra vires and, therefore, unlawful.

14.7.20 We submit that the first two elements in Clause 19(1) of the Survey & Plan Regulation are:

- The Chief Inspector being satisfied that a "plan, section or drawing relating to a mine" ... "is inaccurate, incomplete, dilapidated or wholly or partly indecipherable";
- The Chief Inspector being satisfied that "in the interests of safety it is desirable for a new plan, section or drawing to be prepared ...".⁹⁵

The submission continued as follows:

"14.7.21 If the Chief Inspector is satisfied as to both those matters then he "may by notice in writing require the owner ... or Manager of the mine to have a new plan, section or drawing prepared within the period specified in the notice". We submit that unless the Department, through the Chief Inspector is so satisfied, then there is no power to cause the

creation of a new plan, etc.”⁹⁶

These submissions are rejected. Clause 19 of the *Coal Mines Regulation (Survey and Plan) Regulation 1984* (together with Clause 20) does not exhaust the circumstances in which the Chief Inspector may create a plan. Rather, the clauses identify particular circumstances where a plan may be created, and the mining company required to pay for it. These powers have no relevance in the case of the Young Wallsend Colliery, because the mining company had long since disappeared. One can envisage many circumstances where, in the interests of safety, and in the performance of specific functions identified by the Act, plans may be created otherwise than in the circumstances set out in clauses 19 and 20.

In respect of the inclusion of the bottom and top seam sheets in the documents classified as the Record Tracings for the Young Wallsend Colliery (RT 523 sheets 2 and 3), the company submitted:

“6.1.9 A mine record tracing, referred to as such in Clause 14 of the Survey and Plan Regulations, and as a record tracing in the Surveying and Drafting Instructions at Section 3, is, in effect, defined by that Regulation and those Instructions. Relevantly, for present purposes it has the following characteristics:

- (i) it is an accurate copy of the mine/colliery working plan;
- (ii) it is prepared by or under the supervision of the Mine Surveyor;
- (iii) it is forwarded to the Chief Inspector by the Manager;
- (iv) it is charted to the dates as set out.

The Chief Inspector is empowered to number such a plan “only such a plan” with the prefix “RT” pursuant to Clause 3.7 of the Instructions and such a plan is required to be kept by the Chief Inspector pursuant to Clause 18 of the Regulation.”

The submission continued:

"6.1.10 By designating the "Top Seam" and "Bottom Seam" plans as record tracings, the Department acted unlawfully. In supplying copies of them to recipients, the Department negligently misrepresented to the world that those plans, subject to the matters discussed below, had been supplied to the Department by the Mine Manager. Of all people, the Mine Manager would know in which seam or seams the respective workings are located, and the recipients were entitled to assume and did assume that those plans correctly identified in which seams the respective workings are located." ⁹⁷

In dealing with this submission, it may be helpful to set out briefly the legislative history of mine plans and record tracings. Since 1896 there has been an obligation upon the mine to maintain an accurate mine plan, recording workings up to a date not more than three months before the making of the plan (supra p.28). Before 1947, when the Act was changed, the Department relied upon Inspectors to make, from time to time, a copy of the mine plan. The Inspectors were given the right to do so, and, indeed, to require the plan to be brought up to date. These plans were sometimes referred to as 'tracings' or 'record tracings', as the material found in State Archives demonstrates [Ex.17.17A pp.14, para. 183]. In 1947 the following provision was introduced into the *Coal Mines Regulation Act 1912* :

35(1A) The owner, agent or manager of the mine at periods of not more than six months, **shall forward to the Under Secretary for Mines** an accurate tracing of the plan required to be kept in the office at the mine under subsection (1), showing the mine workings up to a date not more than three months previously and titled the mine record tracing." (emphasis added)

By this provision the obligation to copy mine plans, therefore, was passed from the Inspectorate to the mine itself.

The 1982 Act included the power to make regulations, amongst other things, in respect of the preparation of plans (Section 174(2)(w)). *The Coal Mines Regulation (Survey and Plans) Regulation 1984* was introduced pursuant to that power. The regulations included an obligation to furnish the Chief Inspector with the mine record tracing every six months (clause 14(3)). The Chief Inspector, under the 1912 Act (Section 35(1D)) and under the Survey and Plan Regulations 1984, Clause 10, was given the power to publish instructions to surveyors in respect of the preparation of such plans. The Survey and Drafting Instructions, published in 1984, include the following provision:

3.7 Catalogue Number: The Chief Inspector shall catalogue each record tracing according to a number system prefixed by the letters RT.⁹⁸

That provision was introduced in the context of a system which was already well established. Plans made by Inspectors before 1947, and plans sent to the Department by collieries after 1947, were combined, and allocated RT numbers. That, no doubt, was a convenient and sensible arrangement. There is nothing in the legislation either expressly, or by necessary implication, which makes it unlawful.

Nor is the Court persuaded that designating the top and bottom seam sheets with the prefix RT misrepresented to the world that they had been supplied by the mine manager. Sheets 2 and 3 were plainly not original plans. They were derivative from sheet 1. On the face of each plan the

⁹⁸

Ex.30.01 para.3.7

following words appear in the bottom left hand corner:

"TRACED FROM RECORD TRACING 21st March 1892" ⁹⁹

The Young Wallsend Colliery had ceased operations in the early part of this century. The mine had been declared abandoned in 1928. The plans, on the other hand, were plainly modern. Indeed, the company's submission said this:

"We submit that the "Top Seam" and "Bottom Seam" plans are really identifiable by, inter alia, the printing styles, as having been created probably in the period 1960 to 1980." ¹⁰⁰

No one could be misled into believing they had been supplied to the Department by the mine manager of the Young Wallsend colliery. Where people could be misled, through the inclusion of these plans in the record tracings for the colliery, is into believing that the Department had examined sheet 1, and determined accurately the disposition of workings in various seams. Mr Knight, for instance, said:

Q. ... Do you believe that a surveyor examining the plans, he having already in his possession two plans from the Department which did make a separation, that is sheets 2 and 3...?

A. I would tend to believe, and certainly I did in my case, I would have presumed that the person who copied those plans did the same research - if I was doing the job that's the research I would undertake and I would have presumed that he had undertaken that research and had established which was the top seam and which was the bottom seam, I would have accepted

⁹⁹ Ex.13.22

¹⁰⁰ MFI 91 Vol.1 p.105 para.6.1.11

that." ¹⁰¹

Indeed, as previously mentioned (supra p.71) the Wallsend Borehole Colliery in 1984, having been unable satisfactorily to interpret sheet 1, sought the assistance of the Department. The Chief Surveyor, Mr Barrington Walker, described what happened thereafter:

"18. To the best of my knowledge and belief, the Department of Mineral Resources, in reply to my request, forwarded to me a plan headed "top seam" showing the workings that form part of the Young Wallsend Colliery ...

19. At that time, my son, John Walker, was the statutory surveyor at Wallsend Borehole Colliery. I gave him the "top seam" plan received from the Department and I understand that he used it to trace the workings on to the mine plan."

"20. I accepted that the Department had correctly identified the workings in the Young Wallsend Seam and as the plan had come from the Department, we relied on it and had no reason to question it." ¹⁰²

There is no question, therefore, that sheets 2 and 3 had the potential to mislead. Whether a surveyor or a mine manager should have been misled, however, is a separate issue which will be examined later in this Report. The mine manager was under certain obligations in respect of the prevention of inrush which, arguably, should have enabled him (or the surveyor assisting him) to discern the unwarranted and erroneous assumptions which lay behind sheets 2 and 3.

Having dealt with the question of responsibility for sheets 2 and 3, the Court is now in a position to deal with the 1:4,000 seam sheets produced by the Department for the Mine Subsidence Board.

¹⁰¹ R. A. Knight T6789

¹⁰² Ex.85.01 p.4/5

2.14 The Creation of the 1:4,000 Seam Sheets

Reference has already been made to the mapping project of the Northern Coalfields undertaken by the Department of Mineral Resources on behalf of the Mine Subsidence Board (supra p.56, 89). The seam sheets for the area which included the Young Wallsend Colliery contained the same depiction (now known to be wrong) as sheets 2 and 3 (i.e. indicating the black workings to be in the upper seam and the red workings to be in the lower seam). How did that come about? What investigation did the Department undertake into the Young Wallsend Colliery before producing the seam sheets? Did they simply copy sheets 2 and 3 without further inquiry? Was the error in sheets 2 and 3 reasonably discoverable?

Mr Graham Hawkes was the manager, drafting of the Central Region of the Titles Branch within the Department at the time the seam sheets were produced (T3618). He is an experienced draftsman (T3619). He was interviewed by Coopers & Lybrand in the course of their investigation. The notes of that interview included the following:

"Graham advised that his recollection of the process of creating the 1:4000 and 1:25000 series maps illustrating coal mine workings was that each officer working on the project was allotted a map area or block of map areas and then he/she was responsible for the investigation of which collieries and their workings and associated seams pertained to each sheet/map area. He advised that the officer was then responsible for ordering/preparing the photo reduction of the record tracings, the positioning of them, and preparation of the final map with respect to advice from appropriate technical branches, eg. Coal Geology, Coal Mines Inspection." ¹⁰³

A system was devised in which five phases were identified, as set out in a document known as a control sheet. The five phases were: [Ex.37.02]

- Stage 1: Surface sheet
- Stage 2: Photography of mine workings plans
- Stage 3: Investigation of survey control
- Stage 4: Compilation of workings sheet
- Stage 5: Reprographic reproduction of compiled workings sheet

The first stage was concerned to identify cadastral information, and topographical features. Cadastral information is information relating to property boundaries, the location of streets and the like.

The second stage involved an investigation of mines, including abandoned mines, which fell within the area covered by the seam sheet. Mr Hawkes said this:

- A. ... You were allotted a map, or an area then you got these forms and started your investigation of what was involved in producing that map for that area.¹⁰⁴

When cross-examined, Mr Hawkes elaborated upon that brief description. He said:

- A. ...if a plan showed workings within an area it was up to us to investigate every plan that was catalogued in the Department or kept within the Department that showed workings within a certain area.¹⁰⁵

How would this be done? Mr Hawkes gave the following account:

¹⁰⁴ G. M. Hawkes T3623

¹⁰⁵ ibid T3627

- Q. Well let me ask you this: following the procedure that you would have followed, apart from the record tracing sheets, what else would you have looked at in your own experience to satisfy yourself that you had seen everything you possibly could within the department?
- A. There were various index maps available, colliery workings maps, Parish maps, district workings maps for certain area. Now they showed an outline extent of workings within an area. As well you would check through once to see if there were any adjoining information on a record tracing that gave you - that indicated that there may be other - some record tracing within the area that was not noted on a map."¹⁰⁶

A fundamental point of reference was a plan known as the Parish Colliery Workings Map [V. A. Sobol Ex.33.02 para.10; (T3411)]. The map was produced to the Court [Ex.13.50]. It was drawn to a small scale, and colour-coded, with different colours for different seams. The colours had faded so that it was difficult to discern the different shades within the Young Wallsend Colliery. That is not to say that the colours could not have been distinguished in 1985 when the map would have been consulted in respect of the 1:4,000 series seam sheets (V. A. Sobol T3411).

The Parish Colliery Workings Map was accompanied by a table which identified various collieries, and the seams worked. The table included the following information in relation to the Young Wallsend Colliery: [Ex.13.50]

REF. NO.	R.T	COLLIERY	STATE
11	523	YOUNG WALLSEND (BOREHOLE & (YOUNG WALLSEND SEAMS)	ABANDONED

The colour coding on the plan was consistent with the allocation of workings which had been made in sheets 2 and 3. Whoever was responsible for the Parish plan (which was dated 31 January 1975) had assumed that the two colours on sheet 1 signified two different seams, and that the black was the upper (Young Wallsend) seam, and the red the lower (Borehole seam).

The seam sheets which included the Young Wallsend Colliery were identified by a number, and were signed by officers of the Department:

- The Young Wallsend Seam: U5450-2 was compiled and drawn by V. Sobol, dated 11.11.85 and approved by T. House,[Ex.13.17]
- The Borehole Seam: Wallsend U5450-1 was compiled and drawn by S. Rugless, dated 17.1.86 and approved by T. House [Ex.22.11]

Mr Sobol gave evidence. His signature appeared on the plan. However, he did not undertake the research into the Young Wallsend Colliery. At the time the sheet was assigned to him, Stage 2 had been completed (T3429). The relevant mine plans had been identified, and photographed. (T3429). The negatives of the various plans photographed have been preserved [Ex.33.04]. In respect of the Young Wallsend Colliery there were four

negatives. Mr Sobol gave the following evidence, referring to RT 523, sheets 1, 2 and 3:

- A. So in this instance because there were three sheets all three were sent and the reason we have four negatives is that that particular one was just slightly too big to get on the one negative, we needed two negatives to cover it. ¹⁰⁷

Mr Sobol later said:

- Q. Do you remember whether or not you actually ever consulted or tried to work out what sheet 1 was about, or did you simply rely upon the sheets 2 and 3?
- A. I cannot ever remember having to utilise sheet 1, no; I think the sheets 2 and 3 were sufficient for the mapping that I was doing in the particular seam sheets. If I could go back to the particular parish map of Teralba, that indicated that I had two sheets I need, I apparently had those - sorry, the two seam sheets I needed, I had those for the maps that I was doing and there was no further investigation necessary. I cannot remember ever having to go to this one. ¹⁰⁸

The person who actually undertook the research into the Young Wallsend Colliery, and who arranged for RT 523 (sheets 1, 2 and 3) to be photographed, was not identified. However, the system clearly contemplated that the investigation would be undertaken by a draftsman, not a surveyor or mine manager. That person may, if he perceived the need, seek assistance. Mr Sobol said:

"11. At times when assembling the layouts, I would consult with the Department's Coal Geology Branch to help identify

¹⁰⁷ V. A. Sobol T3419

¹⁰⁸ ibid T3423

seams of coal that were sometimes shown on different Record Tracings by different names, even though they occurred at the same depth. The purpose of this was to identify splits in the seams, or the opposite, where seams of differing depths in one locality come together in another. An example of this is the Young Wallsend and Dudley seams, which come together in the vicinity of Gretley Colliery.

12. Generally, I did not examine original Record Tracings if the photography was sufficiently clear to read detail from the transparencies." ¹⁰⁹

Mr House was the Chief Drafting Officer with the Department at the relevant time. He gave the following evidence:

Q. And do you know what occurred when there was an issue as to what the record tracing depicted?

A. Yes.

Q. What would normally happen?

A. In any case where there is any doubt whatsoever, we would contact the Chief Inspector of Coalmines.

Q. And what would then happen?

A. They would be able to tell us what seam that would be worked in that area so by looking at that plan they would be able to say this is such and such a seam in red and such-

Q. I see?

A. Such and such a seam in black.

Q. All right?

A. But I think by far the majority of cases, the plan would indicate clearly somewhere on the plan which seam...

Q. Which was which?

A. Which was which, so it wouldn't happen in the majority of cases that we needed to check but if there was any doubt at all, we'd ask the Chief Inspector of Coalmines. ¹¹⁰

The system, as described by these witnesses, depended upon the

¹⁰⁹ Ex.33.02

¹¹⁰ T. J. House T3509

draftsman recognising that there was an issue in respect of which he needed assistance. A draftsman with access to the parish map [Ex.13.50], which suggested that the Young Wallsend and Borehole seams had been worked, and who was also provided with sheets 2 and 3, which so conveniently separated the upper and lower seams, would not be likely to recognise that there was an issue arising from sheet 1. It is highly improbable, therefore, that anyone with surveying or engineering qualifications was consulted in the compilation of the seam sheets.

Without hindsight it can be said that such a system was defective. The investigation phase ought not to have been left to a draftsman. It ought to have been undertaken (or at the very least supervised) by a mining engineer or surveyor. Such a person would necessarily have had in his possession (for the purposes of arranging photography) the original copy mine plan (RT 523 sheet 1) as well as sheets 2 and 3. An appropriately qualified person may well have recognised that there was a need to determine the basis upon which the separation in sheets 2 and 3 had been made and have examined more closely sheet 1. By this means the error may have been detected. Having a draftsman perform that task probably removed any chance of uncovering the error in sheets 2 and 3.

There is a further aspect which underlines the advantages in having an appropriately qualified person undertake the research. The format of the seam sheet required the inclusion of the following information in respect of each colliery appearing on the sheet: [Ex.33.03]

- Coalmine (name)
- RT (number)
- Datum for Levels
- Rate of Dip
- State of Workings
- Date of Last Workings

The seam sheets U5450-1 and U5450-2, when completed, included the following information in respect of the Young Wallsend Colliery: [Exhibits 13.17; 22.11]

Coal Mine:	Young Wallsend
RT:	523
Datum of Levels	
Rate of Dip	
State of Workings:	ABANDONED
Date of Last Workings:	1928

There is no reference on RT 523 (sheets 1, 2 or 3) to the fact that the colliery had been abandoned, or to the year 1928 (being the year the Department made the declaration of abandonment) [Ex.31.01]. The Parish Map [Ex.13.50] identified the mine as having been abandoned. However, the information concerning the year, 1928, presumably came from the Abandonment Register [Ex.31.01]. Mr House described the system employed in the investigation of collieries in these words:

- Q. But would you have expected the officer who was preparing the plan for the Mine Subsidence Board to have gone to this register, the Abandonment Register in order to determine the status of the collieries which were depicted within the plan which you had drawn?
- A. As part of the initial investigation prior to starting drawing the map he would go to every source available which would be workings maps, plan of the abandonment colliery, existing collieries and whatever RTs, so he would gather information from every possible source which would include the Abandonment Register.¹¹¹

It is likely, therefore, that the abandonment register was consulted. Whoever consulted that register, however, wrongly deduced from the entry

¹¹¹ T. J. House T3546

that the last workings were in 1928. That was a forgivable error for a person without qualifications to have made, reading the cryptic words which appear in the register (supra p.52). An appropriately qualified person (whether a surveyor or mining engineer), on the other hand, would have been likely to have noticed the words "Declared Abandoned", and the significant lapse in time between the last recorded working on sheet 1 (4 April 1912), and the date the mine was declared abandoned (19 June 1928). More information was necessary if accurate particulars as to the date of the last workings were to be provided. The file referred to in the abandonment register, Ms28/7067, (which we now know was held by State Archives) was an obvious source.

The date of last workings is important. A comparison between that date, and the dates which appear on the plan, should furnish some guide as to whether the plan is up to date. It is apparent from other seam sheets produced to the Court, that some effort was made to furnish this information. Most of the seam sheets which comprise MFI 66, for instance, provide information as to the date of the last workings.

Mr McKensey, by virtue of his office as the Chief Inspector of Coal Mines, is also a member of the Mine Subsidence Board (*Mine Subsidence Compensation Act 1961, Section 5(2)(b)*). He gave the following evidence:

- Q. You would expect with your hat on as the Mine Subsidence Board for the moment that in undertaking that process the Department would have properly researched the information available to the Department in the depiction of old workings which may appear on the plan?
- A. Yes.
- Q. In respect of abandoned collieries, one obvious source would be the Abandonment Register?
- A. Yes.

- Q. Insofar as the Abandonment Register does not include any abandonment plan but does include a file number of a Departmental file apparently relating to the Colliery, would you expect that research process to include a request for access to that file in order to determine what light it may have?
- A. I -- I would certainly expect as a Board member the Department to use all of its information and all endeavours to ensure that it was giving accurate information to the Board.
- Q. Yes?
- A. And if that was necessary to do that, then that certainly, as a Board member, I would've expected they've expected they've done that.¹¹²

His evidence continued:

- Q. As part of that process, you now being familiar with the fact that the record tracing in the matter of the Young Wallsend Colliery involves sheets 1, 2 and 3, to have had access to sheets 1, 2 and 3?
- A. The Department in making the - a plan for the Board would have that.
- Q. Yes?
- A. Absolutely.
- Q. Insofar as there is an examination of that material, that it be conducted by a competent person?
- A. I would expect that.
- Q. Insofar as there is ambiguity which can be uncovered by a competent person, that that ambiguity be uncovered?
- A. Certainly should've - it should be pursued.
- Q. Insofar as there is other material such as the file within the Abandonment Register which may shed light upon that ambiguity, that material retrieved?
- A. Yes.¹¹³

The approach of the Department in respect of Stage 2 (Photography of

¹¹² B. R. McKensey T8356/7

¹¹³ ibid T8357

mine workings plans) is to be contrasted with Stage 3 (Investigation of survey control). The separate identification of Stage 3 presumably stems from a recognition that there was the potential for error in physically locating an old mine accurately, and that because of the paucity of survey reference points on many old plans. Mr Hawkes said this:

- Q. Now, what do you mean by investigation, what does that mean to you?
- A. The investigation part means that you either have a look at the information that was on the record tracing and then decide on the best way or correlating that with surface information.
- Q. So what is the actual investigation that you do do?
- A. Well you see whether there's any survey, what sort of survey information is on the record tracing, for example whether there's any connections to surface portion corners or whether there's any co-ordinate values on the record tracing.¹¹⁴

The investigation of workings in different seams was not, however, identified as a separate phase in the process. Rather, it was subsumed within Stage 2, (Photography of mine workings plans). The system, as identified in the control sheet, therefore, does not betray the same level of anxiety about the possibility of misinterpreting an old plan in respect of the level of workings, as it does in identifying where physically those workings were located. This was perhaps another defect in the system.

Each sheet, once complete, went to the Chief Drafting Officer, Mr House, for his approval. Mr House signed each sheet as the approving officer. Approval, however, did not involve the re-investigation by Mr House of the material which had been assembled by the draftsman. Mr House described the approval process in these words:

- Q. When you approve of a plan and sign it as approving, what instructions are laid down to you before you can in fact, sign the document and approve it? In other words, just what is required of you in the approval process?
- A. It wasn't laid down. It was just a procedure that had developed as a result of some maps being put into use which people had complained to me weren't up to a sufficient standard for use in the office. So when I said, right oh, we'll develop a scheme where I approve any plan going into use as a satisfactory presentation.
- Q. But what do you include - what you mean by a satisfactory presentation?
- A. Just general standard of layout and printing standards, plotting. The map is not a mess, in other words.
- Q. All right?
- A. Proper drafting standards in preparation. ¹¹⁵

Each seam sheet contained information as to its source and compilation in the bottom right hand corner. The words used by the Department appear to have changed in the course of the mapping project. The differences in wording were identified by the Chief Surveyor of the Oakbridge Group (which includes the Gretley Colliery), Mr Kevin Price [Ex.58.04 Attachment 1]. The seam sheets which included the Young Wallsend Colliery, contained the following inscription [Exhibits 13.17 and 22.11]

"PROJECTION: Transverse Mercator in 2° zones

GRID: Integrated Survey Grid Zone 56-1 central meridian 151°

COMPILATION: Prepared by the "Let-in" process from photographic reductions of coal mine working plans and other information in the Department of Mineral Resources.

Compiled and Drawn by:.....(S Rugless 17-1-86)*

Approved by:.....(T. House).**

Produced by Central Drafting Sub-Branch Department of Mineral Resources for the Mine Subsidence Board as an overlay to the Central Mapping Authority Urban Series 1:4000 Map"

(* Signature & date handwritten in original)

(** Signature handwritten in original)

Other seam sheets included a specific warning which, typically, was along the following lines: [Ex.58.04 Attachment 1]

"*Note:* Seam sheet prepared by "Let in Process" from information available in Department of Mineral Resources, Sydney. **Workings shown may not be complete or accurately located. Workings are of discontinued and abandoned coal mines.** Compilation: photographic reductions of Record Tracings." (emphasis added)

The production of seam sheets required all plans brought together in the one sheet to be reduced to a common scale (1:4,000). That process involved compromises as to accuracy [Ex.86.04 p.9 para.4]. Mr Hartley, an officer of the Mine Subsidence Board, described the "Let in Process" in these words:

- Q. They ultimately would have to produce a document which combined a whole series of record tracings which together made up an area which ultimately would be one to 4000 scale, is that right?
- A. That is right.
- Q. In undertaking that process, was there some juggling undertaken in order to relate plans that they had possession of to these surface features. Is that right?
- A. To my understanding, yes.
- Q. This is the let in process of the best fit as you...?
- A. The let in process is a process which has been used by government authorities over the years. It has been used by the Central Mapping Authority to produce their large scale maps. It was a system that I assumed the Department thought was the best way to approach our requirements in mapping for what the board

required and from my point of view, the maps were designed by the Department of Mineral Resources to the accuracy as required by a let in process.

Mr Hartley's evidence continued as follows:

- Q. In other words you understood that reproduction process may be accurate to plus or minus 10 metres, in the case of old collieries, is that right?
- A. That is right. ¹¹⁶

The company complained that it relied upon, amongst other things, the 1:4,000 seam sheets when mining towards the Young Wallsend Colliery, and was misled. The Court will examine later the use which the mine might reasonably have made of the seam sheets, and whether its complaint was justified.

Before dealing with that issue, however, it is appropriate to deal with the Special Barrier Issue, which was raised some years before the Gretley Colliery began mining towards the Young Wallsend Colliery.

3 THE SPECIAL BARRIER ISSUE

3.1 The System for Awarding Coal Leases

Coal reserves are vested in the Crown. There are, as one would expect, elaborate procedures for the allocation of leases to mining companies. The process begins with a company identifying its interest in a particular area. Often the area will be adjacent to a mine already being operated by that company. Other companies may have an interest in the same area. They likewise may be adjacent to it. Discussions between the Department and competing parties, and between competing parties and each other, then take place. Ultimately, an accommodation is reached, or a decision is made. The company then seeks from the Minister an invitation to apply for a coal lease. Its application may relate to the area originally identified, or part of that area. The Minister thereafter, on the recommendation of his Department, may extend that invitation. Where an invitation is extended, notice is given, inviting objections. Statutory bodies affected, as well as local Councils, are notified. Assuming the mining company survives the objection process, a coal lease is drawn up, and executed by the company and the Minister.

To the west of the Gretley mine was an area known as Argenton. It included the abandoned workings of the Young Wallsend Colliery. A number of companies, including The Newcastle Wallsend Coal Company (which operated the Gretley mine), were interested in the area. Ultimately, on 22 March 1994 a lease was executed between the company and the Minister relating to a substantial part of that area [Ex.6.24].

3.2 Submissions of the Company

The company, in its submissions to the Court, made a number of allegations against the Department, and specific officers of the Department. The allegations were made in the context of the allocation of the lease to The Newcastle Wallsend Coal Company. The complaint was that the Department ought to have recognised (and perhaps did recognise) the potential for error in the depiction of the old workings of the Young Wallsend Colliery, and ought to have provided a special barrier around those workings to alert others to the presence of danger. The company said this (referring to a time shortly before the lease was executed):

"Had a special barrier around the Young Wallsend Colliery workings at that time, (or other special condition relating to mining in their vicinity) been imposed in the lease, the accident could not have occurred."¹

Elsewhere in the same submission the company asserted that the failure on the part of the Department was a "contributing cause of the accident".² The officers said to be responsible for this failure were Mr I. C. Anderson, Senior Inspector of Coal Mines of the Newcastle office, and Mr G. W. Cowan, District Inspector of the same office. Indeed the following was said in respect of Mr Anderson:

"It is submitted that on his own evidence Mr Anderson failed in his duty to impose a special barrier in relation to the old Young Wallsend Colliery. Once he was obliged to report as to whether there was a need for a special barrier, he was further obliged to obtain the file and inform himself by further investigation.

¹ MFI 91 Vol.1 p.8 para.2.2.5

² MFI 91 Vol.2 p.459 para.24.2.2

His failure in this regard is a major contributing cause. (It) is self evident that the Department's internal reference to Mr Anderson creates a safety protocol which requires strict adherence".³

The company's submission appears to rest upon a number of premises:

- First, that there was a duty upon the Department to consider whether, in the interests of safety, it was appropriate to impose a special barrier.
- Secondly, that in determining that issue, the Department was obliged to research the Young Wallsend Colliery, including plans and other material in its possession.
- Thirdly, that inevitably such research would have revealed the lack of certainty surrounding the extent of the old workings.
- Fourthly, that the Department in such circumstances was obliged to fix a special barrier, and do so on a very conservative basis to take account of that uncertainty.
- Fifthly, that the company would thereby have been warned, and if it sought to mine through the barrier, would have been subjected to a specific approval process.

This submission is framed in terms which suggest that the Department

alone (because of its failure to impose a special barrier) must take responsibility for the tragedy. However, it should be recognised that clause 8 of the *Coal Mine Regulation (Methods and Systems of Working - Underground Mines) Regulation 1984* obliged the mine manager to carry out research into the abandoned colliery, and that for the purpose of preventing inrush. It is arguably the same research which the company now suggests would inevitably have uncovered the uncertainty surrounding the depiction of the Young Wallsend Colliery. This aspect will be dealt with more fully below, when the company's responsibilities are examined.

Further, the company was obliged to apply under Section 138 of the *Coal Mines Regulation Act 1982* for permission to extract coal (apart from first workings). The company sought, and was given that permission before the accident. The necessity for the Department's approval to mine through a special barrier does not, therefore, necessarily prevent inrush occurring. Whether it would or would not have done so, in circumstances where the Department had created a special barrier, may rather depend upon the depth of the research undertaken before the special barrier was imposed.

3.3 The Power to Impose a Special Barrier

Was the Department under a duty to impose a special barrier? There are two sources of power relevant to the creation of special barriers. The company relies upon both.

First, under the *Mining Act 1992*, the Minister may impose conditions in any coal lease which is allocated. S70 is in these terms:

"70(1) A Mining Lease is subject to:

- (b) such other conditions as the Minister may, when granting the lease, impose.
- (2) Without limiting the generality of subsection (1), conditions of the following kind may be imposed on a mining lease: ...
 - (b) conditions relating to mining or mining operations; .."

The standard form of lease includes conditions which can be added or subtracted at the discretion of the Minister. Such conditions include:
[Ex.6.24]

- "8.(a) Unless with the consent of the Minister first had and obtained and subject to such conditions as he may impose the registered holder shall not mine for, work, win or remove any coal from that part of the subject area shown as a barrier metres wide on the plan annexed hereto and marked
- 10. The registered holder shall not work or cause to be worked any seam of coal within the subject area without leaving, if the Minister, by order, given in writing to the registered holder, so directs, a barrier of such width or a protective pillar or pillars of such size or sizes as is specified in the order, against any surface improvements or any feature whether natural or artificial." ⁴

There is no question that the Minister, under this power, had the right to define a special barrier around the Young Wallsend colliery, and to include conditions 8(a) and 10 in the lease which was granted to the company.

The second source of power, however, is less certain. It arises under section 139 of the *Coal Mine Regulation Act 1982*. The section is in these

⁴ MFI 91 Vol.1 pp.117ff; MFI 95 pp.24 & 25

terms:

"Barriers and protective pillars

139. (1) The owner of a mine shall not mine or cause to be mined any seam of coal in the mine without leaving a barrier of the specified width:
- (a) against the external boundaries of the colliery holding in which the mine is situated;
- (2) For the purpose of subsection (1), the specified width is 20 metres or such other distance as the Minister may specify in a direction given to the owner, the superintendent or the manager of the mine.
- (3) The Minister, on the recommendation of the Chief Inspector, may direct the owner, the superintendent or the manager of a mine to:
- (a) leave in the mine a barrier of such width as is specified in the direction against the mean high water mark of tidal waters; and
 - (b) leave in the mine a protective pillar of such dimensions as are specified in the direction against surface improvements or features, whether natural or artificial, including mine workings, whether discontinued or otherwise.
- (4) In making a direction under subsection (2) or (3), the Minister:
- (a) may fix the width of a barrier in respect of any seam or portion of a seam within a mine and specified in the direction or in respect of all the seams within a mine or all seams within a mine other than those so specified; and

- (b) shall so fix the width of a barrier in respect of any seam so that a barrier of not less than 40 metres shall be maintained between workings of adjacent mines.

(5)

- (6) The Minister may, on the recommendation of the Chief Inspector, grant approval, subject to such conditions as he considers necessary, to the manager of a mine to mine any barrier or protective pillar provided pursuant to this section."

Section 139(1) has no application, and nor does Section 139(3)(a). The Department, in the Argenton area, was not dealing with a mine where the high water mark of tidal waters was relevant. If there is a power to direct a special barrier, it must arise under Section 139(3)(b). However, it will be noticed that Section 139(3)(b), unlike the other sub-sections in S139, uses the term "protective pillar" not barrier. It also refers to "surface improvements or features" as well as "mine workings, whether discontinued or otherwise". The issue arises whether S139(3)(b) is directed rather at surface and underground subsidence.

The Department's submission said this:

"C2.3.3 It is submitted that the distinction between "barriers" and "protective pillars" within section 139 is intentional. The terms are not interchangeable: they describe solid coal structures with distinctly different purposes. In general terms:

- a "barrier" is a defined area into which horizontal encroachment of mining (a kind of subterranean trespass) is prohibited. The primary purpose of a barrier is to maintain a horizontal separation between

the workings (or parts of the workings) of a mine and other mines (or parts of the mine);

- a “protective pillar” is a minimum sized remnant block of coal to provide sufficient mechanical strength to prevent or control vertical strata movement. The detriment sought to be prevented here is subsidence or collapse of surface features (either man-made improvements or natural features such as escarpments) and other features at different levels underground (e.g. mine workings in other seams and in the close vicinity of the current workings).”⁵

The company responded to these words as follows:

- “(c) Paragraph C2.3.3 seeks to distinguish between “barriers” and “pillars”. In our submission any such distinction is one without a difference in the context of safety. The proposition is advanced that “a protective pillar’ is to prevent or control vertical strata movement”. In our submission, that proposition is not supported by the clear words of Section 139(3)(b)..”⁶

The Court accepts the Department’s submission. A special barrier of unworked coal, circumnavigating the Young Wallsend Colliery, which the company had in mind, would not ordinarily be described as a “protective pillar”. It is a barrier. S139(3)(b), by its terms, is concerned with subsidence.

The issue is, therefore, whether the Department should have created a special barrier around the Young Wallsend Colliery as part of the lease conditions. To deal with that issue, and the company’s allegations, it is necessary to set out the history of the lease negotiations.

⁵ MFI 92 p.95

⁶ MFI 95 p.25

3.4 The Lease Negotiations

On 27 November 1989 a discussion took place between the Department (Mr Robertson), and the representatives of various companies which had an interest in the Argenton region. Following that discussion the Manager of The Newcastle Wallsend Coal Company wrote to the Department. The company sought to register its interest in the unallocated area. The survival of the Gretley mine depended upon its expansion into a new area..

On 9 April 1990, Mr Brunton, a Senior Coal Geologist with the Department, was given the following direction by his superior:

"Please investigate and discuss with Newcastle Wallsend, R. W. Miller and FAI Mining, the split of the subject area west of Gretley. Please discuss with Ian Anderson concerning Mining Engineering input." ⁷

Each of the companies referred to in this memorandum had, at some time, identified an interest in the Argenton area. R W Miller (which had since become Coal & Allied Industries Limited) quickly responded, indicating that it was no longer interested in the area. Mr Brunton concluded his investigation by making the following recommendation in a memorandum of 5 May 1990:

"It appears that both N.W.C.C. and F.A.I. have a genuine interest in the subject area, although N.W.C.C.'s need appears to be more critical."

The note continued:

"It is suggested that a fuller assessment of this issue be carried out jointly by representations of C.R.A.B., (Coal Resources Administration Branch) Coal Geology and the Coal Mining Inspectorate, after which a joint meeting with both N.W.C.C. and F.A.I. should be held in order to reach a solution." ⁸ (Parenthesis added)

The assessment having been undertaken, Mr Brunton reported on 20 June 1990 in these terms:

"On the basis of optimal resource allocation and current knowledge of major geological features affecting the subject area, the most logical division of the area is along a northwest - southeast trending line coincident with a fault/dyke swarm transgressing the area (see Plan 1).

The part of the area to the north east of this line would be allocated to Newcastle Wallsend Coal Company (N.W.C.C.) with the remainder being allocated to F.A.I. Mining (F.A.I.)"⁹

Plan 1 depicted the Gretley mine and the Argenton area. Within the Argenton area, the Young Wallsend Colliery was shown as an oval shape, corresponding to the black workings on the original copy mine plan: [Ex.13.63]. The line of demarcation passed directly through the southwestern portion of the Young Wallsend Colliery. Mr Brunton concluded his assessment with the following recommendation, which was supported by his superior:

"It is recommended that the majority of the subject area be allocated to N.W.C.C. (As per Plan 1) in order to alleviate that company's shortage of economically viable resources within Gretley Colliery.

⁸ Ex.21.27A

⁹ ibid

Discussions should be held with N.W.C.C. and F.A.I. to obtain agreement for this proposal, particularly the transfer of a portion of the Stockton Borehole lease from F.A.I. to N.W.C.C." ¹⁰

On 27 July 1990 Mr Anderson wrote to The Newcastle Wallsend Coal Company in these terms:

"re Liaison Meeting between Coal Mining
Companies, the Department of Minerals and
Energy and the Mine Subsidence Board

At the formative meeting of Coal Company executive officers, the Department and the Mine Subsidence Board, held on Thursday, 26th July, 1990, it was agreed to meet with each company group before the end of 1990 and then begin annual meetings, commencing in the first quarter of 1991." ¹¹

A meeting was fixed for 9 August 1990 at the Gretley Colliery. On 31 July 1990 Mr Agnew, the regional manager of the Coal Resources Administration Branch, wrote to The Newcastle Wallsend Coal Company enclosing a copy of the same plan previously forwarded (Plan 1) with the proposed "line of division" through the Argenton area. The letter included these words:

".... the Department has assessed your submissions and has reached a preliminary position on allocation of the area between your company and FAI Mining Ltd. (see attached plan)." ¹²

The liaison meeting was duly held at the Gretley Colliery on 9 August 1990, chaired by Mr Anderson. Mr Anderson identified the purpose of such

¹⁰ *ibid*

¹¹ Ex.21.27

¹² *ibid*

meetings in the following evidence:

- A. ... So, these liaison meetings were set up in Newcastle as a trial. The specific purpose was to bring the company and company officials face to face with the appropriate person in the Department. For instance, if it was a geological problem the geologists, the lease people, the coal administration branch, our mining engineering branch and the inspectors, if necessary, and the senior inspector was to be edged out or literally removed out and that was the way I designed it because I was given the exercise to do it. It was a trial in Newcastle. If it proved to be successful it'd be extended across the state and it was.¹³

Mr Anderson wrote a follow up letter on 13 August 1990, identifying the issues which required resolution. They related to a number of mines. In respect of the Gretley Colliery the issues included the following:

- "ii) Area to be set aside for Gretley (Sept. 1990)
Authorisations granted (February, 1991)
Lease title (December, 1991)

Discussions to take place between J. Brunton, N.W.C.C. and F.A.I. to determine precisely the authorisation dividing line. Meeting to be initiated by J. Brunton.

For follow up of seeking title to area N.W.C.C. to liaise with D. Agnew."¹⁴ (emphasis in original)

Mr Brunton thereafter had the carriage of the matter. A meeting was convened for 21 August 1990. Mr Brunton's file note of that meeting included these words:

¹³ I. C. Anderson T2835

¹⁴ Ex.21.27

"It was agreed that the line through the Teralba Colliery portion of the area be located 20m from the N.E. extremities of the Young Wallsend seam workings and parallel to the N.W. trending fault (see attached plan)."

The memorandum continued:

"The further continuation of the line to the N.W. corner of the Argenton area involved considerable discussion with both companies attempting to fit the line to best suit their proposed mine layouts. A reasonable compromise was reached with Robin Knight and Michael Murray to liaise further to finalise the exact location." ¹⁵

On 3 September 1990 the regional manager of the Coal Resources Administration Branch, Mr Agnew, wrote to the Newcastle Wallsend Coal Company in these terms:

"I wish to inform you that FAI Mining support the division of this area along the boundary proposed by the Department and outlined in our letter of 31st July 1990.

Consequently, upon request from yourselves, the Department will recommend to the Minister that the coal resources in the area be allocated to the Newcastle Wallsend Coal Company and FAI Mining in accordance with the Departmental assessment.

Now that a definite boundary has been determined, it is recommended that you write to the Minister requesting:

1. Approval in principle to be invited to apply for a coal lease over the subject area.
2. The grant of an Authorisation over the subject area under Section 20 of the *Coal Mining Act 1973*, in order to allow exploration to proceed whilst the lease

invitation process is underway.”¹⁶

It is plain that neither the Department (who proposed the boundary), nor the mining company (which accepted the proposal) contemplated a special barrier at that time. Indeed, immediately following Mr Agnew's letter the Manager of Gretley wrote to the Minister in these terms:

“Agreement has been reached between the parties on how best to divide the area and the cross-hatched area on the plan appears to be the most suitable as a potential addition to Gretley Colliery.”¹⁷

However, on 13 September 1990 FAI Mining Limited wrote to Newcastle Wallsend Coal Company (with a copy to Mr Brunton) to suggest a revision of the boundary. The letter said:

“Attached is a plan which defines a possible boundary, ABCD of the currently unallocated area. The definition has been based on the following criteria:

1. Projection of known geological discontinuities.
2. Connection to the corner of Coal Lease 513 (Westside Colliery Holding).
3. Provision of scope to maximise extraction by both companies.”¹⁸

The proposed boundary still passed through the workings of the Young Wallsend Colliery:

A memorandum of 8 October 1990 to the Minister from Mr Agnew included

¹⁶ Ex.94.03

¹⁷ ibid

¹⁸ Ex.21.27

the following passage:

"Recently, at a meeting arranged by the Department, The Newcastle Wallsend Coal Company (NWCC) and FAI Mining (FAI) agreed to the allocation of these coal resources. One final meeting is currently being arranged to fine tune the boundary around some old workings." ¹⁹

On 17 October 1990 the Minister wrote to The Newcastle Wallsend Coal Company. His letter included these words:

"With regard to your request for an invitation to apply for a coal lease, I understand that one final meeting is to be held between yourselves, the Department and FAI Mining to finalise the proposed boundary in the vicinity of the old Young Wallsend Colliery workings. Once this has been achieved I will be prepared to proceed with invitation procedures under the Coal Mining Act 1973 in respect of the subject area." ²⁰

Again, there was no suggestion from the Minister that the carefully worked out arrangements between the parties might be disturbed by the superimposition of a special barrier.

The final meeting between FAI Mining and The Newcastle Wallsend Coal Company to settle the boundary took place on 16 October 1990. A new boundary was agreed. It circumnavigated the Young Wallsend Colliery. Its location was described in a letter from FAI Mining Limited to the Newcastle Wallsend Coal Company of 24 October 1990, as follows:

"As agreed, a 30 metre barrier has been provided against the limit of workings in Young Wallsend Colliery. Together with

¹⁹ Ex.94.03

²⁰ *ibid*

the statutory 20 metre barrier against the external boundary of the Colliery Holding, a minimum of 50 metres of coal will be provided between FAI mine workings and the old workings of Young Wallsend Colliery." ²¹

A copy of that letter was sent to Mr Brunton. On 1 February 1991, the manager of The Newcastle Wallsend Coal Company wrote to the Department (Mr Agnew) in these terms:

"I refer to previous correspondence on this subject and wish to advise that the definition of the proposed boundary between Gretley, West Wallsend and Westside Colliery holdings, as shown on the accompanying plan, is acceptable to us. It is our understanding that your Department and officers of FAI Mining Limited also are in agreement with this boundary position." ²²

Consulting surveyors were retained by the mine to define the boundary, so that the company could seek an invitation from the Minister for the allocation of a coal lease. The plan was furnished to the Department on 21 May 1991.

On 5 July 1991 Mr Agnew wrote to FAI Mining Limited. The letter included these words:

"Now that yourselves and the Newcastle Wallsend Coal Company have agreed on a subdivision of the unallocated area and the "setting aside" has been gazetted, we wish to proceed with the processing of the various titles required as soon as possible." ²³

21 Ex.21.27

22 Ex.94.03

23 Ex.94.03

3.5 The Requisition to Mr Anderson

On 9 December 1991 Mr Filipowski of the Coal and Petroleum Administration Branch directed a memorandum to Mr Anderson in these terms:

"It is proposed to invite The Newcastle Wallsend Coal Company Pty Limited (NWCC) to apply for a coal lease over the area shown by red colour on the attached diagram."

The memorandum continued:

"The subject area presently unallocated lies between the NWCC Gretley Colliery and FAI Teralba Colliery. FAI Mining Limited is interested in the SW part of this land. The geological structure running SE-NW through the area has been chosen as a future natural boundary between both collieries."

Mr Filipowski then identified a series of questions, including the following:

- "1) Are there any objections to NWCC being invited to apply for a coal lease over the subject area?
- 3) Are any special barriers required in respect of the area?
- 7) Are any special conditions required to be included in the proposed lease?" ²⁴

On 12 December 1991 Mr Anderson redirected the memorandum to Mr Cowan, a District Inspector. Mr Cowan responded on 14 January 1992. The answers provided to the questions set out above were as follows:

- "1. There are no objections to NWCC being invited to apply for the lease.
3. There are no special barriers required.
7. No special conditions are required to be included in the lease." ²⁵

Mr Anderson thereafter passed Mr Cowan's response back to Mr Filipowski without comment.

On 9 November 1992 the Department recommended to the Minister that The Newcastle Wallsend Coal Company be invited to apply for the grant of a coal lease. The Minutes making that recommendation included the following words:

"The Senior Inspector of Coal Mines in his within Minute dated 14th January 1992 raises no objection to the grant of a coal lease to Newcastle Wallsend over the subject area." ²⁶

The invitation was issued. Ultimately, a lease was signed on 22 March 1994 [Ex.6.24]. The area leased was the area which the company had sought, and which had been agreed with FAI Mining Limited, and the Department (Messrs Agnew and Brunton).

Before dealing with the company's submissions, it may be helpful to complete the history by referring to the Department's actions in respect of the application by FAI Mining Ltd. Mr Beattie of the Administration Branch wrote to Mr Anderson on 13 April 1992. The letter was similar to that of Mr Filipowski. The questions posed clearly came from a standard set of

²⁵ Ex.21.27

²⁶ Ex.94.03

requisitions. Mr Anderson, as before, referred the matter (21 April 1992) to Mr Cowan. Mr Cowan's response (12 June 1992), in respect of similar questions, was as follows:

- "1. No objections to F.A.I. Mining being invited to apply for the lease.
3. No special barriers are required.
6. No special conditions are required to be included in the proposed lease." ²⁷

An invitation to apply was, in due course, extended to FAI Mining (Coal Lease Application 240) (CLA 240). FAI Mining subsequently withdrew from the area. Before doing so, it reached an agreement with The Newcastle Wallsend Coal Company to provide the company access to the reserves within CLA 240. It nominated the company as the applicant for the lease [Ex.94.02] (24.7.95). In due course a lease was issued to The Newcastle Wallsend Coal Company in respect of this area as well. The boundary so carefully worked out in the protracted negotiations between the parties ceased to have any relevance. It disappeared from the mine plan. The Gretley colliery mine plan continued to show, however, an irregular barrier of 20 metres (along a former lease boundary). The barrier circumnavigated the Young Wallsend colliery on the north-western side, intersecting those workings at one point to the west [Ex.13.57].

Mr Anderson gave the following evidence in relation to the memorandum of Mr Filipowski of 9 December 1991 [Ex.21.27]. He said this:

- Q. Your evidence is, as I understand it, that you had no knowledge of this application because there was

really no need for you to have a knowledge having in mind the system in place at the time?

A. Which application are we talking about.

The cross-examination continued:

Q. I am sorry. The application concerning the acquisition of lease?

A. Yes, I only - I knew that the thing existed and that it was being dealt with by appropriate people in the Department and the appropriate people in the company and that was proceeding independently of me.²⁸

Counsel for the company then addressed the following questions to Mr Anderson (referring to Mr Filipowski's memorandum of 9 December 1991):

Q. Although it does not appear at the top of the page, it seems to be addressed to you?

A. Well the way the system worked was that all officers in the Department, if they had anything relating to a particular district they'd send it to the senior inspector and he would then pass it onto the appropriate person. Unfortunately as a trial for this liaison meeting that we're going on, not everybody in the Department was fully aware of the fact that we're trying to bypass that system. So, I guess that this was addressed to me as a senior, an inspector in the district to pass to the appropriate person.

Q. I see?

A. Presuming that Filipowski didn't know who that appropriate person was.²⁹

Mr Anderson acknowledged that for the purposes of identifying the appropriate officer he would have briefly examined the letter. The cross-examination continued:

²⁸ I. C. Anderson T2843/4

²⁹ ibid

Q. Does this mean, therefore, that you would have rubber stamped it?

A. Yes, I guess that's right. I would've rubber stamped it. I wouldn't have put much emphasis in it at all.

Mr Anderson explained what he meant in the following evidence:

A. ... the senior inspectors were rubber stamping these sorts of bureaucratic administrative things and I was guilty of that offence and that's why I was trying to cut myself out of the system but Mr Filipowski obviously wasn't aware of that. However, it was inappropriate for me then to send it back to him and say, well, look, send it to Mr Cowan or to whoever. So, I sent it on because we were doing a trial. The trial may well have failed. So, to change procedures was, you know, a little bit difficult at the time. So that's what I did, I - I basically rubber stamped it and sent it on.³⁰

The criticism of Mr Anderson by the company appeared to overlook this evidence. The company, when reminded of this evidence by Mr Anderson's submission to the Court (MFI 98 pp.3,8), responded with these words:

"There is no evidence to support Mr Anderson's evidence, with its self interest, to the effect that the matter referred to him for report by the Department was not his responsibility. Mr McKensey's evidence to which he refers, does not support his contention."³¹

The Court accepts Mr Anderson as a truthful witness. His evidence incidentally does not require corroboration or support before it can be accepted. As it happens, however, there is support for his evidence. Counsel for the Department did not cross-examine Mr Anderson to suggest

³⁰ I. C. Anderson T2845

³¹ MFI 99 p.3

that his account of the Department's procedures was wrong. The company did not cross-examine Mr Cowan in respect of the issue. A number of Senior Inspectors were called (Messrs. Abbott, Flett and Morgan). Each, no doubt, was in a position to describe the procedures followed by the Department. No attempt was made by the company, or by anyone, to contradict Mr Anderson's account. Mr McKensey, in fact, did confirm Mr Anderson's evidence relating to the system, although he had no knowledge of its application in the context of lease approval (T8359). There is some force, therefore, in the following submission made on behalf of Mr Anderson:

"It must be said that if, at the time of this cross-examination, it was known that the evidence would be used at a later time to mount an attack on Mr Anderson's competence, it is likely that a great deal more evidence might have been led about the Department's administrative systems. However, the questioner's apparent acceptance of Mr Anderson's description of the system must have caused all, at the time, to consider that such evidence would be unnecessary. No other party questioned Mr Anderson on this issue." ³²

The company's attack upon Mr Anderson rested also upon another footing. It was said that Mr Anderson had certain special knowledge, which should have prompted his intervention, in any event. The special knowledge was said to arise, first, from his awareness of the potential for inaccuracy in old plans, and secondly, from his association with the Young Wallsend Colliery sporadically in the years preceding the Filipowski memorandum.

The submission was unpersuasive. The company repeated the submission in another context, and it will be dealt with more fully in that context. Unquestionably, Mr Anderson was a well qualified mining engineer,

[Ex.21.1], and was knowledgeable. However, his assertion that a mining engineer should be alert to the possibility of inaccuracy, and even gross inaccuracy, in old plans, was no more than a statement of common sense. Under the *Coal Mines Regulation (Methods and Systems of Working - Underground Mines) Regulation, 1984*, the mine manager has an obligation to gather in plans and information as a preliminary to formulating a strategy to prevent inrush (Cl. 8). That Regulation, and obligation, will be dealt with more fully below. It is an obligation which has been imposed precisely because history demonstrates that there is uncertainty as to the location of old mines. Their location must be carefully investigated. Until the investigation has been undertaken, one cannot know the degree of uncertainty. It may turn out to be minor. It may, on the other hand, turn out to be significant. Mr Anderson was saying no more.

Nor did Mr Anderson have any special knowledge of the Young Wallsend Colliery before 9 December 1991 (the Filipowski memorandum) [Ex.21.27], which should have prompted his intervention. On 2 April 1991 (six months earlier) Mr Anderson had inspected the shafts of the colliery with Mr Ryan, a District Inspector. However, that inspection had nothing to do with the dangers of underground mining. The purpose was identified by Mr Anderson in the following evidence:

- A. With Mr. Hewson we inspected the shafts. The purpose of the inspection was to - for Mr. Hewson, I understand, council or the developer - I think it was the council were proposing to rezone that land and the shafts were on it

Mr Anderson's evidence continued:

... He told me that the shafts weren't filled and we discussed the matter and believed that if there was

residential area to be proposed that the shafts should be filled. We then discussed how that should go about and he took that information away.³³

The suggestion that Mr Anderson failed in his duty to direct a special barrier around the Young Wallsend Colliery is therefore rejected.

3.6 Should there have been a Special Barrier?

The issue remains whether Mr Cowan should have recommended a special barrier? Mr Kininmonth, a former Senior Inspector with the Department, saw the failure to impose a special barrier as a "missed opportunity" (T3161/2). Mr Adam, a surveyor, took a similar view (T8481). The company suggested, that Mr Cowan "did not properly address the issue" (MFI 91 Vol.2 p.317 para.14.6.29).

The company made the following submission, (referring to the memorandum of 9 December 1991 and Mr Cowan's response):

"7.21 Mr Cowan, a District Inspector of Coal Mines, was cross-examined on this "report"."³⁴

That submission was not accompanied by transcript references. The Court believes it to be wrong. Though Mr Cowan was called as a witness, his attention was not drawn by the company (or by anyone) to Mr Filipowski's memorandum of 9 December 1991, or his response. The company did not suggest to Mr Cowan in cross-examination that he was at fault in failing to identify the need for a special barrier. Yet, in fairness, that criticism should have been put. Mr Cowan, it is true, was called shortly before Mr Anderson

³³ I. C. Anderson T2727

³⁴ MFI 91 Vol.1 p.125 para.7.21

was cross-examined. However, if the matter had been overlooked, and it was believed to have substance, the company should have sought Mr Cowan's recall. The criticism of Mr Cowan should not have appeared for the first time in submissions.

The difficulty which the company's approach creates for the Court can be readily demonstrated by reference to the evidence. If a special barrier, imposed for reasons of general safety (as opposed to the circumstances identified in Section 139(3)) were in contemplation, one would have expected that issue to have been addressed before the Department suggested to the parties a particular boundary, and before the parties entered into protracted negotiations concerning the precise location of that boundary. Here, the matter having been agreed, and the parties having been told by the Minister that an invitation would issue reflecting that agreement, an officer responsible for drawing up the lease sent a standard requisition to the mines inspectorate, including a question as to whether a special barrier was required. That sequence rather suggests that the Administration Branch was seeking guidance on Section 139 so it could select and complete the appropriate standard conditions of the lease. If that were so, then it would be quite unfair to criticise Mr Cowan for responding in the terms he did. It may, of course, still be appropriate to criticise the Department for needlessly circumscribing the use of special barriers by reference to Section 139. That, however, is a different issue, and one which the company chose not to explore in the course of public hearings.

Mr Cowan was, in any event, entitled to take account of the course of negotiations which preceded his involvement. The negotiations began with the Geology Branch suggesting a particular barrier. At first the parties agreed to that suggestion. Then FAI proposed a different barrier. It also

passed through the Young Wallsend Colliery, but followed a different path. That suggestion, however, was unacceptable to The Newcastle Wallsend Coal Company. A further meeting was convened, and a new barrier determined. The new barrier circumnavigated the Young Wallsend Colliery approximately 50 metres to the west. The circumstances were put to Mr McKensey, the Chief Inspector for his comments:

Q. And he is confronted by a situation where the parties have already met and themselves to some extent address the issue of how the Young Wallsend Colliery itself should be handled?

A. Yes.

Q. And in the case of FAI, on their side of it, what is to be their side of it once they get the lease, there is to be a boundary which follows the perimeter of the outline which appears on Mr Knight's plan at 50 metres, except in one area where it cannot do so?

A. Yes.

Mr McKensey's evidence continued:

Q. Yes. But, see you can see can you not that the parties having themselves determined where the boundary of the lease should be and themselves located that boundary on one side so that the Young Wallsend Colliery would be wholly within the area which is to be applied for by Newcastle Wallsend company - - -?

A. Yes.

Q. ... - that the occasion for a ...special barrier, would not arise?

A. Yes. ³⁵

Mr McKensey's evidence on this aspect is accepted.

The barrier ultimately agreed between the parties placed the Young Wallsend Colliery (according to the plan being used) wholly within the lease

area of The Newcastle Wallsend Coal Company. Mr Anderson's submission included the following:

"Newcastle Wallsend in its consideration and evaluation of the boundary location saw it as appropriate to include the Young Wallsend Colliery within its lease, with no protective or separating barriers. This decision by the Company was the solution it offered to the Department and hence the Minister as an appropriate and acceptable standard for resolution of the lease allocation." ³⁶

The company might have asked the Department to exclude the Young Wallsend Colliery from its lease, in which case the Department would have been obliged to determine a lease boundary around the old workings. It chose however, not to do so. Indeed, it sought to exclude F. A. I. Mining, its neighbour, from the area which included the Young Wallsend Colliery. The Newcastle Wallsend Coal Company, no doubt, had its own reasons for taking this course. It may, at that point, have recognised the need to drain the workings, and the opportunity which this afforded to maximise resource recovery by leaving a somewhat smaller barrier to prevent the intrusion of gas into the mine. It may, on the other hand, have recognised the opportunity to incorporate the shafts of Young Wallsend Colliery into the ventilation system of the Gretley mine. Ventilation was a problem at Gretley [W. R. Flett Ex.73.01 p.27 para.65], and consideration was given to the use of the shafts to improve airflow. Thought was also given to mining through the old workings to recover the substantial coal which non-mechanised extraction methods had left behind [F. J. Van Dijk Ex.56.01 p.10 para.44]. Mr Cowan was entitled to take the view that the inclusion of the old workings within the Gretley lease was a considered and rational response by the company. The imposition of a special barrier may

unnecessarily have circumscribed the evaluation of options by the company. There would, moreover, be a further opportunity to evaluate the company's strategy in the future. The company would be obliged to submit an application to the Department under Section 138 of the *Coal Mines Regulation Act 1982*, seeking approval to extract coal from the area. That application would be examined on its merits by the Department. The Court, therefore, rejects the Company's criticism of Mr Cowan.

Although Mr Cowan's response may have been reasonable in the circumstances, was the failure of the Department to impose a special barrier, nonetheless, a lost opportunity? Before a special barrier could be rationally drawn, the Department would need to determine the extent of the workings (B. McKenney T8235). Where one is dealing with an old mine full of water, which is therefore, inaccessible, determining the extent of the workings may be difficult; indeed, it may be impossible. The Department could, no doubt, closely examine the plans (RT 523, sheets 1, 2 and 3) and form a view. It may follow the document trail, and decide that the extent of the workings is uncertain. Any special barrier drawn in such circumstances will be arbitrary. The degree to which it is arbitrary will no doubt depend upon the degree of uncertainty. A warning from the Department to the mine, based upon its research, would, in such circumstances, be rather more useful than a special barrier.

So the issue is whether the Department, when allocating a lease, should undertake research into old workings within the area to be leased for the purposes of giving a warning, if that is appropriate? The Court hesitates to offer a view, since the whole subject of special barriers received little attention from anyone, including the company, in the course of evidence. However, Mr Anderson made the following useful suggestion of a mandatory barrier (by way of warning) around old workings the location of

which is uncertain:

- Q. What do you say should be provided for in relation to barriers?
- A. Well, it may well be advantageous to extend the categories of which barriers currently are prescribed. At the moment barriers exist between colliery holdings, around certain underground and surface interfaces. It may well be that we should include a mandatory barrier around known or suspected old workings and incorporate any considered industry safe practice in that form of legislation.
- Q. Would you be bold enough to nominate the width of the barrier should be provided for?
- A. No, I think that would be appropriate for perhaps an industry committee to consider the whole range of views.³⁷

The Court will return to this issue when formulating recommendations to the Minister.

The Court is now in a position to examine the research undertaken by the Gretley mine before it depicted the Young Wallsend Colliery.

4 DEPICTION OF THE OLD WORKINGS

4.1 Introduction

It is now obvious that the plan being used by the Gretley Colliery on 14 November 1996 was wrong. The error was the same as that made by the Department when creating sheet 3 (the top seam sheet) [Ex.13.22]. It was assumed that the Young Wallsend Colliery operated in two seams. It was further assumed that the oval shape outline, corresponding to the black workings on the original copy mine plan [Ex.13.63], were the workings in the Young Wallsend Seam (being the seam from which the Gretley Colliery was extracting coal).

A number of issues arise. What was the basis upon which the Gretley Colliery depicted the workings of the Young Wallsend Colliery on its mine plan? What research was undertaken before that depiction? Was that research adequate, judged by the standards of prudent surveying and mining practice, and given that the context was the prevention of inrush?

4.2 The Duty of the Mine Manager to Prevent Inrush

The *Coal Mines Regulation Act 1982* defines the role of the mine manager in broad terms. He has "full charge and control" of "all operations at the mine" (S37(1)(d)). The mine manager's obligations include the following:

"37(2)(d) Ensure that officials of the mine are in **possession of such information and plans** as are necessary to enable those officials to ensure that all operations at the mine for which they are responsible are carried out in a safe manner;

(h) Take such steps as may be necessary to ensure that at all times **he is in possession of**

.... **all available information regarding**
disused excavations **or workings** in the vicinity
of the mine;" (emphasis added)

The Act includes a general power to make regulations, not inconsistent with the Act (S174(1)), as well as the following provision:

"174(2) In particular, but without limiting the generality of subsection (1) the regulations may include provision for or with respect to:

- (u) the requirements to be observed and the precautions to be taken in mining:
 - (i)
 - (ii) near any place or strata which is likely to contain a dangerous accumulation of gas or water or material that flows when wet;"

Pursuant to that power the *Coal Mines Regulation (Methods and Systems of Working - Underground Mines) Regulation, 1984* has been introduced. Part 3 of those Regulations is headed "PREVENTION OF INRUSHES". That Part contains four clauses, identified by the following headings:

- Clause 8: Manager's duties
- Clause 9: Bore holes
- Clause 10: Workings in the vicinity of peat, moss, sand etc.
- Clause 11: Mining under waterbodies

Clauses 10 and 11 have no application in the present context. This Chapter will deal with clause 8. It will also touch upon clause 9, although that clause will be considered more fully in a later Chapter.

Clause 8 of the Regulation is in these terms:

"Manager's duties.

8. (1) The manager of a mine shall ensure, in respect of every working in the mine, that such steps are taken as may be necessary to prevent any inrush into the workings of flammable or noxious gas from disused workings (whether mine workings or not) or of water or material that flows when wet (whether from disused workings or from any other source).
- (2) The manager of a mine shall take such steps as may be necessary to ensure that the manager is at all times in possession of such information as would indicate or tend to indicate the presence in the vicinity of any workings carried on, or proposed to be carried on, in the mine of -
 - (a) any disused excavations or workings (whether mine workings or not).
 - (b) any rock or stratum containing or likely to contain an accumulation of water which may endanger the workings or proposed workings; or
 - (c) any peat, moss, sand, gravel, silt or other material that is likely to flow when wet.
- (3) In fulfilling the duties imposed by subclause (2), the manager of a mine shall have regard to such information as may be available from the Department or the Department of Mineral Resources in addition to any other information available to the manager."

The clause contemplates a progression through a number of phases (R. A. Knight T6822). First, there is the research phase. There is, under the Regulation, as there is under the Act (S37(2)(d) & (h)), a heavy emphasis upon the manager being in possession of the facts relating to the matters specified in Clause 8(2). The Department of Mineral Resources is recognised as a crucial source of information (clause 8(3)). The manager is obliged to obtain such information as it may have available.

The second phase requires an analysis by the mine manager of that information (".. the manager of a mine shall have regard to such information ..") (clause 8(3)). The aim of the analysis is the formulation of a strategy which will prevent inrush. The duty upon the mine manager is expressed in absolute terms ("the manager of a mine shall ensure .. such steps are taken as may be necessary to prevent any inrush") (clause 8(1)). The submission made on behalf of the relatives of the deceased miners said this:

"An underlying premise of the legislation is, it is submitted, that inrush is avoidable, preventable by the taking of necessary steps in a particular case. There can be no case of unavoidable/unforeseeable inrush for the reason that the legislature has imposed a requirement that inrush be avoided absolutely and that any strategy adopted will produce a certain result." ¹

The quality and completeness of the information about the old workings will, no doubt, influence the strategy. In some cases it may suggest that the elimination of the hazard, by draining the old workings, is the only strategy which will prevent inrush. In other circumstances a suitable barrier of unworked coal may be enough. Whatever the plan, the manager is obliged to ensure that it is implemented, and that it works ("shall ensure .. steps are taken as may be necessary to prevent any inrush") (clause 8(1)).

In fulfilling these obligations the mine manager may, no doubt, enlist the aid of others. The mine surveyor is likely to be involved, since the research phase is likely to include the examination of plans. However, responsibility remains with the mine manager. In this respect the New South Wales legislation reflects the same philosophy as its English counterpart. The

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1927 Report of the Water Dangers Committee in the United Kingdom reported in the following terms on this aspect:

“Evidence was brought before us recommending that direct responsibility under the Coal Mines Act should be placed upon the Surveyor, and that the appointment of the Surveyor should be notified to the Divisional Inspector of Mines in the same manner as that of the manager is now done. We are unable to support this suggestion. We believe it to be contrary to the spirit and intention of Section 2(1) of the Coal Mines Act 1911. The responsibility for the provision of plans rests upon the owner, agent or Manager by Section 20 of the Coal Mines Act 1911. The Manager is responsible for the control, management and direction of the mine, and the Surveyor is in turn responsible to the Manager for the accuracy and completeness of his work. **The supervision and direction of the Surveyor’s work must be part of the Manager’s duty and responsibility.** We are unable therefore to find that any good purpose would be served by varying the existing statutory requirements in this respect.”²
(emphasis added)

4.3 The Research Phase

Two sources are fundamental, and should be consulted during the research phase:

- First, the Department of Mineral Resources, whose role as the repository of mine plans and other information, is recognised by clause 8(3) set out above.
- Secondly, neighbouring collieries.

Mr D. Adam, a surveyor, who gave expert evidence, said:

"1. I would be looking for a plan which was as close to the original mine plan as could be obtained.

2. Before computers there was one mine plan - the main mine plan. It was the official working document within the colliery, drawn 2 chains one inch (44 yards to the inch). That plan could be expected to have the maximum amount of survey information."

Mr Adam emphasised the need to examine the original. He added:

"4. Every transcription is liable to create errors. Every copy from the plan, therefore, is suspect. Copies from copies become progressively less accurate. I would, therefore, be looking for the original...."

5. I would therefore go to the charting branch of the Department of Mineral Resources and ask to see everything they have in relation to the mine.

6. I would not be looking for a copy of the original, but the original itself. If the original is manually traced, there is the possibility that something will be missed, or mistranscribed. If it is photographically reproduced, there is the possibility that something will be lost in terms of definition either in the ink or markings on the plan."³

The original mine plan for the Young Wallsend Colliery has been lost. The Department of Mineral Resources has a copy of the mine plan, taken by one of its inspectors, Mr Herbert Winchester, on 21 March 1892, and updated from time to time thereafter [Ex.13.63]. That copy is "as close to the original mine plan as" can be obtained [Ex.86.04 p.1 para.1]. The plan has been described already (supra Chapter 2). The workings are depicted in a number of colours, principally black and red. There are a number of pencil comments, including a very faint but important comment to which

reference has been made (*supra* p.149). The plan, in short, demonstrated the validity of Mr Adam's approach. Important information is lost in reproductions of the plan (see Ex.13.14 and Ex.13.62).

Since the Young Wallsend Colliery had been abandoned, one would expect to find an Abandonment Plan. The Abandonment Register should, therefore, be consulted. Mr K. Price, the Chief Surveyor of the Oakbridge Group (which includes Gretley) said:

"63. To the best of my information and based on my experience, there are no set guidelines for researching old workings. Assuming a need to plot old workings, without the benefit of hindsight, I say that I consider it good practice to undertake the following:

- (a) Check whether a copy of the Record Tracing and, if appropriate, Plan of Abandonment is already in one's possession. If not, request the Department of Mineral Resources for a copy of the Record Tracing or Plan of Abandonment."⁴

Mr Knight emphasised the importance of the calculation books maintained by surveyors. He said this:

- A. Well, I would feel that as a mining plan is formulated it would be wise to try and obtain as much information as possible and as I mentioned before, I think it would be wise to try and at least view the original record tracing and certainly if they are available, obtain field notes or survey records, if they are available.⁵

The *Water Dangers Committee* in the United Kingdom, in its Report in 1927, made the following observation in respect of such records:

⁴ Ex.58.03 p.25 para. 63

⁵ R. A. Knight T6779

"Survey books, in which the details of surveys are recorded as the surveys proceed, are by no means so carefully preserved as the plans which are plotted from them. We think it desirable they should be preserved. They would form a reliable source of information, as a record of facts, not liable to error from wear and tear and shrinkage, and would provide a useful check when required." ⁶

4.4 The Analysis Phase

Having obtained whatever plans are available, these clearly must be closely examined. Mr Price described the focus of the examination in these words:

- "(b) Once plans obtained check detail:
If mine no longer worked, check for:
 - (i) notation of plan of Abandonment or Discontinuance;
 - (ii) date lines and Surveyor's signature or initials;
 - (iii) survey information, traverse lines, connection to portion boundary, levels, survey stations.
- (c) If these details are found then plan could be accepted as accurate. However, verification of connection of entries i.e. drift or shafts should be obtained, if possible, either from survey information, other sources or by survey.
- (f) A visit to the Department of Mineral Resources to view the original plans to confirm all details may be required if any questions have arisen." ⁷

If there was no note of abandonment or discontinuance, or an absence of date lines and the Surveyor's signature or initials, or if there is an absence

⁶ MFI 91 Vol. 3 Report p.6

⁷ Ex.58.03 p.26 para. 63

of survey information, the procedure recommended by Mr Price was described in these words:

- “(g) (i) Gather information through (neighbouring collieries, previous leaseholders, or the Mine Subsidence Board)
- (ii) Assume that the plan may not be charted to date and unrecorded workings may exist”⁸
(parenthesis added)

Any examination of the original mine plan or tracing must be directed towards three fundamental issues:

- First, is there survey information from which the precise location of the mine can be determined, in terms of its relationship to surface features?
- Secondly, has the plan been accurately drawn, with appropriate survey information?.
- Thirdly, is the plan complete, and up to date?

In the case of the Young Wallsend Colliery, the first issue can be put to one side. The plans available to the Gretley Colliery at the time it added the Young Wallsend Colliery to its mine plan will shortly be described. Amongst those plans was a plan drawn by Mr Knight dated 19 August 1980. Mr Knight was then the Group Surveyor and Property Officer with BHP Collieries. Before drawing the plan, Mr Knight examined the copy mine plan for the Young Wallsend Colliery [Ex.13.63]. It made reference to portion boundaries “as defined by Mr Mining Surveyor E. Thomas plan M14136”. Mr Knight obtained that plan [Ex.13.42]. He was able to verify Mr Thomas’

survey in respect of the location of the shafts, and an underground roadway [Ex.13.19]. It was entirely appropriate for the mine surveyor at Gretley, Mr Michael Murray, to accept Mr Knight's survey as accurately identifying the location of the Young Wallsend Colliery.

The second and third issues are more complex. They will be considered in turn.

4.5 The Accuracy of the Plan

The age of a plan is relevant to its accuracy in a number of ways. First, there have been refinements to surveying equipment over time. Technological advances have improved accuracy, as described by Mr Price in his statement:

"43. The accuracy of survey plans in the mining industry is, to some extent, a function of when they were prepared:

I would regard a survey plan prepared in the 1990's, as more accurate than a survey plan prepared before the introduction of total stations in the 1980's.

I would regard a survey plan prepared after the introduction of electronic distance measuring equipment in the 1970's, as more accurate than a survey plan prepared before the introduction of such equipment.

I would regard a survey plan prepared after the introduction of microptic equipment in the 1950's as more accurate than a survey plan prepared before the introduction of such equipment.

I would regard survey plans prepared using Vernier theodolites as being more accurate than survey plans prepared before that time, when only miner's dials

were available.”⁹

Mr Price added:

“44.

The only differences in accuracy which I would expect based upon the date of preparation of survey plans would normally be differences of a minor nature. Based on my experience, I would not expect there to be any significant inaccuracies in survey plans since the introduction of theodolites, no matter when they were first prepared.”¹⁰

Accuracy is only one issue. The new equipment reduces the scope for error. Whereas in the past it was necessary to make laborious calculations, that process is now largely performed electronically.

The second way in which the age of a plan is relevant relates to the qualifications of the person who drew the plan. It was not until 1 January 1933 that there was a requirement for the mine plan (and tracing) to be certified by a qualified surveyor (*Coal Mines Regulation Act 1912, S39A* introduced in 1931 by Act number 52 of 1931, S10(a)). Before 1933 a plan may have been drawn by a person with qualifications, or it may not. The Young Wallsend Colliery, of course, operated long before 1933. The copy mine plan [Ex.13.63] came into existence on 21 March 1892. The last date on the plan is 4 April 1912.

The company made the following submission relevant to this aspect:

⁹ Ex.58.03 p.17 para. 43

¹⁰ Ex.58.03 p.18 para. 44

- “(i) There is no indication that the plan has been drawn by a Surveyor:

We submit that this is not an indicator of inaccuracy. The requirement that the plans be so certified, Section 39A of the 1912 Act, was introduced in 1931, to be effective from 1933. (Exhibit 6.41)”¹¹

Mr Knight gave the following evidence:

- Q. I will ask you to assume that this is a colliery which is known to have been worked in the 1890s and the early 1900s and that therefore the surveyor is no longer alive or the person who is responsible for the plan, whoever he may be, he may be a surveyor or not, is no longer alive to consult?
- A. Yes.
- Q. Is that an important issue?
- A. Well, it is from the point of view that surveys, as you say, weren't necessarily carried out by the surveyor, I have known stories where surveys were carried out by the colliery clerk or the deputy, so yes I mean the age of the plan certainly has a bearing on the degree of competency placed on it.¹²

Mr Knight later added the following:

- Q. Yes, and is there any indication on the plan itself, that is sheet 1, that any part of it has been drawn by a surveyor?
- A. Not that I can see, no.
- Q. Is that important?
- A. Not really. As I think I mentioned yesterday, I have heard reports of a ... clerk preparing a ... plan, that was the sort of thing that could have been done in those days and I would have - I just have reservations about plans of that nature and that, of course, has

¹¹ MFI 91 Vol.2 p.302 para.14.5.8

¹² R. A. Knight T6782

been confirmed with further experience I have had subsequent to my dealings with Young Wallsend Colliery that plans of that age just cannot be relied upon.¹³

The Acting Principal Surveyor of the Land Titles Office, Mr G. M. Wallis, was called to give evidence. Mr Wallis is an above-ground surveyor, not a mining surveyor. The view of his branch of the profession to old plans was described in these words;

- Q. But can I ask you this, in relation to plans generally and their reliability is there any distinction between plans produced by different surveyors of different eras?
- A. There is no doubt that plans that were produced prior to 1929 certainly were not done with the same accuracy as they were after 1929 because that is when registration of surveyors came in. Plans that were done pre to about 1890 when the Gunter's chain was used were not very reliable either.¹⁴

Mr I. C. Anderson compiled a helpful summary of the comments of a number of authors on various aspects of mining practice when approaching old workings. The texts are mainly English, and some of them are quite old. In respect of the accuracy of old plans, the following appears:

- “1. “... plans of old workings are so frequently inaccurate and incomplete that they can never be depended on ...” - Bailes p.29
2. “... the intention to use every possible precaution may be defeated by the inaccuracy of old plans” - Bailes p.31

¹³ R. A. Knight T6805

¹⁴ G. M. Wallis T6638

3. "... plans of old workings can seldom be relied upon for any degree of accuracy" - Boulton p.337
4. "... inaccurate plans can be a source of danger ..." - Mason p.311
5. "... the reliability of old plans is very limited ..." - Harris p.224
6. "... a safety margin of about 50 yds ... around (the old workings) to allow for inaccuracy ..." - Harris p.174
7. "Again, in working near old workings, a barrier is left of quite sufficient distance (according to the plans), until a sudden holing or an inrush of water proves that such barriers exist (merely on paper). Old plans should never be depended upon ..." - Bailes p.37 ¹⁵

The company, in its submission, drew attention to a change in the law in the United Kingdom in 1887, which provided a context for the use of the expression "old plan". Harris, for instance, said this:

"Plans made before 1887 should not be regarded as accurate"

The Company added:

"It is submitted that the corollary is that plans made after 1887 would be prepared accurately." ¹⁶

The Company, therefore, made the following submission:

"Taken in this context, therefore, the texts do not support the proposition that simply because the plan of the Young Wallsend Colliery is "old", it is inaccurate in any gross

¹⁵ Ex.21.05

¹⁶ MFI 91 Vol.1 pp.223/4 para.11.2.1

sense."¹⁷

Elsewhere, in the same submission, the Company traced the development of the law in both England, and New South Wales, (MFI 91 Vol.1 p.49ff). In May 1854, a Committee of the House of Commons formulated a code of special rules, including the following:

"The Owner or Manager should cause to be made up and signed by a competent Surveyor a plan of the workings at least once every six months."¹⁸

The rule was introduced the following year (18 & 19 Vict.10). The 1896 Act in England extended the requirement to Abandonment Plans. They too were required to be certified by "a Surveyor or other person approved in that behalf by an Inspector of Mines". (MFI 91 Vol.1 p.54).

In the Second Report in 1909 of the Royal Commission on Coal Mining 1906, the Commissioners reported as follows:

"... although as early as 1850 owners were required by the Coal Mines Act of that year to keep plans of the underground workings, mine surveying does not appear to have reached a high level until a later period", and that, "most of the witnesses representing the Mining Association and the Colliery Managers admitted that the accuracy of old plans left much to be desired, but were generally in agreement that mine surveying then stood in a different level, and that the plans of modern collieries were prepared by competent men".¹⁹

¹⁷ MFI 91 Vol. 1 p.224 para. 11.2.3

¹⁸ MFI 91 Vol.1 p.50

¹⁹ MFI 91 Vol.1 p.55 para.A.1.19

The 1927 Report of the *Water Dangers Committee* said this:

"The reliance which may be placed on old plans is limited. In all the evidence placed before us, the uncertainty as to the accuracy of old plans and the need of special precautions in approaching workings shown on them were unanimously emphasised by the witnesses. Plans of the workings in mines were not required by law to be kept prior to 1850. In fact there have been extensive workings of which no plan or records have been preserved in any form. In many cases plans were not systematically added to and completed until the Coal Mines Act of 1872 was passed." ²⁰

The position in New South Wales, however, is very different. The Company, in its submission, drew attention to the Royal Commission 1895, conducted the year before the introduction of the 1896 Act (60 Vict No. 12). The Company said this:

"The 1895 NSW Royal Commission made no recommendation that either mine plans or abandonment plans, although required to be accurate, needed to be certified by a Surveyor. That was notwithstanding that such Commission was abundantly aware of the fact that mine plans in England had been required, since 1855 to be "made up and signed by a competent Surveyor" (at least once every six months until 1887 and thereafter every three months) and that the English Bill which was to lead to the 1896 English Act included provision for abandonment plans to be certified by a Surveyor." ²¹

As previously mentioned, it was not until 1931 that the law changed in New South Wales (by the introduction of S39A of the *Coal Mine Regulation Act 1912*). From 1 January 1933 all mine plans, and abandonment plans in this State were required to be certified by a qualified Surveyor.

²⁰ MFI 91 Vol.3, Report p.6

²¹ MFI 91 Vol. 1 p.83 para.B.4.12

The company made the following submission:

"In our submission, it is clear that in New South Wales, the legislature must be taken to have taken the view until 1931 that, although it did not require certification of plans, as did England in 1911 (following the 1909 Royal Commission Report)... , the standard of plans being produced in New South Wales between some time prior to 1909 and up to 1931 were such that, having regard to the New South Wales experience, certification of plans by Surveyors was not necessary in the interests of safety." ²²

The Court does not accept the submission. The suggested inference cannot be drawn. If it could be drawn, why was it that in 1931 certification by surveyors was introduced? It was surely because it was recognised that it was desirable in the interests of accuracy, and therefore, safety. The delay in New South Wales taking that step is more likely to have been associated with questions of practicability. It would be pointless to require certification by surveyors if there were not enough surveyors to service the mines then operating in the State. The long lead time for the introduction of S39A (between 1931 and 1 January 1933) would tend to support that view.

A number of conclusions can be drawn from this material. First, as the company suggests, the reference to "old plans" in English texts is probably a reference to plans which were drawn prior to 1887. However, in respect of plans drawn in England between 1887 and 1911 their acceptance as an accurate representation of the mine was (according to the Report of the *Waters Dangers Committee*) subject to the important qualification that "the history of the surveying of the particular mine is satisfactory."

Secondly, in respect of New South Wales, "old plans" are those prepared before the insistence upon qualifications, which began in January 1933. Such plans must be treated with caution. They may or may not be based upon a survey carried out by a qualified person, and the preparation of the plan may or may not have been supervised by a qualified person.

Putting to one side the fundamental issue as to what the different colours (the black and the red) in the mine plan referred to, and ignoring the faint pencil note on the plan, which suggested that the red workings were in Young Wallsend Seam, what emerges from a close examination of the old plan? [EX.13.63] The black workings were the critical workings from the viewpoint of the Gretley mine. They were the workings assumed to be in the Young Wallsend Seam, which was the seam being worked by the mine. In respect of those workings there were significant signposts of inaccuracy. They ought to have been recognised, and they ought to have caused the colliery to approach the plan with a good deal of circumspection. The important matters are these:

- . First, unlike the red workings, there are no dates on the black workings.
- . Secondly, there is no survey information in respect of the location of the faces.
- . Thirdly, Mr Adam (though not other surveyors) was immediately suspicious of the symmetry of the black workings, which stood in contrast to the red. He said this:

"Another aspect which would make me suspicious is that the black workings show the main roadways and all the other workings to be very regular in shape and alignment. It is an idealised or stylised plan, rather than an accurate survey plan. In contrast, the

superimposed red roadways show more detail of deviation. In this respect it is consistent with general working practice in an era of hand working. That would also make me think that someone would have been dissatisfied with the idealised plan, and caused the area to be re-surveyed.”²³

Finally, there were problems in the depiction of the south-eastern corner of the workings. Mr Adam said this:

“Assuming that the top of the plan is towards the north, the workings in the south eastern region between the two sets of headings do not make sense. Approaching the area from the southern most headings, those sections which indicate solid coal represent open roadways when approached from the northern most headings. This could suggest that the survey information was in error or incorrectly interpreted by the person who drew the plan.”²⁴

Mr John Walker, a mine surveyor, said this:

Q. The plan is manifestly wrong in at least the four areas that you have marked, agreed?

A. Yes.²⁵

Mr Barrington Walker, the former Chief Surveyor for R W Miller & Co. Pty. Ltd., gave the following evidence:

Q. And you would expect any reasonable surveyor, acting properly, would have found those problems with the plan, would you not?

A. Yes, to pick them up.

²³ Ex.86.04 para.9

²⁴ Ex.86.03 para.8

²⁵ J. B. Walker T7672

- Q. And once the surveyor had picked them up he would have wanted to carry out further research, would not he?
- A. Yes, but I doubt he'd get any answers.²⁶

Mr Robinson, the mine surveyor at Gretley at the time of the inrush, produced a version of the top seam sheet which sought to make sense of it [Ex.62.13]. However, when cross-examined on that document, he gave the following evidence:

- Q. If you do not make those adjustments then you can get a completely different result, is not that right?
- A. You can but I believe as a mining person, looking at that plan, a mining person knows where roadways are where roadways finish by looking at a plan and it's quite easy to come up with the, I believe, the interpretation of that plan that I have produced for you.
- Q. Does not that mean that the person who drew it was not a mining person?
- A. Not necessarily. It may mean that that person made a mistake, it does not mean he wasn't a mining person.
- Q. Made a mistake, made one, two, three mistakes or maybe four. You have got to ignore two lines and you have got to add two, is not that right?
- A. Yes, there's more than one mistake, I haven't counted them.²⁷

Mr Robinson acknowledged that his draft was his "first uncorrected guess" as to where the lines should be (T9303). If he gave the matter further thought, he could come up with other solutions, by adding or ignoring other lines (T9303).

²⁶ B. M. Walker T8003

²⁷ M. Robinson T9283

The company's submission repeatedly stated that the plan of the Young Wallsend Colliery was accurate at the point of inrush (MFI 91 Vol.1 p.3 para.2.1.3). So it was. The point of inrush corresponded almost exactly with the eastern extremity of the red workings. However, the same cannot be said for the black workings. The drilling programme undertaken since the inrush has demonstrated that the plan of the black workings is quite inaccurate. Where one would have expected a void, according to the plan, solid coal was found. Voids were found where none had been charted on the plan (compare Ex.13.22, top seam sheet, with the drilling programme (Ex.89.03); P. I. Maddocks (T8392)).

Further, any examination of the old plan [Ex.13.63], for the purposes of determining the accuracy of the black working, cannot ignore the red workings. The depiction of the red workings, likewise, suggested a number of problems:

- First, the shape of the red workings is odd (two arrowheads, connected by a number of single roadways)(cf Ex.61.04 p.28 para.101)). It is obviously incomplete. The roadways show openings to cut-throughs, but no more. It would have been impossible to ventilate the workings simply from the roadways shown (D. Adam Ex.86.04 p.3 para.12).
- Secondly, the incomplete nature of the workings is the more obvious because of the pencil comments attributed to the Chief Inspector (18 January 1963). The plan includes a number of pencil lines, which presumably represent the Chief Inspector's surmise as to the extent of workings not shown on the plan.
- Thirdly, the opening for the airshaft on the red

workings does not coincide with the airshaft on the black.

- Fourthly, the plan shows a roadway to the north, and at the end of the roadway a date, 4 April 1912. An adjacent pencil note is difficult to read, but certainly includes the following words: (cf Ex.91.02)

"Staple bottom seam
62' "

The red roadway, however, extends considerably further than any black roadway in the vicinity. It is also drawn to a different alignment. There is no staple shaft shown in the black workings (or on sheet 3, which reproduces those workings).

There is another aspect to which attention should be drawn. It affects the entire plan [Ex.13.63]. The portion boundary has been drawn twice. The first boundary was found to be incorrect, and was re-drawn by Mr Mining Surveyor, E. Thomas on Plan M14136. The plan is so inscribed [Ex.13.63]. The mistake is disturbing. One cannot know whether the person responsible for it was also responsible for depicting some of the workings.

The company responded to these matters by suggesting that the shape of the red workings was not unusual for a hand-worked longwall (MFI 91 Vol.2 p.357 para.15.4.15). Even were that so, the fact remains that the plan does not depict, as it should, the coal extracted. One is left to guess the limits of the workings.

Mr Price thought that the explanation for the incomplete depiction of the

red workings was as follows:

- A. I've looked at this plan, obviously and some length and - and my interpretation of that is and would have been that the workings in the seam below - in other words, the workings in the red, were omitted for clarity.²⁸

However, that cannot be the explanation. The mine was obliged to have an accurate mine plan. It would hardly be a satisfactory discharge of that obligation to omit large sections of one seam. If they had been omitted for clarity from the red workings, why not also from the black? According to that logic, one might reasonably assume that the black workings extended over the red, but had been omitted for clarity. To construct a mine plan upon that basis would be bizarre, when it could have been avoided by simply having separate sheets.

Mr Price (T5319), and Mr Porteous (T8985) were prepared to assume that the staple shaft had been driven at an angle, or was incomplete. However, the separation between the Young Wallsend Seam and the Borehole Seam at the central shaft was 61 feet. The pencil note beside the word "staple" said "62' ". A staple shaft ordinarily connects one seam with another. One would, therefore, expect such a connection to be shown in both sets of workings. Its absence in the black workings ought to have disturbed a surveyor examining the plan.

Taking into account all these matters, what, prudently, should have been the response of a surveyor? Mr MacLeod, a mine manager and a surveyor, gave the following evidence:

- Q. Just so as I understand that answer. You are agreeing with the proposition that the arrowhead seam sheet contains manifest omissions. You are agreeing with that?
- A. Yes.
- Q. Are you agreeing with the proposition that because the arrowhead seam sheet contains manifest omissions, that would cause a reasonable surveyor to have alarm when looking at the football shaped seam sheet? That is what you are saying, is it?
- A. Yes.
- Q. Once that alarm had been caused, a reasonable surveyor acting properly would have had to have undertaken further research to try to clarify the position. Agree?
- A. Yes.²⁹

Mr Adam's conclusion, having examined RT 523 sheets 1, 2 and 3 was as follows:

"The variation and inconsistencies of the workings shown on the two plans identified as "Young Wallsend Workings Top Seam" and "Young Wallsend Workings Bottom Seam", are such that as a practicing surveyor, I would have grave doubts about the accuracy of the information contained on these two plans."³⁰

Having dealt with the question of accuracy, the remaining issue is whether the plan is complete, and up to date?

4.6 Up-dating of the Plan

There is the statutory obligation to ensure that the mine plan is brought up to date every three months, and the further obligation, in the case of

²⁹ I. F. MacLeod T7800/1

³⁰ Ex.86.03 p.6

abandonment, to file a plan of abandonment within the same period (supra p.103). The Minister then has an obligation to preserve such plans.

Now, in the case of the Young Wallsend Colliery, there was no plan of abandonment. As already mentioned, (supra p.130) a person critically examining the Abandonment Register, and the copy mine plan to which it referred (then marked M18914), should have recognised that it was not a Plan of Abandonment. That being so, what assurance is there that the copy mine plan [Ex.13.63] is a complete record of all work undertaken? Is one able to exclude the possibility of unrecorded workings?

The issue was put to Mr J. E. H. Romcke, he being the mine manager of Gretley in September 1994, when it sought permission to mine in the vicinity of the Young Wallsend Colliery. His evidence was as follows:

Q. But you would recognise the possibility, surely, that the mine, at some stage, was surveyed; at some stage, was abandoned or ceased operation and then at a very much later stage, was declared abandoned and that somehow or other the Department came into possession of this plan, you would not know from that series of facts whether or not the date of the last survey coincided precisely with the date of abandonment, would you, or the date upon which operations ceased, you would not know that?

A. The whole purpose of having a plan and a register of abandonment is to - so that you can make those assumptions. I don't think, no, I don't agree with you.³¹

This passage was quoted with approval in the company's submission. It was followed by a statement in these terms:

"We submit that it is logical, that if there was a requirement, as there was, at the time to maintain a mine plan up to date not more than three months previously, then once three months, or more elapsed after ceasing operations, the plan would be up-to-date as at the date of ceasing operations."³²

The submission continued:

"We submit that the starting point in the perception of a Mine Surveyor or anyone else, inspecting the plan before the accident, is, by virtue of the matters above, that the plan is both up to date and accurate and provided to the Department by the mine. No witness was asked to give an opinion on his inspection of the plan from that perspective."³³

These submissions are rejected. It is not logical to assume that statutory requirements to update the mine plan have been fulfilled. Indeed, the fallacy inherent in that approach is demonstrated in the case of the Gretley mine itself. For various reasons, which will be examined later in this Report, the Gretley mine was unable before the inrush to comply with a number of important statutory obligations under the *Coal Mine Regulation (Survey and Plan) Regulation, 1984*. One was the obligation to produce a mine working plan every three months (Clause 13(3)(a)). The other was the obligation to furnish the Department with a Record Tracing of that plan every six months (Clause 14(3)). The default began in August 1995 (T9100). It was not remedied until February 1997, three months after the inrush (T9100). The Record Tracing held by the Department during that time was not up to date. It would be both unwarranted and dangerous for the mine surveyor to begin his examination of the mine plan with an assumption that because there are statutory obligations they have been fulfilled.

³² MFI 91 Vol.2 p.300 para.14.5.4

³³ MFI 91 Vol.2 p.301 para.14.5.6

In the absence of a precise understanding of the legislative requirements at the time the Young Wallsend Colliery ceased operations, one would expect that present day requirements for an Abandonment Plan would condition the thinking of a surveyor undertaking research into the old colliery. *The Surveying and Drafting Instructions for Coal Mine Surveyors (Underground) 1984* include the following provisions in respect of plans of abandonment or discontinuance:

4.1 Plan of Abandonment or Discontinuance

- (a) Upon the abandonment or discontinuance of a mine or seam the colliery working plan and the record tracing shall be charted to date of abandonment or discontinuance.

The Chief Inspector shall make the record tracing available to the mine for such charting to be carried out;

- (b) the note "charted to date of abandonment or discontinuance" as the case may be, is to be shown in the schedule of certification of accuracy beneath the date and surveyor's signature;" ³⁴

Where there is a plan of abandonment so inscribed, the surveyor can, no doubt, assume that the workings are up to date. But that is not this case. There was simply the copy mine plan (M18914) [Ex.13.63]. It said nothing about abandonment. It gave no indication that the workings had been brought up to date before discontinuance or abandonment.

Mr Knight, after a careful examination of the plan, said:

- A. ... Well, firstly the plan itself is not the original. It is the record tracing and as such there would have been

original mine working plan and as you pointed out yesterday that is in fact noted on the bottom left-hand corner of the plan that it is a copy of the working plan. So somewhere there is an original and it may be possible that the original plan could have other notations on it, I don't know that. There are two issues that are important to me with regard to the plan. Firstly is that **I can't see any survey information on that plan whatsoever**, so as a result of that - well, there is certainly indications that beyond the notations of a chief inspector that the plan is incomplete there is other evidence on the plan that suggests to me that **there is no guarantee that there aren't further workings in either seam**. As an example of that in a couple of spots I think the rooms, the actual (bords), there is only one rib line shown in one particular location. **There is a reference to a staple shaft and the two seams don't connect to one another**. That also suggests that there may have been further workings that are not shown on the plan. There are (bords) shown I think in the red seam, if I could describe it as such, that are shown dotted - dotted rib lines - which also suggest that there are further workings in the seam. So that in itself leaves some doubt about the completeness of the plan. The other issue that I believe is significant with the plan is the reference to - there is Cadastral information on the plan and there is quite a **considerable amount of confusion there with regard to the position of those workings relative to the Cadastral boundaries** which would again would lead me to have some concern about the accuracy of the plan. The lack of survey information just supports the fact that the information that was prepared by surveyor Ed Thomas was far more important in establishing the location of the workings but as far as Ed Thomas' work was concerned it could only establish the position of the shafts and the immediate underground pit bottom workings, it could not establish the face position of the workings.³⁵ (emphasis added)

In cross-examination Mr Knight acknowledged there was some survey information on the plan (shaft depths, portion boundaries, dates in the case of the red workings; T7401/2). However, this was not survey information that would permit him to determine that the plan was up to date. Mr Knight said this:

- Q. But even taking into account such survey information as may be on exhibit 13.63 does it change your view in respect of the confidence you would have as to whether it is up to date and reliable?
- A. Not at all. The only qualifier that would be - and I did refer to it previously as Mr Strathdee, is it?
- Q. Yes?
- A. ... made reference to a Lands Department reference I did make a comment that that would be a reference that would be worth pursuing.³⁶

In answer to Mr Hall QC (for the relatives of the deceased miners) Mr Knight said:

- Q. In other words, it is not grey matter upon which minds might differ, it is in your judgment something about which mine surveyors would be uniformly in agreement, that is, as to accuracy (and) completeness upon a proper examination they would come (to) the firm view that there is doubt arising as to accuracy and doubt arising as to completeness of that plan?
- A. Yes, I believe so.³⁷

It was appropriate therefore, that the copy mine plan [Ex.13.63] should have been regarded with suspicion. The possibility of unrecorded workings should have been recognised. Further, had the surveyor noticed the

³⁶ ibid T7452

³⁷ ibid T6866

inscription on the 1:4,000 seam sheet, suggesting that the last workings were in 1928, (supra p.173) [Ex.13.17] his misgivings about the plan may have been increased.

4.7 The Extent of Possible Unrecorded Workings

Mr Anderson gave evidence as to the precautions which a mine should take, as a matter of prudence, where its examination of the plan suggests the possibility of unrecorded workings. He drew attention to Clause 9 of the *Coal Mines Regulation (Methods and Systems of Working - Underground Mines) Regulation, 1984*, which is in these terms:

"Bore Holes.

9. Where any workings in a mine approach within 50 metres of -

- (a) a place which is likely to contain an accumulation of water or material that flows when wet and which may endanger the workings;
- (b) a place which is likely to contain an accumulation of flammable or noxious gas which may endanger the workings; or
- (c) disused workings which have not been examined and found to be free from any accumulation of water, material that flows when wet or flammable or noxious gas which may endanger the workings,

there shall be constantly kept at a sufficient distance in advance of the workings, not being less than 10 metres, at least one bore hole near the centre of the workings and sufficient flank bore holes on each side of the workings."

Mr Anderson gave the following evidence:

- Q. That suggests that when you are 50 metres from an area which is likely to contain an accumulation of water, just staying with water for a moment, then you must begin drilling?
- A. Yes.
- Q. How does one relate that to this particular development?
- A. If you had to determine that you have a barrier of 50 metres you must be able to fix (in) space the end points of those barriers and unless you can do that you cannot have confidence that your barrier is in fact 50 metres. It might be 70 metres or it might be 30 metres or it might be one metre, it might be 100 metres. It is a case that you have to resolve with a degree of certainty where the old workings are before you can establish that you have got a 50 metre barrier, so it is a problem, as to where you start to drill to determine your 50 metres. If you go out 100 metres and the workings are out 101 metres then you are in trouble if you select that as your start point for your drilling. So it is a conundrum for people to determine when to drill to try and satisfy the uncertainty about the old workings.

His evidence continued:

- Q. How do you resolve the conundrum?
- A. It would be preferable if you had had personal experience of this particular problem. If you haven't got personal experience, and I suggest that most people that I am aware of wouldn't have, you would try and gather the experience of somebody that has.. If that is not possible or you do not know anybody you have got to refer to the literature, use that as a guide but also try and develop some form of logic as to how you would go about it.³⁸

Mr Anderson's survey of a number of texts included the following:

"DRILLING WHEN TO COMMENCE FROM OLD WORKINGS

1. "... 70 to 80 yds" - Whittaker and Willett p.219
2. "... 150 yds" - Harris p.174
3. "... 200 yds.." - Boulton p.337
4. "...a safety margin to be placed around the old plans (to allow for inaccuracy) and a possible advance during the 6 month RT period..." - Harris p.194"³⁹

The last quotation (from Harris) contained an error. The text in fact reads as follows:

"A line giving a margin of safety should be designed on the plan ... to allow for inaccuracy of the plans and a possible advance of the workings during a three months' period."⁴⁰

The same summary prepared by Mr Anderson included two further passages which are relevant:

"RELYING UPON A BARRIER BUT NOT DRILLING

1. "... a barrier of coal to be left ... for safety ... but to prevent disaster through unexpected holing, it is advisable to bore as the workings approach the barrier ... " - Bailes p.29
2. "... a long borehole should be kept in advance of the workings. This would ensure greater safety when approaching old workings heavily charged with water." - Bailes p.37"⁴¹

A list of examples of inrush, associated with inaccurate plans, was

³⁹ Ex.21.05 p.2

⁴⁰ Ex.21.05

⁴¹ Ex.21.05 p.3

compiled by Anderson. It was as follows:

- "1. South Elswick Colliery - UK - 45 yds - Bailes p.31
2. Audley Colliery - UK - 80 yds.
3. Royton Mine - UK - 100 yds - Bailes p.39
4. Newvale Colliery - NSW - 18 m.
5. West Wallsend No.2 colliery - NSW - 26 m.
6. Blue Mountains Colliery - NSW - 17 m.
7. Lykens No.6 Mien - US - 65 m.
8. No.5 Mine, Grays Knob - US - 23 m." ⁴²

Finally, to elucidate the possible extent of inaccuracy, Mr Anderson made certain calculations, as he explained in the following evidence:

- Q. Well in fact I think you have made an analysis based upon an assumption that mining may have continued after the lodgment of the last record tracing?
- A. Yes, I have.
- Q. That is exhibit 21.7, and you might just explain that analysis?
- A. Yes, the analysis is based upon the assumption that I was taught whilst I was a student that it was possible, particularly with old plans, for workings to continue beyond the period of the survey. so if you make the worst case assumption, that is that the survey was conducted and it was accurate and that there is six months between survey record tracings of that period what would be the possible advance of a single entry or a single roadway be if people mined at a certain rate, at a certain width, at a certain height for a certain length of time up to the six months period. Whether you did it one shift a day or two shifts a day you can start to get a measure of the possibility of there being errors in the old workings with unrecorded workings as to whether it is 50 metres or 100 metres or whatever ..." ⁴³

⁴² ibid

⁴³ I. C. Anderson T1680/1

The calculations suggested that the workings may extend between 86 metres (one shift per day) and 172 metres (two shifts per day) [Ex.21.7]. As a guide to advance drilling that would suggest the following points from which drilling should begin, according to Mr Anderson:

- Q. But assuming 86 metres which is the one shift for six month period at 120 days, I think you said, does one add the barrier to that?
- A. Well if you assume that .. is the possible extent of error, yes, you would have to add 50 metres onto that so you are looking at 136 metres.
- Q. And if one assumes the worst case as you described it, maybe two shifts then one obviously has a figure substantially in excess of that?
- A. Yes, 222 metres.⁴⁴

The company responded to this evidence in a number of ways. It addressed certain arguments as to the merits. It also mounted a personal attack upon Mr Anderson. The Court will put to one side, for the time being, the personal attack, and deal with the merits.

The company pointed to the evidence of Mr Pala, a former mine manager at Gretley, which was in these terms:

"Prior to the events of 14 November, 1996, I accepted the accuracy of survey plans provided by the Department of Mineral Resources or plans produced by the Department from survey plans held by it. That was always our position and I believe the view of the mining industry, up until the inrush itself."⁴⁵

Mr Pala enlarged upon that statement in the following evidence:

⁴⁴ ibid T1681

⁴⁵ Ex.57.04 p.18 para.93

- A. Well, .. let me put it to you this way? At the same - sure, I would have thought that there would have been some inaccuracies but at the same time that's what the 50 metre barrier contemplates.
- Q. Well, let us deal with it step by step? I rather gather from your answer that you would have contemplated the possibility that plans may be inaccurate?
- A. Yes.
- Q. But you think that 50 metres would cover any such contingency?
- A. Yes.
- Q. Why bother looking at plans, if that is right?
- A. I beg your pardon?
- Q. Well, why would you require your surveyor to undertake research into the issue of the location of the old workings if you think that 50 metres will cure everything?
- A. You need to know where you're going to lay out your mine workings so that you can safely mine.
- Q. Right. So, the first plan you come across which gives a location and an outline, that is the one you use, is it? And you lay it out 50 metres from there?
- A. If I have a plan from the Department that is a record tracing, yes.⁴⁶

Mr Price had a similar understanding. In circumstances where the surveyor could not be satisfied that the plan was up to date, he advised the following:

- "(ii) Assume that plan may not be charted to date and unrecorded workings may exist. In the extreme case, this may involve 3 months mining. My understanding is that the old 40 yard distance for the narrowing of driveage and drilling ahead in the Coal Mines Regulation Act, 1912, Section 52, Rule 13, constituted an estimated distance a hand worked mine should advance in 3 months, which was revised in the later legislation to 50 metres."⁴⁷

⁴⁶ J. A. Pala T5680/1

⁴⁷ Ex.58.03 p.26 para 63

Nor were these views confined to Messrs. Pala and Price. A number of witnesses gave similar evidence. The company's submission to the Court was framed, *inter alia*, in these terms:

"The examples from New South Wales, ranging from 17 to 26 metres, are well within the range of possible inaccuracy contemplated by the regulations on "drilling ahead"" ⁴⁸

Mr Anderson's view (and those of other witnesses who gave similar evidence) was dismissed as the product of hindsight (MFI 91 Vol.1 p.237 paras.12.1.4 & 12.2.10).

The Court accepts that a sizeable number of individuals within the mining industry assumed before the inrush that the 50 metre Borehole Rule (Clause 9) offered adequate protection against inadequate plans. Indeed, the history of the Borehole Rule provides some foundation for that view. The *Water Dangers Committee* in its Report in 1927, included an historical note (Appendix I) (MFI 91 Vol.3). The note referred to the *Coal Mine Regulation Act 1887* (UK), and the amendment which it introduced, in these words:

"For the first time a distance or thickness of a margin or barrier of solid ground is prescribed, namely, forty yards, and it is curious that no mention of this distance is made in either of the reports of the Royal Commission, or in the evidence of the witnesses before the Commission. It is probable that the distance was inserted, not as indicating the thickness of a barrier that would be safe under all circumstances, but rather as a precaution against errors in old plans or surveying." ⁴⁹

However, it is a distortion of that rule to regard it as a panacea against all

⁴⁸ MFI 91 Vol.1 p.226 para.11.3.1

⁴⁹ MFI 91 Vol.3, Report p.19

errors in old plans, whatever the circumstances. Each case must be looked at on its merits. It is manifestly foolish, even without hindsight, to do otherwise. Indeed, it is instructive to look at the approach of the United States to the same problem. A commentary by the Federal Register upon the US equivalent of the Borehole Rule (which requires drilling from 200 feet i.e. approximately 60 metres) is as follows:

"However, it is important to note that the distances specified are the minimum at which drilling must begin if there is reasonable confidence in the position of the old workings. The distances specified provide a safety factor to account for slight mining overruns, mapping errors, small deliberate omissions, and similar factors in cases where the position of the old workings are known with reasonable certainty. In cases where old workings are known to exist but the position is unknown or known with little confidence, drilling would be necessary in excess of the minimum distances specified in (a) to assure compliance with the standard." ⁵⁰

Within the small sample of witnesses called to give evidence there was significant experience of inaccurate plans. They were not inaccuracies that led to inrush. However, they underlined the wisdom of Mr Anderson's approach, which was essentially a mix of commonsense, and caution. The evidence was as follows:

Witness	Reference	Old Colliery	Discrepancy
Hartley	T138	Swansea	30 m
Kininmonth	T1760/1	Dudley	44 to 66 yards
Tapp	T3980	Nymboida	400 m
Knight	T6760-2	Red Head	30-40 m
Walker B	T7921	Aberdare	100 m

Further, in dealing with the hazard of inrush, there is no warrant for confining one's focus to New South Wales, as suggested by the company. There are lessons for NSW in the overseas experience, which it ignores at its peril.

A surveyor approaching the old plan in respect of the Young Wallsend Colliery, therefore, should have taken account of the following:

- First, it was not the original mine plan, but a copy.
- Secondly, there was no plan of abandonment.
- Thirdly, it was an old plan, not signed, not certified, and drawn at a time when it may or may not have been prepared by someone with qualifications or experience in surveying.
- Fourthly, there were no survey books from which the plan might be verified.
- Fifthly, nothing was known of the history of surveying at the mine.
- Sixthly, there were puzzling and anomalous features in both the black and red workings.
- Finally, there was nothing on the plan to indicate that it was up to date.

4.8 The Attack upon Mr Anderson

Attention has been drawn to a misquotation in Exhibit 21.05, which was prepared by Mr Anderson. Mr Anderson's extract from the textbook by Harris contained a reference to "6 month RT period" instead of simply "three month period". In respect of that mistake, the company made the following submission:

"With respect, we submit it should be found that the doubling of the figure was a typographical error." ⁵¹

It is ironic that this statement contains a typographical error. The Court assumes from what follows that the company is urging the Court not to find that the doubling of the three month period was a typographical error. Rather, it should find that it was deliberate. The company elsewhere said this:

"In later questions to various witnesses, Counsel Assisting, no doubt on Mr Anderson's instructions, referred to the substitution of "6 month" for "three months" as a typographical error. With respect, it is submitted that it should be found that this aspect of the misquotation was deliberate by Mr Anderson, to attempt to gain authoritative support for the basis of his calculation in Exhibit 21.07. In addition, the explanation of a typographical error does not account for the insertion of "RT", there being nothing on the original to support such an insertion. We submit that this insertion by Mr Anderson is an improper attempt by him to cloak his calculation with authority." ⁵²

In the conclusion to its submission the Company made the following statement:

"His evidence, we submit, should be found to have been deliberately misleading and intended to shore up his view that anything less than 50 metres was inadequate." ⁵³

To underline this grave charge, the company added the following:

⁵¹ MFI 91 Vol.1 p.239

⁵² MFI 91 Vol.1 p.248 para.12.1.43

⁵³ MFI 91 Vol.2 p.482

"In view of the gross and in some cases deliberate inaccuracies in his evidence, we submit that his evidence on other matters should be given little weight unless supported by the evidence of other witnesses." ⁵⁴

The submission lodged on behalf of Mr Anderson responded with these words:

"Exhibit 21.05 contains 3 typed pages of quotations from numerous sources and also relevant photocopied sections of the sources where the particular original material has been highlighted for attention. It is submitted that the notion Mr. Anderson deliberately misquoted one of the sources (Harris) and then attached the original document with highlighted text as part of Exhibit 21.05, showing the difference is completely implausible." ⁵⁵

A further submission lodged on behalf of Mr Anderson drew attention to the purpose for which the exhibit was originally created. It said:

"As to the insertion of the letters "RT" the same comment applies but, of course, there is the added factor that Ex 21.05 was a document designed for educational purposes when dealing with a person who did not have a technical background in geotechnical engineering or mining. The suggestion that the inclusion of the letters "RT" was intended to mislead should not, in my submission, be accepted." ⁵⁶

These submissions, unlike those of the company on the subject, are couched in language of moderation such as is expected of Counsel. The company's submissions are extravagant. They reveal an attitude to Mr Anderson's evidence which is extraordinary in the circumstances.

⁵⁴ ibid

⁵⁵ MFI 98 p.36

⁵⁶ MFI 100 p.24

By reason of the strong and unwarranted attack upon him and the unsubstantiated allegations made against him, the Court feels it necessary to state that it rejects the aspersions cast against Mr Anderson's character and professional reputation and to state unequivocally that his evidence, rather than being found to be deliberately misleading, and containing deliberate inconsistencies, is accepted as having been given honestly with every proper endeavour to assist the Court. The attack upon him does no credit to those who make it and is rejected. It should never have been made and, in the Court's view, it is especially reprehensible because it was not put in terms to Mr Anderson by Counsel for the company as required by the law and practice of the Courts in this State. (cf. MFI 100 pp.4-9)

The company chose further to respond to Mr Anderson's reply to its submission (MFI 99). It would have been wise to have withdrawn the allegation. Instead, the company asserted that Mr Anderson had not dealt with the fact that the error had been repeated when he gave sworn evidence (MFI 99 p.11). Perhaps Mr Anderson did not deal with that issue because the explanation was obvious. The typographical error caused Mr Anderson to make a mistake. He readily acknowledged the mistake when his attention was drawn to the full text which he had annexed to the summary (T2811).

4.9 Consultation with Adjacent Collieries

The collieries next to the Gretley lease were, on one side, the Wallsend Borehole colliery, and to the west, the West Wallsend Colliery. The Wallsend Borehole Colliery ceased operations in 1988, and was ultimately acquired by The Newcastle Wallsend Coal Company (which operates Gretley) in 1992 (MFI 91 Vol.2, p.270). It had been operated by R. W. Miller & Co. Pty. Ltd.

Mr Tilden, the mine surveyor at Gretley, attended the office of R. W. Miller in December 1992. He took delivery of a number of plans, including the mine plan, and record tracing for the Wallsend Borehole mine [Ex.74.01 p.3]. The record tracing included an outline of the Young Wallsend Colliery [Ex.13.20]. The colliery was depicted as the oval shape, consistent with the black workings in the copy mine plan [Ex.13.63]. The Wallsend Borehole record tracing was certified by the mine surveyor, Mr John Walker [Ex.13.20; Ex.13.67].

What significance should attach to the certification of accuracy by a mine surveyor? There was a divergence of views. To understand the differing views, an appreciation of the obligations upon the surveyor is necessary. The surveyor's duties are identified in Clause 8 of the *Coal Mines Regulation (Survey & Plan) Regulation, 1984* ("The Survey and Plan Regulation"). The duties include the following:

"Duties of mine surveyor"

8. A mine surveyor shall -

- (f) prepare or supervise the preparation of, all plans, drawings and sections required to be prepared or kept by this Regulation or the Surveying and Drafting Instructions **and shall certify the accuracy of all such plans,** drawings and sections in writing thereon;" (emphasis added).

The plans required to be kept are identified in Clause 12. They include the mine working plan. The Survey and Plan Regulation, and the Surveying and Drafting Instructions for Coal Mine Surveyors (Underground) 1984, (Instructions) together describe the contents of the mine working plan, although, curiously, in the Instructions, it is called the Colliery Working Plan. Clause 13(2) of the Regulation is in these terms:

"13. (2) The mine working plan shall consist of -

- (a) in the case of an underground .. mine, a separate plan for each seam being worked in the mine showing the information specified in subclause (3);"

Clause 13(3) identifies the following information which must be included in the separate plan for each seam:

"13. (3) The mine working plan shall show -

- (a) all current workings of the mine in the seam or seams of the mine up to a date not more than 3 months before the making of the plan;
- (b) any workings of the mine in the seam or seams which are abandoned, discontinued, disused or worked out;
- (c) any current workings .. of any other mine and any abandoned .. workings of any other mine located within a distance measured horizontally of 100 metres outside the boundaries ..;
- (d) such workings or goaf areas in the seam or seams of the mine as contain or are likely to contain an accumulation of water or gas which may be a danger to the mine or part thereof;
- (e) ...
- (f) in the case of an underground mine, all shafts, outlets, drifts or staple shafts from, to or within the mine; and ..."

Clauses 13(3), (a), (b) & (d) each deal with the mine of the surveyor completing the plan. Clause 13(3)((c)), however, deals with an adjacent colliery (either operating or abandoned), which is within 100 metres of the lease boundary.

An issue arose as to the proper construction of Clause 13(3)((b)). That Clause was the source of the obligation upon Gretley Colliery to depict the

Young Wallsend Colliery. The mine erroneously believed that the Young Wallsend Colliery had worked two seams, the Young Wallsend Seam, and the Borehole Seam. Was there, in these circumstances, an obligation to depict the Borehole Seam workings on the same sheet as workings in the Young Wallsend Seam? Opinions differed amongst those called to give evidence. The mine working plan for Gretley only showed the workings in the seam which was being worked, namely the Young Wallsend Seam. It showed, therefore, the outline of the black workings, the oval shape. It did not include the more extensive red workings (the two arrowheads with connecting roads).

The inclusion of both sets of workings on the one sheet, no doubt, has the potential to confuse (which is evident, indeed, in the old mine plan [Ex.13.63]) However, certain plans before the Court overcame that difficulty by simply including the dotted outline of the extremity of workings in the other seam. Had that course been followed, in the case of Gretley, it may have triggered a recognition of danger when water was ultimately observed in the mine shortly before the inrush. The water was noticed at a time when the mine had almost reached what was erroneously believed to be a point above the workings in the lower seam (which, in fact, of course, were in the same seam). These are matters which will be dealt with later in this Report.

Clause 13(3)((b)), by the use of the expression "seam or seams which are abandoned", creates an obligation to depict both seams. Clause 2.5(c) of the Instructions requires the inclusion upon the colliery working plan of the name of the seam worked, and the name of other seams known to have been worked within the sheet. The Colliery Working Plan, and the record tracing, must be drawn in the form of a plan which is Annexure A to the Instructions. Annexure A obliges the surveyor to include the following

information:

"SEAM NAME

Other Seams Within Sheet." ⁵⁷

The Court is not critical of the surveyors at Gretley for their failure to depict the lower seam. The misconstruction of Clause 13(3)((b)) of the Survey and Plan Regulation appears to have been widespread.

The Instructions include the following clause: [Ex.30.1]

"2.6 Certification The surveyor shall certify the accuracy of the plan in accordance with the provisions of the Coal Mines Regulation act, 1982, and the surveys shown on the plan have been completed by him or under his immediate supervision to a standard equivalent to the standard set out in the Manual of the New South Wales Integrated Survey Grid.

The plan shall be certified in the schedule of certification of accuracy on the plan after each quarterly survey is charted on the plan.

If two or more sheets comprise the plan then the certification on one sheet of the plan shall be deemed to be a certification for all sheets.

Where the position of the workings is in doubt the plan shall be suitably endorsed."

Clause 9 of the Survey and Plan Regulation is relevant to the transition from one surveyor to his successor. It says this:

"Liability of mine surveyor limited

9. Notwithstanding any provision of this Regulation, a mine surveyor shall not be liable for the accuracy of surveys carried out or certified by a former surveyor for the mine or surveys certified as correct by another surveyor."

Attention should also be drawn to the following obligation upon the surveyor under the Survey and Plan Regulation:

"8.(g) where the mine surveyor has any doubt as to the accuracy of any plans, drawings or sections of the mine not prepared by the mine surveyor, or under the supervision of the mine surveyor, which may have an effect upon the working and operation of the mine or the safety of persons at the mine, draw such doubt to the attention of the manager of the mine;"

These being the obligations, what reliance can another surveyor, acting prudently, place upon information which appears within a mine working plan, or record tracing certified by the mine surveyor? One can immediately appreciate that there are significant differences between the following situations:

- First, workings which are depicted as a consequence of surveys undertaken by the surveyor who is providing the certification.
- Secondly, the depiction of workings at the same mine, which is the work of some other mine surveyor at an earlier point in time.
- Thirdly, the depiction of workings of an abandoned colliery, which is inaccessible and, therefore, cannot be surveyed.

Mr Price, the Chief Surveyor of the Group which includes Gretley, said:

- Q. Well, what I am saying is this, that though it may be prudent for you to obtain the record tracings of adjacent mines and to examine them closely, surely you recognise that hazard, that is the possibility of error in their reproduction of various things, so that you independently examine issues yourself?
- A. You .. examine issues but as I've said if there is a record tracing certified by the surveyor at a mine you rely on it, that is part and parcel of the industry.
- Q. Yes. Well, and what I put to you as a refinement on my proposition, is that you as the surveyor, having taken the trouble to obtain record tracings from adjacent collieries, would recognise the distinction between the workings of that mine which have been surveyed and certified for by the surveyor as opposed to some other mine not surveyed by that colliery, but long since abandoned, you would recognise that difference, surely?
- A. I would recognise the difference, however, if it is a certified mine plan or mine record tracing and there's no notation of any description on it, I .. that has been the history of the industry in the time that I've been in the industry. If there's a record tracing that someone has certified, you rely on it, you work .. you work mines with .. a chain barrier on each side and you .. under the old Act which was 40 yards you relied on a record tracing.⁵⁸

When cross-examined, Mr Price added:

- Q. How widespread do you find in the industry is this reliance on certification by prior surveyors?
- A. I would've said it was industry wide. I may be corrected on that but that's my belief.⁵⁹

Elsewhere Mr Price said this:

⁵⁸ K. Price T5389

⁵⁹ ibid T5484

- Q. See, the problem is this, is it not? That unless the surveyor undertakes his own examination of the issue as to how one should interpret sheet 1, then errors by others in resolving that issue might simply be perpetuated?
- A. If .. on a record tracing you're entitled to rely and you do rely - that's part and parcel of the operation, you rely on record tracings, you rely on the depiction of other mine surveyors on their mine working plan or record tracing.
- Q. I am not suggesting that you do not seek them out and examine them closely, but what I am suggesting is that surely in that examination you are conscious of the fact that if it is simply a case of follow the leader then without an independent examination an assessment by each individual surveyor, then an error by the leader will be perpetuated down the line, is not that right?
- A. .. as I said, you .. rely on other surveyors' work and certification. You can look at issues yourself as well, but you rely on other people, that is the .. nature of the industry in terms of surveying, that if .. you have a certified mine working plan or you have a record tracing you rely on it.
- Q. Yes. But see, I can well understand that if you have a record tracing of the Wallsend Borehole Colliery by a surveyor who has surveyed a particular area and put his signature to it, that is one thing, but insofar as he incorporates into the record tracing something which he has not surveyed but which is derivative from other documents, then that is another, can I suggest?
- A. Not .. if he has certified a mine plan or a record tracing he has not put any notation, .. that is it, it's a definitive document, he's signed it, you .. rely on it.⁶⁰

Mr Price gave the following evidence, referring to the information available to the surveyors of adjacent mines:

- Q. So that you can see readily, as a matter of logic, that to use other depictions by other persons when they

have had access only to the same material that has given rise to doubts in your mind is itself illogical?

The question was objected to, but allowed. The evidence continued:

Q. You can see the illogicality of that?

A. With the benefit of hindsight certainly. ⁶¹

The views of Mr Price were shared by a number of witnesses. The submissions on behalf of Mr Porteous, the Mine Manager at Gretley at the time of the inrush, were summarised by his Counsel in these words:

"Mr Porteous believed that he could rely upon certified plans as being correct because he believed that a surveyor would not place workings on a record tracing unless they were accurate or unless there was notification on the plan as to possible inaccuracy." ⁶²

Accordingly, Mr Porteous believed he was entitled to rely upon the record tracing of the Wallsend Borehole Colliery [Ex.13.20] prepared by Mr John Walker, and indeed, the record tracing of Gretley, prepared initially by Mr Tilden, and then by Mr Murray (MFI 88 p.52 paras.4.29, 4.31).

Mr Walker, on the other hand, having certified the Wallsend Borehole record tracing, understood himself to be doing something less than vouching for all information on the plan. He said this:

A. My understanding of certification is that I was certifying my surveys, surveys conducted under my supervision, for - and plans drafted therefrom for the time as specified in the certification block.

⁶¹ ibid T5498/9

⁶² MFI 88 p.52

- Q. In relation to the Young Wallsend Colliery, did you understand yourself to be certifying the accuracy of that plan?
- A. No, I did not.
- Q. Why was that?
- A. Because the surveys were not conducted by me, they were conducted by a previous surveyor.⁶³

Mr Knight had a different view as to the significance of certification. In the context of the certified record tracing of the Wallsend Borehole Colliery [Ex.13.20] Mr Knight gave the following evidence:

- A. ... He has certified the accuracy of that plan. **Someone else viewing that plan has to treat it at face value and if I was looking at that plan the mine workings shown on the right of the plan are obviously of a more recent era and I would treat them with a lot more confidence than older workings shown on the plan as was the Young Wallsend Colliery workings are shown there.** There is also roads shown on the plan and portion boundaries. Now, I don't know whether the surveyor involved physically surveyed the location of those roads and Cocked Hat Creek was also shown on the plan, I don't know whether he has surveyed the boundary of the creek or the bed of the creek as the case may be. I suspect that what he has probably done is obtained Cadastral plans perhaps through the Mines Subsidence Board or through the Lands Department and probably - I don't know - traced that information off the Cadastral plan yet he is still putting his certificate on that plan. So he is relying on the accuracy of other plans that have been provided for him. That is, I guess it is up to the surveyor involved whether he is prepared to wear that certification but as the regulations point out if he has any doubt about those workings he should notate the plan accordingly.
(emphasis added)

In respect of the depiction of the Young Wallsend Colliery, Mr Knight added:

- A. There does not appear to be any notation against the Young Wallsend Colliery workings and as I mentioned yesterday it probably would have been wise to notate those workings accordingly but to anybody else looking at that plan, they have to be aware of those sort of situations and the fact that the Young Wallsend Colliery workings appear on that plan to me don't give any indication as to their accuracy.⁶⁴

That approach mirrors the approach of above-ground surveyors, as described by Mr Wallis, the Acting Principal Surveyor of the Land Titles Office. Mr Wallis gave the following evidence:

- Q. One assumes therefore, that a surveyor from time to time will be required to survey a particular area which has already been surveyed by another surveyor before him, is that right?
- A. Yes, that's correct.
- Q. Therefore he will have available, having undertaken the appropriate research required by the regulations, the particular plans of that other surveyor, is that right?
- A. Yes.
- Q. On those other plans will be marked the various datum points, is that right?
- A. That's correct, yes.
- Q. How would the surveyor approach his task in terms of the certification? What relevance, if any, does the certification by that other surveyor have to the way in which he approaches his task?
- A. Well, the first thing that certification does, it gives you an indication of the name of the previous surveyor and from that there is a method of determining the accuracy that may be - and ... how accurate the previous survey had been done by the name of the

surveyor for a start because they have reputations that vary. The surveyor would then look for some of the marks that are available probably starting off with the ones that are closest to where the re-survey is to be made and then move out from that area until they establish enough marks to be satisfied that the work that was done by the previous surveyor is accurate enough for them to use for their survey.

Mr Wallis' evidence continued:

- Q. I see. Assuming that the person whose survey is being used enjoys a good reputation, would that relieve the surveyor of the need to check those marks?
- A. No, it would make the surveyor a bit more confident about the work but there's still a necessity to check that the marks are correct before the survey starts. In other words, you need a minimum of three, three is the absolute minimum marks you'd need .. - to start a survey. If the reputation of the surveyor is not too good you'd probably go to four or five just to make sure it was okay. If the surveyor's reputation was good you might be happy with just using the three marks.⁶⁵

No doubt it saves time, and is convenient, to assume that a certified plan is accurate in every detail. However, it is patently less safe to proceed upon the basis of assumption, than upon the basis of an examination and verification of information which is to be relied upon.

Mr Price asserted that his view of certification was widespread throughout the coal industry, at least before the inrush. If that view is widespread, and has not been completely dispelled by the shock of Gretley, then urgent action is needed to re-educate mine surveyors, managers, and others as

to the approach which prudently should be taken to a certified plan. The Court will return to this aspect when formulating its recommendations.

Mr Price and others sought to justify their views concerning certification by reference to the terms of Clause 2.6 of the Survey and Drafting Instructions [Ex.30.01]. The clause has been set out above (*supra* p.252). The opening sentence suggests that the certification by the mine surveyor is directed towards two things; the plan as a whole, and the surveys shown on the plan. Yet, when one examines the schedule of certification on the plan (forming part of Annexure A), it is clearly referable to surveys alone. Mr Hall QC. made the following submission as to Clause 2.6:

“It is submitted that upon a proper construction of these provisions Clause 2.6 of the instructions relate to current workings and not to old workings.”⁶⁶

Further, it was suggested that when the surveyor is enjoined by Clause 2.6 to endorse the plan, where he is in doubt as to the position of the “workings”, that can only refer to current workings, and not to workings of an abandoned mine. The workings of an inaccessible abandoned mine must always be in doubt because they cannot be surveyed.

Other clauses in the Survey and Drafting Instructions provide some support for these views (cf MFI 87 pp.95-6). However, the better view is that when the mine surveyor certifies the plan, he is certifying the accuracy of all information on the plan. The “workings” referred to in Clause 2.6 are the workings which the surveyor is obliged to depict under Clause 13(3) of the Survey and Plan Regulation. Such workings include both current workings (Clause 13(3)(a)), and abandoned workings (Clause 13(3)(b)). If the

⁶⁶

MFI 87 p.95

surveyor has doubts about either he should so endorse the plan. (cf. MFI 91 Vol.2 pp.337-8; MFI 92 p.102-3).

Having said that, it would be quite wrong for another surveyor, examining the certified plan, to equate current workings, which have been surveyed, with old workings of an abandoned mine, which are inaccessible. They are different. All information on the plan must, as Mr Knight suggests, be taken at face value. The surveyor must critically evaluate the information on the plan, appreciating the fact that there may be significant differences in its origin and reliability. The absence of any notation of doubt does not relieve the surveyor from that obligation.

4.10 Historical Research

If doubt remains after an examination of material from the Department and neighbouring collieries, how might it be resolved? What can a surveyor do to further elucidate issues arising from his examination of the plan? Should the surveyor undertake research into the history of the abandoned colliery?

An inquiry was conducted into an inrush at the Lofthouse Colliery in Yorkshire. The inrush occurred on 21 March 1973, claiming seven lives. The area within which the colliery was operating is described in the report in these terms:

"56. For the area worked by Lofthouse Colliery there were available to the surveyors old estate plans which were kept at the colliery. These plans showed old workings in the Gawthorpe and Haigh Moor seams in the Low Laithes area and also the location of some of the old shafts from which these seams had been worked during the nineteenth century. They were not the abandonment plans required by law after 1873, and were not complete. They did not show the depths

of the shafts." ⁶⁷

The Report includes an account of the research undertaken by the senior surveyor, and colliery surveyor of the mine. One or other, or both, visited the Mining Records Office, as well as the headquarters of the National Coal Board. They examined the journal of a mining engineer who was well known in the district during the relevant period [Ex.29.01 p.12 para.58]. They attended the Institute of Geological Sciences in Leeds, inspecting plans held by that Institute. Within these sources there was material capable of revealing the existence of workings in the vicinity of the area where the mine was working. A field note disclosed the following:

"'Low Laithes Colliery: Sunk 80 yards below Haigh Moor and bored 38 yards lower at the Bye Pit.' (Plate No.5)" ⁶⁸

The Report added:

".. but had it been suspected that the Bye Pit was sunk to the Flockton Thin seam the collective opinion of mining engineers might have been that the utmost care was necessary as there was, at least, a possibility that the Flockton Thin seam had been worked." ⁶⁹

The incident demonstrates that contemporaneous records, in the right hands, are capable of illuminating the truth. It also demonstrates, unhappily, that such research is difficult, and that even with due diligence vital information may be overlooked or misconstrued.

⁶⁷ Ex.29.01 p.12

⁶⁸ Ex.29.01 p.14 para.65

⁶⁹ *ibid* para.68

Should the mine manager or surveyor at Gretley have undertaken historical research into the Young Wallsend Colliery? The company, in its submission, answered that question with these words:

"In its terms, the question whether or not consideration would or should be given to engaging in historical research is predicated upon the person concerned having uncertainty as to the accuracy of plans. It is necessary to repeat here that the evidence by the majority of witnesses was that they were or would not be concerned with what might be described as "minor inaccuracy", ie, that which is contemplated by Clause 9 of the Methods and Systems Regulation."

The Court has already dealt with that assumption. It was unwarranted, and unwise (supra p.243). The company's submission continued:

"It is submitted that the question of whether or not historical research would or should be undertaken is not concerned with uncertainty as to minor inaccuracy. Historical research is, it is submitted, not going to or not likely to resolve such uncertainty. It is only the question of what may be described as uncertainty as to whether there is gross inaccuracy that is possible to be resolved by historical research."⁷⁰

The Court accepts that historical research is unlikely to resolve minor uncertainties. Here, the issue is whether it was capable of resolving, or at least illuminating, two issues:

- First, there being no legend on the old plan [Ex.13.63], what was the significance of the use of different colours in depicting the workings (the red and the black?)
- Secondly, was the old plan up to date? When, in

⁷⁰

MFI 91 Vol.1 p.227 para.11A.1.2

relation to the dates which appear on the plan (between 1910 and 1912), did the mine discontinue operations?

A number of witnesses offered opinions as to the value of historical research. Mr Anderson gave the following evidence:

Q. If I could move to another issue, given that there is, in your view, uncertainty relating to the plans, would you expect the company to research the history of this particular colliery in order to attempt to resolve that uncertainty?

A. I wouldn't think so.⁷¹

Mr Anderson's attention was then drawn to the report in respect of the inrush at the Lofthouse Colliery. He said this:

Q. You have read that report?

A. Yes.

Q. That report provides details of the attempts by the mine manager and the surveyor to determine what workings were in their area?

A. Yes.

Q. They did so by reference to a great deal of historical material?

A. They did.

Q. But have you known any mine manager in New South Wales in your experience to carry out that sort of process?

A. No, I haven't.

Q. And even were it undertaken would you see it as a valuable exercise?

A. No, not necessarily because historical research requires those people who are conducting it special skills and understanding and a novice at it may well come up with the wrong answer, and even an

experienced person may come up with information that is inaccurate simply because they have not been able to access the vital bit of information. So, in other words with historical research if you have ever tried to track your family history you will know there is a lot of luck involved in getting it accurate.⁷²

Mr Anderson did not suggest that the uncertainty arising from an examination of a plan should be left unresolved. He believed it was necessary to hole into the old workings for the purpose of accurately identifying their location. We will deal with that suggestion later in this Report.

The company, in its submission, endorsed Mr Anderson's view concerning historical research, though with one qualification. The company said this:

"(i) Under Clause 8 of the Methods and Systems of Working Regulation, the Manager shall have regard to material available from the Department. Such material would include historical material;"⁷³

Copies of the Department's Annual Reports are readily available at the Department's library (MFI 91 Vol.2 p.284 para.14.3.5). In addition, the company characterised the Report on the Hunter River Coal Measures by Professor Edgeworth-David, (a copy of which was in the possession of the Gretley mine) as "material available from the Department" (MFI 91 Vol.1 p.228 para.11A.1.4).

The archive file [Ex.17.17] was, as demonstrated earlier (supra p.118), capable of unlocking the truth in respect of the Young Wallsend Colliery.

⁷² ibid T1671

⁷³ MFI 91 Vol.1 p.228 para. 11A.1.3

Was that file, in the terms of Clause 8(3) of the Methods and Systems Regulations, "information .. available from .. the Department of Mineral Resources"? In respect of that file the Department's submission said this, referring to the file reference number in the Abandonment Register:

"Nevertheless, if the researcher observed the numbers and enquired as to their meaning, it is a short step from that point to recovery of the archival file." ⁷⁴

The Department added:

"The recovery of the archival file as described by Mr Carroll in Exhibit 88.01 demonstrates that the Department had a system for retrieving archival material, which could have been invoked on behalf of a mine surveyor or manager who asked the right questions after pursuing the right line of enquiry." ⁷⁵

Certainly the file was "information" held by the Department. The issue is whether it was "information available" from the Department. The company responded to the Department's submission as follows:

"Paragraph C3.15.4 suggests that "if the researcher observed the numbers and enquired as to their meaning, it is a short step from that point to recovery of the archival file". In light of the experience of this Court as to the circumstances and timing of the production of the "archival file", Exhibit 17.17, we submit that the suggestion made is, at best, disingenuous and should be rejected by this Court." ⁷⁶

The Court shares the company's doubt that someone outside the

⁷⁴ MFI 92 p.98 para.C.3.15.4

⁷⁵ MFI 92 pp.98/9 para.C.3.15.6

⁷⁶ MFI 95 p.26 para.R4.3.3

Department could expect to unearth the file, simply by asking . They may have done so. However, it appears likely that they would have been deflected, just as Mr Carroll, the Solicitor for the Department, was at first deflected (supra p.157). That finding, incidentally, is not inconsistent with the Court's view that the Department should have retrieved the file for the purposes of compiling the 1:4,000 seam sheet. The Department is in a far better position to find its way through the complex of stored material than an outsider.

In contrast to Mr Anderson's view, there were others who saw value in historical research. Mr Kininmonth, a mining engineer, and former Senior Inspector with the Department, said this:

- Q. ... do you have a view as to the place of historical research in resolving uncertainty in respect of old collieries?
- A. Yes. I would see that it was a necessary step to take if there was any doubt about the correctness or availability of accurate plans. The doubt and uncertainty could perhaps be clarified by reference to historical material and that would be a necessary step to doing a preliminary study if there was any question about the accuracy of the plans.⁷⁷

Mr MacLeod, a former mine manager, conducted his own research after the inrush, simply out of curiosity. That research, of course, was undertaken with the benefit of hindsight. Mr MacLeod gathered material from which he was able to infer that the black and red workings were in the same seam, being the Young Wallsend Seam (T7827; 7832). He believed, without hindsight, that historical research was capable of shedding light upon the uncertainties which inevitably attend old workings. Mr MacLeod

said this:

- Q. .. I ask you to assume this. That whoever may have done the separation, the Department held the three plans in its repository as part of record tracing 523?
- A. Yes.
- Q. Such that on request for the record tracing in respect of the Young Wallsend Colliery, those three sheets were provided?
- A. Yes.
- Q. You understand?
- A. Yes.
- Q. But that upon inquiry for further information or clarification as to who did the separation and how, nothing further could be provided. You understand?
- A. Yes.
- Q. On the those assumptions, how then would you plan your development?
- A. On the basis that there's been no reason given as to why the separation took .. place, you would still have that question in your mind as to why have ... they been presented that way? .. it would be hard to believe that there would be no information available to suggest how the two drawings came into existence.

Mr MacLeod's evidence continued:

- Q. - - - even though it is hard to believe, that is what you are told?
- A. Assuming then - I think then your alarm bell is going to ring. Again, you're going to look at it and ask is that a real interpretation of ... that particular plan?
- Q. All right. so you, what, go back to sheet 1?
- A. You'd have to go back to sheet 1 and then go out and seek some further research to try and determine what was, if you like, the Young Wallsend Colliery.
- Q. All right. And the further research would be historical research that you referred to?
- A. Historical research, yes.
- Q. Anything else?
- A. Anything held in the Department. It would be basically historical research because nothing else (is) available

to you.⁷⁸

The view of Messrs Kininmonth and MacLeod is preferred. Historical research is important. The Court recognises that hitherto prudent mine managers may or may not have seen the need to embark upon such research, apart from seeking access to the Department's Annual Reports, and other material held by the Department.

This Report began with an historical account of the Young Wallsend Colliery. That account was based upon a number of publications, both old and new. The quest to understand enigmatic and conflicting evidence is, itself, likely to yield a better understanding of the problem, and to expose assumptions which may have been made. Although the publication *Youngy Then & Now* (1991) may have gone beyond its source material in asserting that the Borehole Seam had not been worked before 1912, (supra p.122), that statement was capable of dislodging an assumption that the two colours in the old plan were referable to two seams. Further, the book by Danvers Power (1912) accurately identified the Young Wallsend Colliery as working in the Young Wallsend Seam. Contemporaneous newspapers reports were likewise capable of providing insight.

The Annual Reports of the Department provided an invaluable commentary upon the operation of the mine. Mr Adam was asked the following questions by Mr Strathdee QC based upon information appearing in the Annual Reports, and against the background of the dates on the red workings on the mine plan (1910-1912):

Q. So quite clearly by 1909 the colliery is working?

A. Yes.

- Q. But by 1911 there was only 42 days worked in the mine. You would agree would you not that that appears to be a considerable reduction in the work that was being carried out?
- A. It would be.
- Q. That towards the end of 1911 the Bank of Commerce notified the Department that they were the mortgagees in possession and that there were two persons above ground and two persons below ground. That would give you an indication that those two people were there in relation to a maintenance capacity, would you not agree?
- A. I would agree with that.
- Q. And that in October 1912 the Bank of Commerce notified that there was a suspension of work at the colliery and it was being closed down?
- A. Right.⁷⁹

The examination continued:

- Q. Now, that information again is a very vital piece of historic information that would help a surveyor gain confidence in his task of sorting out just which seam was which or what work had been done?
- A. It would give him some guidance as to the amount of development taken up in that time, yes.
- Q. Added to his level of confidence?
- A. Yes in the overall picture, yes.⁸⁰

Plainly skills are required to effectively carry out historical research. Mr Adam gave the following evidence:

- Q. Now, can I take you to another matter and it is dealing really with your background as a teacher, if I can put it that way. You have given a great deal of evidence in relation to historical research. Now, can I ask you this, is historical research for example an exam

⁷⁹ D. Adam T8493/4

⁸⁰ *ibid* T8494

question in any examination for either a surveyor or a mine manager?

A. If you are referring to the examinations for statutory certification, the answer is no.

Q. Is it part of the curriculum, is it taught as part of the curriculum in relation to historical research, either in the surveying course or the mine manager's course?

A. The paths which lead to either statutory certification for a mine manager or a mine surveyor are varied. You can come to the point of being entitled to sit for that exam from a number of paths and a number of different institutions but for those for which I'm aware, there is no such facility in the course.

Q. Do you see that now as a defect with the benefit of hindsight having in mind what has transpired, I refer to the inrush?

A. I think the answer to that would have to be, yes.⁸¹

The Court will return to this aspect when making its recommendations to the Minister. Having dealt with the obligations of the mine manager, and surveyor, and the steps which each should take in fulfilling those obligations, the Court is now in a position to consider what the Gretley mine did, by way of research, before depicting the Young Wallsend Colliery.

4.11 The Plans on File after the Inrush

The Young Wallsend Colliery was first depicted on the Gretley mine plan in approximately 1991 [K. Price Ex.58.03 p.19 para.46]. The mine surveyor at that time was Mr Tilden. Mr Michael Murray was the project surveyor at Gretley [Ex.58.03 p.7 para.24]. It was Mr Murray who was said to have drawn the outline of the Young Wallsend Colliery [S. F. Tilden Ex.74.01 p.4 para.24].

Mr Murray died on 2 October 1996, six weeks before the inrush. He had

⁸¹

ibid T8455

been ill for some time, and had ceased work in May 1996. The submission of the Australian Collieries' Staff Association said:

"The totality of the material that was available to Murray, which resulted in his depiction of the Young Wallsend Colliery old workings on the Gretley mine working plan, will never be known." ⁸²

Unquestionably, the absence of Mr Murray's first hand account of his research, his reasons and his beliefs, creates difficulties for the Court. The Court must do its best to determine what material and information Mr Murray actually used in order to depict the Young Wallsend workings in the place and form he did on the mine plan produced for approval on the Section 138 application.

Witness after witness spoke of Mr Murray's reputation. The Court accepts that Mr Murray was held in high esteem by his colleagues, and by those who knew him in the industry. His successor as mine surveyor at Gretley, Mr Robinson, stated:

"Michael Murray was, in my opinion, a thorough and accomplished professional. His stature was impressed upon me several times by statements that Richard Porteous, Michael Alston and Kevin Price made to me." ⁸³

The Court accepts that Mr Murray was a proficient surveyor.

Mr Robinson asserted that Mr Murray, for reasons which are now obscure, took Mr Knight's survey of the shafts of the Young Wallsend Colliery [Ex.13.19] and reorientated the plan a few degrees before depicting the

⁸² MFI 89 Vol.1 p.7

⁸³ Ex.62.05 p.37 para.98

Young Wallsend Colliery on the Gretley mine plan. The result was that the point of holing-in matched the end of the roadway on Mr Murray's plan (MFI 89 Vol.1 p.7).

Immediately after the inrush, Mr Flett, a senior inspector with the Department, served a notice upon the mine to produce all plans relied upon in its depiction of the Young Wallsend Colliery [Ex.73.01 p.31 para.77]. Mr Price, the Chief Surveyor for the Group, had the task of examining the material held by the mine, and responding to the notice. Many plans were produced, as well as a number of reports. In substance, the material available to the mine was as follows: (MFI 89 Vol. 1 pp.8-12; MFI 91 Vol. 2, pp.272-4)

- First, multiple copies of the bottom and top seam sheets (RT 523), sheets 2 and 3. Some were annotated with a reference to RT 523, whereas others were not.
- Secondly, the Wallsend Borehole mine working plan [Ex.13.20].
- Thirdly, the Gretley mine record tracing signed by Mr Tilden and Mr Murray [Ex.13.29A & B].
- Fourthly, Mine Subsidence Board seam sheets in the 1:4,000 series for both the Young Wallsend Seam, and the Borehole Seam, containing depictions of the Young Wallsend Colliery consistent with sheets 2 and 3.
- Fifthly, a letter of 24 October 1990 to the Newcastle Wallsend Coal Company from F. A. I. Mining annexing a plan drawn by Mr Knight depicting the boundary between the two companies in respect of the Argenton region [Ex.52.01] (supra p.193).
- Sixthly, the shaft survey carried out by Mr Knight in 1980, which identified the position of the old workings, in terms of the grid reference, though not their extent [Ex.13.19].

- Finally, various geological reports of BHP containing depictions of the Young Wallsend Colliery which again were consistent with the outline shown in sheets 2 and 3

Two matters which one would expect to find were missing. First, there was no copy of the old plan [Ex.13.63], being RT 523 sheet 1 (or any portion of that plan). Secondly, there was no surveyor's file. There were no notes referring to sheet 1, nor copies of extracts from the Department's Annual Reports, nor other historical documents signifying that research had been undertaken. Mr Knight said this:

- Q. But having got the plans and having gone to the department and inspected whatever plans are necessary you would expect there to be brought into existence as part of the process, and no doubt this goes back to your experience dealing with such matters at BHP Collieries and the like, there comes into existence a file, a surveyor's file, in which notes are kept of inquiries he has made, observations he has made from plans, notations of matters of significance, correct?
- A. Yes, I would agree with that.
- Q. There is no mystery about this, you would expect there to be a file in which all of this material can be collated and placed and found, is that right?
- A. Yes, there could be a file. More likely in a situation like this there could be survey calculation books, that type of thing, yes.
- Q. But all of that process is part of the process of creating a record of the work that goes into the performance of the obligation under 8(1)?
- A. Yes.
- Q. And it is important, is it not, for surveyors to keep notes of the work they do?
- A. Yes, there is an obligation to keep survey records as such as to find, yes.
- Q. Apart from survey records, if they are doing a task such as this one, that is endeavouring to locate old workings and their extent, they would be making

- appropriate notes of their investigations?
- A. I imagine that would be the case, yes.
- Q. You would imagine a prudent surveyor would do so?
- A. Yes.⁸⁴

The following evidence was given by Mr Barrington Walker, the former Chief Surveyor of R. W. Miller:

- Q. In any event, if one were to follow this path - a surveyor to follow this path, you would expect him to gather together all of the material and collect it in a file and have it available for his manager, is that right?
- A. The straightforward answer is yes.
- Q. What is the complicated answer?
- A. Has he got time.
- Q. Well, this is an issue which is of fundamental importance to the safety of the mine?
- A. It is.
- Q. And is time a real consideration?
- A. Well, it shouldn't be.⁸⁵

Mr Robinson, the surveyor who succeeded Mr Murray, gave the following evidence, referring to Mr Murray:

- Q. You did not have the benefit of any file which he had left behind where he had documented his thought processes culminating in his depiction of the old workings?
- A. No, there wasn't such a file which I was aware of.⁸⁶

Mr Porteous, the manager at Gretley, said:

- Q. But in your consideration of the strategy which was

⁸⁴ R. A. Knight T6824/5

⁸⁵ J. B. Walker T8023

⁸⁶ M. Robinson T8677

appropriate for this development, was it not important that you identify material within the filing system of Gretley which was relevant to that strategy and read that material?

A. If Mr Romcke had said there was such a file, he would have referred me to it and I would have read it.

Q. So you presume that there was no such files?

A. Yes.⁸⁷

Mr Hall QC, appearing for the relatives of the deceased, called upon the company to produce any documents which may constitute a surveyor's file (T6832). No documents which may be so described were produced. The Court infers that there was no surveyor's file.

There were two publications at the Gretley mine, namely Kingswell, *The Coal Mines of Newcastle*, and the Report by Professor Edgeworth-David. Had either of these publications been used, one would have expected a note, or perhaps a photocopy of the relevant passages. No such documents were produced. It appears unlikely that any historical research into the Young Wallsend Colliery was undertaken. Yet, at the very least, the Department's Annual Reports, and the Abandonment Register, should have been examined in fulfilment of the Manager's obligations under Clause 8(3) of the *Coal Mines Regulation (Methods and Systems of Working - Underground Mines) Regulation, 1984* (supra p.210).

However, the most disturbing omission from the material produced after the inrush was the absence of a copy of the old mine plan [Ex.13.63], or any document which suggested that it had been examined. The surveyor needed to examine the original of the old mine plan held by the Department: (R. A. Knight T6824) there being no substitute for doing this or for looking at a colour copy (K. Price T5505). This should involve a visit

to the Department and a request to see everything it had in relation to the mine [D. Adam EX.86.04 p.1 para.5]. Indeed, in the submissions on behalf of Mr Porteous appeared the assertion:

"It would not be (an) adequate discharge of a surveyor's duty to inspect a black and white copy of RT 523 alone. It would be necessary to inspect the original as many details on the original would not be reproduced in a black and white copy."⁸⁸

Any analysis of the Young Wallsend Colliery which failed to include such an examination would have been seriously flawed.

Notwithstanding the absence of a physical copy of the plan, what evidence is there that Mr Murray (or someone at Gretley) examined Exhibit 13.63 (RT 523, sheet 1)? The company, and the Collieries' Staff Association, point to three matters which establish, in their submission, that Mr Murray examined the old plan. The three matters are these:

- First, the evidence of an undermanager, Mr Coffey, who recalled an occasion in 1993 when he saw Mr Murray in possession of a plan which, from Mr Coffey's description, bore resemblance in some respects to sheet 1 of RT 523
- Secondly, a conversation between Mr Porteous and Mr Murray in 1995 when Mr Porteous was seeking to understand the basis upon which Mr Murray had depicted the Young Wallsend Colliery.
- Thirdly, it was argued that because the examination of RT 523 sheet 1 was so fundamental to an

understanding of the abandoned mine, it is inconceivable that a person of Mr Murray's competence would have overlooked making that examination.

This is an important issue. Each matter will be examined in turn.

4.12 The Evidence of Mr Coffey

Mr Romcke was appointed the mine manager of Gretley in June 1993 [Ex.6.11]. At some time shortly after his appointment, Mr Coffey, then the training officer at the mine, had a conversation with Mr Murray. Mr Murray and Mr Coffey were friends. They often had lunch together. During a lunchtime discussion they talked about improving the ventilation of the mine [Ex.19.05 p.5 para.67]. In that conversation there was reference to the Young Wallsend Colliery, and the fact that the surface area above the colliery had been subdivided into a residential estate. Using the shafts to improve ventilation, therefore, was no longer an option (T2163). A few days after this conversation, Mr Coffey saw Mr Murray again. It was a casual encounter as Mr Coffey was passing the Survey Office. Mr Murray said words to the following effect:

"I have just got some plans that you will be interested in." ⁸⁹

Mr Murray then retrieved a roll of plans from the Survey Office. The two men stood on opposite sides of the same table whilst the plans were unfurled. Mr Coffey described what he saw in these words:

"The first thing I noticed about the plan that he had extracted and had placed on the table, was that it had a scale of two chains to an inch. Although he did not roll the plan in question all the way out, the area which was visible to me was approximately 3 feet square. The area of the plan then visible to me depicted two shafts with depths marked in feet.

The area of the plan which we were looking at did not have any coloured markings on it but, rather, appeared to be a photocopy of another plan." ⁹⁰

It was simply a black and white photocopy (T2324). Mr Murray said this:

"These are the Young Wallsend Colliery workings." ⁹¹

Mr Coffey added:

"Michael Murray did not say anything about where he obtained the roll of plans from. However, he seemed excited about the plan before us on the table and, from my observation, it appeared to be new to him." ⁹²

Mr Coffey described in some detail his recollection of the plan that he saw. From his description, it appeared to be a copy of the old mine plan [Ex.13.63] (RT 523, sheet 1). The only conversation with Mr Murray concerning the plan, which Mr Coffey could recall at the time he made his statement, was as follows:

"The conversation continued, with my saying something about the depths shown on the plan. However, I cannot remember any detail of what I said to him about those

⁹⁰ ibid p.7 paras.79 & 80

⁹¹ ibid p.7 para.81

⁹² Ex.19.05 p.8 para.82

depths, nor whether he made any response to what I said."⁹³

Whilst examining the plan, the mine manager, Mr Romcke, entered the room. He spoke to Mr Murray. Thereafter, he and Mr Murray left the room. Mr Coffey continued to examine the plan for about three minutes [[Ex.19.05 p.10 para.89]. Mr Murray then returned, but was distracted. He indicated that they would talk about the plan later. In fact, the matter was never raised again. Nor did Mr Coffey ever see the plan again [Ex.19.05 p.11 para.92].

Some years later, shortly after the inrush, the manager at Gretley, Mr Porteous, invited Mr Coffey to attend a conference in order to examine a plan which had been produced by the Department. Mr Abbott, Mr Van Dijk (from the Department) Mr Les Yates (the check inspector from the Union), as well as various mine personnel gathered in a room to examine a plan. The date can be identified from Mr Abbott's diary as 25 November 1996 [Ex.54.01]. Mr Coffey was immediately struck by the similarity of the plan which was being examined to the plan he had seen several years before in the presence of Mr Murray [Ex.19.05 p.13 para.101]. During the course of the examination, the faint pencil comment, suggesting that the red workings were in the top seam, was observed by someone in the group. Mr Coffey said he remembered that:

"One or more of the others and I were trying to read something which was obscure but appeared to be in pencil handwriting."⁹⁴

Mr Robinson, the mine surveyor, attempted to enhance the words written

⁹³ *ibid* para.83

⁹⁴ Ex.19.05 p.14 para.103

by photocopying the plan, and was successful in doing so [Ex.19.05 p.14 para.105]. Mr Coffey said nothing. His statement included the following:

"I recall that I was not feeling very well. I was having trouble getting my mind around the significance of the information I was receiving. Others in the room were speaking, but I was silent. I just didn't know what to make of the information I was receiving." ⁹⁵

At the end of the meeting, another group assembled to discuss the need for a risk assessment of the Young Wallsend Colliery before mining could resume. Mr Coffey also participated in that discussion [Ex.19.05 p.15 para.108].

On 21 January 1997 Mr Coffey answered certain questions which had been put to him by the Inspectors from the Department [Ex.19.03]. He said this:

"Q.9 Were you aware of the old workings of the Young Wallsend Mine contained within Gretley's mine lease?

(A) I was aware of the Young Wallsend workings as shown on the Mine Plan." ⁹⁶ (parenthesis added)

Mr Coffey thereafter made a further, and more detailed, statement. He attended the office of his Solicitors on 14 March 1997 to read and sign the statement [Ex.19.04]. In the course of that discussion he mentioned to his Solicitor, Mr Rodney, for the first time the meeting with Mr Murray, and the old plan. A further statement was then prepared. It became Exhibit 19.5 (25 March 1997). That statement included the following:

⁹⁵ ibid p.15 para.107

⁹⁶ Ex.19.3

- "111. On several occasions after that day, usually when I was at home in bed at night or driving my car, I remembered that I had been struck by the similarity between the linen plan on the table in the conference room, and the plan referred to in paragraphs 79 to 81 and 87 to 89 above and I thought that I should mention this to my solicitor, Mr John Rodney.
112. The first time I got around to mentioning that matter to Mr Rodney was on Friday 14 March 1996. (*sic.*)
113. I did not at any time feel that such similarity was significant. I am still not sure that I appreciate whether it is significant or not and, if it is significant, what that significance is." ⁹⁷

The company made the following submission in respect of Mr Coffey's evidence:

"The effect of the evidence of Mr Coffey is that in mid 1993 he was shown a copy of Exhibit 13.63 by Mr Murray and discussed it in the Gretley survey office.

Mr Coffey's evidence on this issue is uncontradicted. He described the plan that he had seen in some detail, detail which is consistent only with it having been a copy of Exhibit 13.63. He recalled specific conversation attributed to Mr Murray which accounted for an apparent discrepancy in the location of a staple shaft. He gave detailed evidence of the circumstances in which he recalled the matter, and the absence of any mention of the matter to him by any other persons. We submit that there can be no reasonable suggestion that Mr Coffey was doing anything other than telling the truth on this issue.

A finding that Mr Murray did not have a copy of Sheet 1 requires a finding by the Inquiry that Mr Coffey was not being truthful in giving this evidence. We submit that there is no

basis for such a finding.”⁹⁸

The submission made by Counsel for the relatives, Mr Hall QC, characterised Mr Coffey’s evidence as “unreliable” (MFI 87 pp.61 &114). The submission said this:

“It is submitted, with respect, that the Court ought to be cautious in accepting any of the evidence of Mr Coffey concerning Exhibit 19.5. Whilst on the one hand he asserts that he does not understand the significance, even now, of the plan which he claims Mr Murray showed him depicting the two seams, it is clear, it is submitted, that he is relying upon the incident to protect his position in terms of it being a matter which he could point to as justifiably giving him confidence in the old plans (see in particular T.2184)”⁹⁹

Aspects of Mr Coffey’s evidence are puzzling and, indeed, unsatisfactory.

First, Mr Coffey attached some importance to the plan which he had seen in Mr Murray’s presence. He said this:

- Q. You tell us that this casual conversation with Mr Murray, incomplete, never returned to by you, is that right?
- A. That’s correct.
- Q. Was something nonetheless to which you attached significance?
- A. That’s correct.
- Q. Because it gave you confidence that Mr Murray had had access to the original plans, is that right?
- A. Had copies of the old plans, yes.¹⁰⁰

⁹⁸ MFI 91 Vol.2 p.279 para.14.2.5

⁹⁹ MFI 87 p.115

¹⁰⁰ M. J. Coffey T2186

When cross-examined about the plan Mr Porteous showed him in November 1996, his evidence was:

- Q. This was not just another plan, was it, it was clearly an original document and a very important - - - ?
- A. It had some importance, yes.
- Q. Now, you were struck by the similarity between that plan and the one that Murray had shown you?
- A. That's correct.
- Q. Struck to the point that when you lay awake at night or when you are in your car, kept repeating on you, over and over, is that right?
- A. No, I - I recalled it a number of times at a later - at a later date, yes.
- Q. But you recalled it especially when you were home in bed at night or driving your car?
- A. That's correct.
- Q. Quiet moments when you were reflecting upon these matters?
- A. That's correct. ¹⁰¹

It was immediately apparent after the inrush that there had been an error in the plan. The plan which Mr Coffey saw was plainly important, and recognised by him as important. It is difficult to understand why, in these circumstances, Mr Coffey should not have raised the matter sooner. He addressed that issue in the following evidence:

- Q. You assumed importance for the first time on that day when you mentioned it to Mr Rodney?
- A. No, I - it was just - I didn't consider it to be a - of huge importance, it was just a - one of the things that I had in my mind that made me feel confident in the - in the process.
- Q. Well, surely that is important, even if it is simply that, is not it?
- A. In that regard, yes, it's important to me.
- Q. Yes. Well, why did not you include it in your original

statement of 14 March, exhibit 19.04, any explanation?

A. No, not really.¹⁰²

Secondly, it is also difficult to comprehend why Mr Coffey should have remained silent at the conference after the inrush when he recognised the old plan. The following was put to Mr Coffey when examined:

Q. I am just suggesting to you it is a very natural thing if you see something you recognise and you are looking at it in the context of a tragedy that has occurred which concerns a mistake in a plan and you know that this is an original document, probably a vital clue in unravelling that mistake, that you just say: look, I have seen this before, is not that right?

A. No.

The examination continued:

Q. You were not holding your tongue for a particular reason, not saying anything?

A. No.

Q. You felt no inhibition in offering a comment if you had thought it appropriate, is that right?

A. If I thought it was appropriate, yes.

In response to further questioning Mr Coffey said this:

Q. You did not not say something because you were feeling ill, did you?

A. No, I wasn't feeling well but - - -

Q. That was not the reason why you held back, was it?

A. I didn't feel - I didn't feel it was significant at all.¹⁰³

¹⁰² ibid T2354

¹⁰³ M. J. Coffey T2174/5

The contribution Mr Coffey could have made was clearly significant. Mr Murray was dead. There was an important question as to what Mr Murray had done. It was apparent that the plan being examined in the November 1996 conference was of the utmost significance. Amongst other things, it contained the faint pencil note which suggested that the seams had been reversed. Others were making a contribution to the discussion (T2174). There was no reason why Mr Coffey should not have done so. He was well enough to stay for the next meeting, and to participate in it (T2175). It is odd in these circumstances that he should have remained silent.

Thirdly, Mr Coffey in the following passage identified the aspect of his meeting with Mr Murray which gave him confidence:

- Q. What was it about that plan that you had seen in his office that gave you that confidence?
- A. The fact that it was the - the same outline, the same - the same plan.¹⁰⁴

In response to questions from Counsel Assisting, Mr Coffey said this:

- Q. You say that you could pick out of a black and white copy of the two workings depicted on the same plan the outline which you became familiar with, the oval shape, which you now know to be black in the original, is that right?
- A. Was it black, okay.

The examination continued:

- Q. And you are able to keep that in your mind as a separate entity and to compare it in your mind with the outline that you see on the plan 13.18 that you are

working to, is that right?

A. That's correct.

Q. The similarity between those two outlines was a thing that gave you confidence?

A. That's correct.

Q. And that confidence arose from this casual conversation about something which was only shown to you as a matter of interest?

A. That's correct. ¹⁰⁵

The Court had several black and white copies of Exhibit 13.63 (RT 523, sheet 1). Some were better than others [Ex.13.14 cf. Ex.51.01 Annexure D and Ex.13.62]. Even with a good copy, it was difficult to differentiate the workings, which overlapped, without the aid of colour.

Fourthly, Mr Coffey, when composing his statement concerning the meeting with Mr Murray, could not recall any of the conversation concerning the old plan, beyond the fact that they discussed the depths shown on the plan [Ex.19.05 p.8. para.83]. He said this:

Q. And you cannot remember anything about the detail of that conversation?

A. No, I cannot.

Q. Even though you have racked your brains to try and bring it back, is that right?

A. That's correct. ¹⁰⁶

The following day, however, Mr Coffey was able to call to mind the following remarks of Mr Murray, concerning the staple shaft:

A. ... there was also a - a staple shaft which I remarked to Mr Murray about that the - that two headings appeared to be - that should've been connecting up

¹⁰⁵ ibid T2184

¹⁰⁶ M. J. Coffey T2170

the staple shaft appeared to be separated. He remarked to me that horses don't - don't wear lights and - - -

Q. Horses don't wear lights?

A. Yes.

Q. What did you take him to mean by horses don't wear lights?

A. It was a cryptic comment which made me refer back to the plan ... ¹⁰⁷

Mr Coffey added:

A. So, in other words, the shaft would come up alongside that road and the - you'd have to drive off to the top of that staple shaft to connect up for ventilation. ¹⁰⁸

The remark attributed to Mr Murray is unusual. It is the sort of remark one would ordinarily expect someone to remember.

Now, if Mr Coffey's evidence were right, one would expect to find the plan which had been discussed amongst the records of the mine. No such plan was found. There is evidence, however, which the company suggests satisfactorily explains its absence (MFI 91 Vol.2 p.281A para.14.2.8). When Mr Robinson took over as mine surveyor, he made changes to the Survey Office. He asked Mr Murray to assist [Ex.62.05 p.16 para.38]. Mr Murray responded as follows, according to Mr Robinson's recollection:

"He said:

"Fine, I'll go through all the old stuff and sort out what I don't need".

I said:

"Good, I'll go and get some boxes from the

¹⁰⁷ *ibid* T2324

¹⁰⁸ *ibid* T2324/5

store. We can put all the stuff you don't need in those and throw it into the skip." " 109

Mr Murray himself was assisted by "a couple of temps" [Ex.59.01 p.7 para.20].

However, this is not a satisfactory explanation. The old plan was plainly an important document. Mr Murray, indeed, was said to have been excited by it. It was the only copy. In contrast, multiple copies of other documents (including sheets 2 and 3) were retained, as well as many other plans of doubtful relevance. Mr Romcke said this:

- Q. And it would be incomprehensible to you, would it, that for instance a copy of a document that you would expect to be retained, such as 13.63, might be thrown out, on the one hand, in some form of clean-up whereas documents of the sort that I showed you, 13.69 to 13.72, the historical documents, might be retained. That would be incomprehensible to you, would it not?
- A. I don't know what might have happened in a clean-up situation but it - certainly not what you'd want to happen, no.
- Q. No. Accidents may happen and each one of us I am sure has at some stage thrown out something which we wish we had not. But leave aside the irrational or the accidental, on a rational basis you would expect any copy of sheet 1 to be retained in a way that the other sheets may not be retained depending upon one's interest in history?
- A. Yes. ¹¹⁰

It was impossible to believe that Mr Murray consciously discarded his only copy of Exhibit 13.63, RT 523 sheet 1. It may have been thrown out by

¹⁰⁹ Ex.62.05 p.17 para.38

¹¹⁰ J. E. H. Romcke T6261

accident. If Mr Coffey's evidence were compelling, one may be driven to that conclusion. However, Mr Coffey's evidence is far from compelling.

Even if one were to accept Mr Coffey's evidence, there are a number of other difficulties. First, the plan Mr Coffey saw was a black and white copy of the old plan [Ex.13.63]. Unless Mr Murray also saw the original, reference to a copy would not be a satisfactory discharge of his duty as mine surveyor (supra p.276). Secondly, Mr Coffey was quite sure that the meeting with Mr Murray occurred at a time when Mr Romcke was the mine manager (T2161/2). His account of that meeting, of course, refers to Mr Romcke entering the room, and thereafter leaving with Mr Murray. Mr Murray was excited about the old plan; it appeared to be new to him [Ex.19.05 p.8 para.82]. Indeed, Mr Coffey attributed to Mr Murray these words:

"I have just got some plans that you may be interested in."
(emphasis added) ¹¹¹

Mr Romcke began at the Gretley mine in June 1993 [Ex.6.11]. Mr Murray, however, had depicted the Young Wallsend Colliery on the Gretley mine plan in approximately May 1991 [K. Price Ex.58.03 p.19 para.46]. Unless there were evidence that Mr Murray had seen the original of Exhibit 13.63 at an earlier point in time, the evidence of Mr Coffey would not answer the suggestion, arising out of the absence of the surveyor's file, that the old plan was not examined for the purpose of depicting the abandoned workings.

4.13 Discussions between Mr Murray and Mr Porteous

The second suggestion that Mr Murray examined the original of Exhibit 13.63 (RT 523, sheet 1), arises from evidence given by Mr Porteous concerning a conversation he had with Mr Murray in April 1995. To understand Mr Porteous' evidence it is necessary to examine the context within which the evidence was given.

After the inrush the Inspectors forwarded a series of questions to Mr Porteous. On 5 February 1997 he responded. The response included the following:

"Q.19: With respect to Coal Mines Regulation (Methods and Systems of Working - Underground Mines) Regulation 1984, Clause 8(3), did you or another person under your control, view plans held in Sydney by the Department of Mineral Resources?

A. Apart from Mark Robinson obtaining plans, which had been prepared by the Department of Mineral Resources, from the Mines Subsidence Board in early November 1996, I assumed plans had been checked for accuracy when the s.138 application was made for MW39-45." ¹¹²

On 24 April 1997 Mr Porteous provided a statement to the Court [Ex.63.11]. The statement included the following:

"I consulted Michael Murray and asked him what information he had concerning those old workings. He told me he had plans from the Department and neighbouring collieries. He showed me plans, including a copy of the Record Tracings

of the Top Seam and copy of the Record Tracing of the Bottom Seam. He satisfied me that he had studied all the information available. I was aware, while I was in my previous job as manager of the mine at Ellalong, that Michael Murray had an excellent reputation as a mine surveyor. He said he had sufficient plans to make him confident that he knew where the old workings were.”¹¹³

There is no reference in that statement to Mr Murray having seen the original plan, as Mr Porteous acknowledged (T9141).

On 6 May 1997 Mr Porteous provided a further statement. The statement included a conversation with Mr Murray in December 1995, recounted in these terms:

“I believe that at some point in our conversation, I pointed to the Young Wallsend Colliery workings which were depicted on the plan which was on the wall in my office.

I said: “How do you know exactly where these workings are?”

He said: “I’ve got the RT and I know where the shafts are. There has been a subdivision there, and you can stand on the capping and practically touch one of the houses. Come around here and I’ll show you.”¹¹⁴

Mr Porteous included in the same statement a further conversation with Mr Murray. It identified the material Mr Murray relied upon [Ex.63.12 p.6 para.9]. That conversation will be dealt with more fully later in this Chapter when considering the discharge, by Mr Porteous, of his duty as mine manager under Clause 8(3) of the *Coal Mines Regulation (Methods and*

¹¹³ Ex.63.11 p.14 para.3.15

¹¹⁴ Ex.63.12 p.3 para.4

Systems of Working - Underground Mines) Regulation, 1984. (infra p.330). Mr Porteous, again acknowledged in cross-examination that none of the conversations in Exhibit 63.12 suggested that Mr Murray had been to the Department, and had seen the original record tracing (T9141).

Mr Knight gave evidence, commencing on 19 August 1997. His evidence was interrupted, and completed on 2 September 1997. Mr MacLeod gave evidence immediately following Mr Knight (2 September 1997). This evidence emphasised the importance of the surveyor examining the original plans at the Department of Mineral Resources.

On 16 September 1997 Mr Porteous provided yet another statement [Ex.63.14]. The statement identified the plans which had been discussed with Mr Murray. It also included the following:

"I was convinced, from my discussions with Michael Murray (who said he had all the necessary information, including information from the Department, to depict the workings accurately) and Mark Robinson, that Young Wallsend Colliery was depicted accurately." ¹¹⁵

A request was made by Mr Hall QC. (T8911) for a further statement setting out the substance of conversations said to have taken place between Mr Porteous and Mr Murray. On 8 October 1997 Mr Porteous provided that statement. In relation to his conversation with Mr Murray in April 1995, Mr Porteous said this:

"He said the top seam sheet and bottom seam sheet were copies of the RT of the Young Wallsend Colliery which he had obtained from the Department."

The statement continued:

"I asked him if he had seen the originals and he said that he had seen the originals." ¹¹⁶

Mr Murray assured Mr Porteous that he had examined all information that was available, and that his depiction of the workings was accurate [Ex.63.16 p.4 para.18].

When cross-examined by Mr Hall QC, Mr Porteous acknowledged the following:

- Q. The first occasion which you have recorded that you raised that question (i.e. about seeing the originals) and that he gave you that answer is in a document dated 8 October 1997, is it not?
- A. Yes.

Mr Hall's cross-examination continued:

- Q. You see, it is an awfully important matter, is it not, that statement, that he had given an assurance to his Mine Manager that he had in fact seen the originals, it is a terribly important matter, is it not?
- A. yes it is.
- Q. Why did you not bring it to the attention of the Inspectors when you knew they were seeking to investigate the very question as to how it was that you had gone about this barrier strategy?
- A. Because in my statements I related the essence. ¹¹⁷

Earlier, when questioned by Counsel Assisting, Mr Porteous gave the following evidence:

¹¹⁶ Ex.63.16 p.3 paras.12 & 14

¹¹⁷ R. M. Porteous T9141

- Q. Did you ask him whether he looked at the original?
- A. I firmly believe that he did see the original from the way that our conversation went and as I said it was terribly difficult to remember how it all went but I left our discussion under the firm belief that he had seen all relevant material that he needed to see to accurately depict the colliery.

The examination continued:

- Q. Just repeat if you would what he said to you as best you recollect, I know it is hard?
- A. It is very difficult. The substance of it was that he said, well I asked him have you seen all the documents you need to see on this, or all the plans, or something or other like that and he said he was sure that he had seen them all and he was sure that he was accurately representing the mine workings.
- Q. But is that all that was said?
- A. No, no, the conversation went on for some time but picking up all the aspects of it .. is difficult. ¹¹⁸

The following questions were put to Mr Porteous by Mr Hall QC. on this aspect:

- Q. You saw the reference to the Record Tracing?
- A. I saw the reference to traced from the Record Tracing, is that what you mean?
- Q. Yes?
- A. Yes.
- Q. Was it that that prompted your question: have you seen the original?
- A. No, it was the fact that they were paper copies and I knew they were copies.
- Q. You were aware, were you not, that those Record Tracings would be held in the department?
- A. I expected that's what they would be.
- Q. Did you ask him whether he had been to the department?
- A. I was left with the very firm belief that he had been to

the department. As I said the other day, I can't remember the exact words that we used but that was my very firm belief.

Q. That was not my question. Do you recall asking him whether he had been to the department in person?

A. As I said, I can't remember the exact words but I left that conversation with the very firm belief that he had taken all steps necessary to acquire the information that he needed to acquire.

Q. But did you ask him whether he had been to the department, simple question?

A. In the course of the conversation I must have asked words to that effect but I'm sorry I can't relate exactly what it was.

Q. You cannot recall whether you did ask him that question, is that the position?

A. I left the conversation with the very firm belief that he had done everything that he had done, including that and I've found it very difficult to recall the exact sentences that were used.¹¹⁹

The issue was pursued by Mr Hall QC. The transcript of Mr Porteous' evidence is as follows: (T9145)

Q. I am not worried about your belief, I am talking about words used between the two of you. Did you firstly recall asking him whether he had been to the department?

A. I am not able to say exactly what the words were and that's where my difficulty is.

Q. No, I am not asking about exact words; I am asking whether you raised a question to the effect as to whether he had been to the department?

A. I believe I did.

Q. Well, do you remember if you did?

A. I am sorry?

Q. I am concerned with your belief you see, I am asking about whether you have a recall of asking him?

A. I recall the conversation and I recall the effect that it had on me and I believe for me to have come to that

conclusion I must have asked that question.¹²⁰

The company made the following submissions relevant to this matter:

"14.2.2 We submit that on the balance of the evidence, it should be found that Mr Murray visited the Department. Mr Porteous gave evidence of a conversation with Mr Murray in which Mr Murray said words to the effect that he had been to the Department, and he had seen the original of RT 523. There is no reason why Mr Murray would be other than truthful to Mr Porteous. It is not to the point that at that time Mr Porteous was not aware that RT 523 was in three sheets. It is common knowledge among Surveyors and Managers that original plans in the custody of the Department can be viewed only at the Department. It does not allow originals to be removed.

It is submitted that when Mr Murray visited the Department and inspected the original record tracings, it is more probable than not, that as a matter of professional competence, he did obtain copies of all three sheets of RT 523. We ask, rhetorically, what other reason could there be for Mr Murray going to the Department other than to obtain information there available? We submit that any suggestion to the contrary would logically require that Mr Murray was not truthful in his representations to Mr Porteous. Even more so, once the logic that such representation was true is accepted it follows that Mr Porteous' evidence supporting the proposition that Mr Murray had seen the original of Exhibit 13.63. If Mr Porteous had been prepared to lie to the Inquiry about Mr Murray saying he had gone to the Department and seen the originals of RT 523, it would have been a short step for Mr Porteous to have said that Mr Murray had also told him that he (Mr Murray) had seen all three sheets of RT 523, had obtained a copy of all three sheets but had decided to discard his copy of Sheet 1 as being of no further use to him."¹²¹

¹²⁰ *ibid* T9145

¹²¹ MFI 91 Vol.2 p.276/7 para.14.2.2

The submissions for Mr Porteous likewise urge the acceptance of his evidence (MFI 88 pp.47-51, 57). Mr Hall QC. made the following submission:

"Mr Porteous' approach to the question of satisfying himself, it is submitted, was haphazard and at no time did he systematically sit down to review the entirety of the evidence in order to make the judgement required of him under Clause 8. Had he done so, he would have appreciated that sheets 2 and 3 were but part of the picture. The copies of the plans identified the 1892 record tracing. The conversation with Mr Murray upon which Mr Porteous places so much reliance, he frankly conceded was one he had no precise recollection of (T9034). Counsel Assisting point out (T9035) that the particular portion of the conversation with Mr Murray had not been included in any of his accounts of the various conversations he had had. Whilst Mr Porteous asserted that the other conversations were also reflecting the essence of the discussion, it is clear it is submitted that Mr Porteous' account of the conversation is only first recorded on 24 April 1997, as set forth in paragraph 3.15 of Exhibit 63.11"¹²²

It is difficult to appreciate the force of the company's submissions. They argue for the likelihood of Mr Murray being honest with Mr Porteous and ignore the question of whether Mr Porteous can be relied upon by the Court in the accounts he gives of what Mr Murray told him. Rhetorical questions such as why would Mr Murray be going to the Department other than to obtain information, seek to conceal or avoid the question of whether he told Mr Porteous that he went there. They ignore Mr Porteous' vital interest in attempting to persuade the Court that he had discharged his obligations as mine manager under the Regulations rather than simply relying upon Mr Murray to make the necessary and appropriate searches and inquiries to establish the location and extent of the old workings.

Reference will be made elsewhere to the apparent failure of Mr Porteous, and perhaps others, to understand the extent of his legal responsibility, that it was not sufficient that he rely on the fact that he had an experienced and proficient mine surveyor. He himself had a responsibility which existed quite independently of Mr Murray.

Then the submission is made that if Mr Porteous was prepared to lie to the Court about Mr Murray saying that he had gone to the Department, then he might have been expected, it being a "short step", to say that Mr Murray had told him that he had seen all three sheets of RT 523, and had obtained a copy of all three sheets but had decided to discard sheet 1 as being of no further use to him. A "short step" this course may have been; it would also have been utterly foolish and obviously incapable of withstanding the kind of examination to which it would have been subjected.

The Court is left in doubt about the reliability of Mr Porteous' evidence; it is not in doubt as to the inability of the evidence to persuade it that Mr Murray assured Mr Porteous that he had seen RT 523. The Court believes it much more likely that no such assurance was given.

4.14 Did Mr Murray visit the Department?

The argument is simple. One would expect any competent surveyor to recognise the need to examine the original copy mine plan. Mr Murray was a competent surveyor. Therefore, it can safely be inferred that Mr Murray visited the Department, and examined the plan.

However, the issue is far from simple. One would also expect a competent surveyor to recognise the issues, and problems in the depiction of the workings on the old plan [Ex.13.63] (supra p.245). Having recognised such

problems, one would expect such a surveyor to have doubts as to the accuracy and extent of the workings depicted, quite apart from the disposition of the workings, in terms of the upper and lower seam. Having such doubts, the surveyor would then have been obliged to draw such matters to the attention of the mine manager (Clause 8(g) of the Survey and Plan Regulations). Such a surveyor would be in no position to furnish a guarantee to the manager that the workings had been accurately depicted. Yet it is said that Mr Murray never expressed doubt about the depiction of the old workings. Indeed, he is said to have expressed complete confidence to both Mr Romcke and Mr Porteous.

Accepting that Mr Murray was a competent surveyor, the inference that he did not inspect the old plan [Ex.13.63], is far more compelling than the inference that he did, but did not draw to his manager's attention the various questions and problems to which any inspection would give rise. Moreover, amongst his colleagues in the survey office (including Mr Tilden), and mine staff at Gretley, no one gave evidence of Mr Murray having visited Sydney for the purposes of investigating the Young Wallsend Colliery. No claim was ever lodged by Mr Murray for the recovery of expenses in respect of such a visit, [Ex.6.22]. Mr Murray's diaries did not suggest such a visit [Ex.6.23]. A person at the Department, Ms Roberts, who was responsible for record tracings, had never met Mr Murray (T3350). Now, of course, none of these matters, by itself, is conclusive. Ms Roberts may have been away from work. The diary of Mr Murray was an incomplete record of his daily activities. Mr Murray may have used a company car, and not incurred any expense whilst visiting Sydney. Nevertheless, taking account of all the evidence, the Court believes it far more likely that Mr Murray did not view the original record tracing (MFI 87 p.86).

4.15 Other Material Available at Gretley

Among the documents included in the records of the Gretley mine at the time of the inrush was the correspondence between the company and F A I Mining concerning the boundary in the Argenton region. Attached to the correspondence was a plan drawn by Mr Knight dated 7 September 1990 [Ex.52.01]. The plan reproduced, with the aid of a computer, the outline of the Young Wallsend Colliery. The Colliery was shown in two colours, signifying an upper and a lower seam. The outline of the Young Wallsend Seam (the upper seam) was the oval shape. The lower seam was shown as the two arrowheads with connecting roadways, consistent with the red workings in the old plan [Ex.13.63].

Mr Knight explained that he had created the computer database using RT 523, sheets 2 and 3 [Ex.13.22]. At the time he made the depiction he had doubts as to the accuracy of the outline (T7340), although he did not annotate the plan to suggest such doubt. What reliance could a surveyor, acting prudently, place upon Mr Knight's plan? The boundary plan was not a statutory plan, as defined by Clause 12 of the Survey and Plan Regulation. It was not certified by Mr Knight, though Mr Knight's initials (in typescript) appeared on the plan against the word "Drawn". Mr Knight acknowledged that it would have been good practice to annotate the plan with the doubts that he had (T7338; 7314). Nonetheless, like any plan, it had to be taken at face value. It was clearly derivative, generated by computer, from sources which were not identified. Mr Barrington Walker, made the following comment, his attention having been drawn to certain co-ordinates for the barrier which circumnavigated the Young Wallsend Colliery:

Q. Yes. But would you have any doubt as to the

accuracy of that plan so far as its closeness or its relationship to the old workings in the Young Wallsend Colliery?

- A. I don't know that I'd put a great deal of reliability on it. It was a computer-drafted thing.¹²³

The boundary plan, [Ex.52.01] furnished no basis for depicting the Young Wallsend Colliery. It was simply another plan which was derived from unnamed sources, but which was consistent with sheets 2 and 3.

Was it appropriate for the mine to rely upon the 1:4,000 series seam sheets of the Mines Subsidence Board (which had been drawn by the Department)? Mr Adam said this:

"I would not go to the Mine Subsidence Board. Their statutory purpose does not require survey accuracy. Their plans are determined by 'the best fit'. They are prepared at a high reduction ratio (1:10,000) and then expanded to 1:4,000. That process itself is likely to induce error. It is not significant to this event, but it simply underlines that the Mine Subsidence Board is not the place to go to obtain survey standard accuracy. All information they have, moreover, is derivative. The derivation process itself involves compromises and the potential for error."¹²⁴

Mr Knight gave evidence along similar lines. Referring to 1:4,000 seam sheets, he said this:

- A. They were used just for pictorial reference really. For example, if there was a mine subsidence inquiry we could use those plans as an overlay of surface plans to establish where workings were in relation to the surface. That was the sort of application they are applied to, not - certainly not for survey purposes as

¹²³ J. B. Walker T7989

¹²⁴ Ex.86.04 p.1 para.4

such.

Q. Why not for survey purposes?

A. Well, again I would regard them as sort of a picture rather than a survey plan that has no survey information as such, no - recorded on those plans, its just a pictorial reference of where those workings are in relation to the relevant survey grid.

Q. I see, but do you have an understanding, a broad understanding, as to the way in which they are compiled?

A. I do, yes.

Q. Does that have any bearing upon their use for survey purposes?

A. Well, yes, again. There - no doubt with some of those plans there was a limited amount of surveying done to establish the position of shafts or whatever, physical evidence there was of old mines, but in some cases that may not be available and the plans are put together by photographic reduction or whatever the case may be.¹²⁵

The seam sheets are accompanied by a note concerning their compilation. The text of the note has varied over time. On some of the older plans, it took the following form:

"Note: Seam sheet prepared by "Let in Process" from information available in Department of Mineral Resources, Sydney.

Workings shown may not be complete or accurately located.

Workings are of abandoned coal mines.

Compilation: photographic reductions of Record Tracings."¹²⁶
(emphasis added)

On the sheets which included the Young Wallsend Colliery the note was in these terms: [Ex.13.17]

¹²⁵ R. A. Knight T6770/1

¹²⁶ Ex.58.04 Ann.1 p.3 Not.B.

"Note: COMPILATION: Prepared by the "Let in" Process from photographic reductions of coal mine working plans and other information in the Department of Mineral Resources."

The Court doubts that a surveyor would pay close attention to such words. Nonetheless, they would be a reminder of a principle which a surveyor should have at the forefront of his mind in any event: that it would be manifestly foolish to approach a plan depicting an abandoned colliery with an assumption that it was accurate and complete.

The reference on the 1:4,000 seam sheet to the plan having been based upon "coal mine working plans and other information in the Department of Mineral Resources" suggests, no doubt, that the plan has been drawn after appropriate research. However, no one suggested that these words relieved the surveyor from the obligation to examine the source data. At best, the seam sheets were yet another set of plans, (which were consistent with sheets 2 and 3), and likewise clearly derivative from unspecified sources.

Whilst dealing with the seam sheets, reference should be made to an argument raised by the company in its submission (MFI 91 Vol.2 p.275). Mr Robinson obtained certain seam sheets from the Mine Subsidence Board in November 1996, shortly before the inrush. They included hand-drawn additions to the 1:4,000 series plan [Ex.3.04]. The plan had been updated by the Mine Subsidence Board at some time after it was supplied by the Department in 1985. Certain other seam sheets in the possession of Gretley had no such additions. It was suggested, therefore, that they must have been obtained from the Department, rather than the Mine Subsidence Board (MFI 91 Vol.2 p.275). Upon that basis the Court was invited to infer that Mr Murray had visited the Department.

That submission, however, cannot be accepted. One does not know when, or in what circumstances, the seam sheets without hand-drawn additions were acquired by the mine. They might have been provided by the Wallsend Borehole Colliery. If they came from the Board, they might have been acquired before the Mine Subsidence Board updated its copy of the sheets (M. Robinson T8725). Mr Hartley made available the updated copy to Mr Robinson in November 1996 [Ex.3.04]. Other officers of the Board may have had a different practice. There is simply no evidence as to the practice of the Board. The issue was not explored when various witnesses from the Board were called to give evidence. Even had the Department supplied the sheets to the colliery, it might have done so as the consequence of a telephone call. There are too many uncertainties to draw the inference suggested by the company.

What, then, did Michael Murray have available to depict the Young Wallsend Colliery? Referring to the material identified by the company (supra p.273) the position is as follows:

- First, the Court does not accept that Mr Murray examined the old plan [Ex.13.63] (RT 523, sheet 1).
- Second, the Court does not accept that Mr Murray examined the Abandonment Register.
- Third, the Court does not accept that historical research into the Young Wallsend Colliery was undertaken by or on behalf of Mr Murray.
- Fourth, the Court does not believe that the seam sheets in the 1:4,000 series, used by the Mine Subsidence Board, provided a proper basis for the depiction of the Young Wallsend Colliery. Nor did Mr Knight's computer drafted boundary plan [Ex.52.01].

All were plainly derivative from sources not specified.

- Fifth, the various geological reports, which contained plans of the Young Wallsend Colliery, were not drawn with survey accuracy, and also were obviously derivative. They were not a suitable source from which a surveyor could depict the old workings.
- Sixth, the certified record tracing of the Wallsend Borehole Colliery [Ex.13.20], and of the Gretley Colliery [Ex.13.29A], each incorporated an outline of the abandoned colliery. The information had plainly been derived from other sources, which were not specified. Although certified, they did not furnish an adequate basis for a surveyor to determine with confidence the workings of the Young Wallsend Colliery.

A surveyor, examining these plans, should have recognised the need to go to the source documents. No doubt, a surveyor would have noticed that the depictions in the seam sheets, geological reports, and record tracings were consistent with each other. He may even have been encouraged by that consistency. However, the question as to the source of the depiction would nonetheless remain, and would need to be examined. What else was available to Mr Murray? The only documents not dealt with thus far in this analysis are:

- First, the shaft surveys undertaken by Mr Knight in 1980 [Ex.13.15]
- Second, the top and bottom seam sheets, classified by the Department as part of the record tracing for the Young Wallsend Colliery (RT 523, sheets 2 & 3)

[Ex.13.22].

The shaft survey, as already mentioned, furnished Mr Murray with an adequate basis to accurately fix the location of the Young Wallsend Colliery, in terms of the ISG grid. The extent of the workings, and the accuracy of the plan, were matters not resolved by that plan. Could a surveyor, acting prudently, rely upon RT 523, sheets 2 and 3 as a basis for dealing with those issues? A number of witnesses attributed a special status to plans which were part of the record tracing, and which were disseminated by the Department. Mr Pala, a former mine manager at Gretley, contrasted his attitude to such plans before and after the inrush. He said this:

- Q. You might just define the changes to your thinking which you say come from hindsight and contrast them with your thinking without that hindsight.
- A. I guess in undertaking the appropriate planning and application processes there are a number of assumptions that, as mine manager, I would have made which in contrast are incorrect. The first of those is that the plans available from the Department of Mineral Resources and something that had with it the status of a record tracing could be regarded as true and accurate and reliable and one that I wouldn't have questioned.¹²⁷

Mr Porteous, when cross-examined by Counsel for the Department, Mr Leggat, said this:

- Q. .. Correct me if I am wrong, but you appear to have said on more than one occasion that in November 1996 and prior to that date you were of the opinion that the Department was in some way vouching for

the accuracy of information contained in the RT; is that what you have said in relation to the opinion that you held at those dates?

- A. I simply don't believe the Department would allow dissemination of material which was inaccurate.
- Q. Now, asking a slightly different question, and that is whether it is your view that it was the Department's role to in effect vouch for the accuracy of information contained in RTs?
- A. If the Department gave a plan the status of a record tracing then I believe that it is vouching that it is accurate to the best of the Department's knowledge.¹²⁸

The submission made on behalf of Mr Porteous repeated the same assertion:

"Mr Murray informed Mr Porteous that Sheets 2 and 3 were copies of plans held in the Department and that they obviously had the status of a Record Tracing, a status apparently given them by the Department. Mr Porteous believed that if plans such as these were being circulated by the Department as Record Tracings then they could be relied upon as being accurate."¹²⁹

A moment's reflection would surely reveal that there is no basis for such a belief. Mr Pala gave the following evidence:

- Q. But see, just to take your own knowledge of that process, you send off the record tracings or complete the sheets which are sent to you by the Department and return them to the Department every six months, is that right?
- A. Not me personally, the mine surveyor does.
- Q. Yes. But to your knowledge that is done?
- A. Yes.

¹²⁸ R. M. Porteous T9220/1

¹²⁹ MFI 89 p.51 para.4.2.6

- Q. And the Department thereafter puts them in its repository where it keeps record tracings?
- A. Yes.
- Q. It does not send out surveyors to check on your work?
- A. No.
- Q. So that, you would immediately appreciate that it is in no way vouching for the accuracy of your work?
- A. I guess that's right. ¹³⁰

Mr Adam said this:

- A. The Department, the information held by the Department is only as good as that given to it by the mines on the day on which it is supplied. That is not a guarantee that it is correct.
- Q. That statement, is that universally known amongst surveyors as far as you are aware?
- A. I don't think I could answer that question but I think that most prudent surveyors would question any information wherever the source to the extent that they satisfy themselves that it is accurate.
- Q. So just coming back to my question and dealing with it a little bit directly, imagine the situation where the surveyor says, "I don't have to spend five minutes looking at the plans, they came from the Department. I will simply accept them". How appropriate is that as an approach for a surveyor to adopt?
- A. I believe it is totally inappropriate. ¹³¹

The explanation for the belief in the accuracy of material from the Department is to be found, perhaps, in the practice of the Department before 1947. Before that time, Inspectors from the Department made a copy of the mine plan for the purposes of calculating royalties payable to the Crown. The Inspectors had the right to examine the mine plan, and, if required, enter the mine. They had an interest in ensuring, on behalf of

¹³⁰ J. A. Pala T5647

¹³¹ D. Adam T8510/1

their employer, that the copy mine plan accurately recorded the coal extracted.

However, even that explanation is not entirely satisfying. Again, a moment's reflection should have revealed that unless the mine plan were also an Abandonment Plan, so inscribed, it may not be up to date.

It was plain from the evidence that a prudent mine surveyor should have reacted to the record tracing of the Young Wallsend Colliery, held by the Department, in the following manner:

- First, RT 523 , sheets 2 and 3 (the top and bottom seam sheets) should have been recognised as insufficient to depict with confidence the Young Wallsend Colliery (K. Price T5444; R. A. Knight T6784)
- Secondly, an examination of sheets 2 and 3 should have immediately signalled the need to look at sheet 1 [Ex.13.63].
- Thirdly, that having looked at RT 523 sheet 1, questions would still remain. It should have been recognised that Sheets 1, 2 and 3 were not enough to depict with confidence the workings of the Young Wallsend Colliery. More information was needed (K. Price T5445)

Since, on the findings made by the Court, Mr Murray only had available RT 523, sheets 2 and 3, and did not view sheet 1, the basis upon which he depicted the Young Wallsend Colliery was manifestly inadequate. That inadequacy is underlined by the importance of the task being performed.

The mine surveyor knew that the colliery was full of water [Ex.14.01]. He must also have known that accurately depicting the Young Wallsend Colliery was fundamental to the prevention of inrush.

4.16 The Nature of the Manager's Duty

Attention has been drawn already to Clause 8 of the *Coal Mines Regulation (Methods and Systems of Working - Underground Mines) Regulation, 1984* in respect of the prevention of inrush. The manager has the duty to gather information in relation to disused workings which may contain an accumulation of water, where such water may endanger the mine (Clause 8(2)). It is the manager's duty to ensure that, whatever else is done, the information available from the Department of Mineral Resources is obtained (Clause 8(3)). The manager must then develop a strategy to prevent inrush, based upon that information (Clause 8(3)). The strategy must be implemented, and must work (Clause 8(1)).

It is significant that this obligation has been placed upon the manager, and not the surveyor. Reference is made again to what was said by the *Water Dangers Committee* in the United Kingdom in 1927:

"Evidence was brought before us recommending that direct responsibility under the Coal Mines Act should be placed upon the Surveyor ... The Manager is responsible for the control, management and direction of the mine, and the Surveyor is in turn responsible to the Manager for the accuracy and completeness of his work. The supervision and direction of the Surveyor's work must be part of the Manager's duty and responsibility. We are unable therefore to find that any good purpose would be served by varying the existing statutory requirements in this respect." ¹³²

In determining the nature of the Manager's duty, the context is important. Here, it was recognised by management that the Young Wallsend Colliery was almost a century old. It was known to be full of water. It was also known that there was a significant head of water, so that the water was under pressure. The decision had been taken not to drain the workings, but to rely upon a barrier to prevent inrush. The following submission was made by Mr Hall QC. which is accepted:

"In circumstances in which the old workings were not to be dewatered an exhaustive investigation of all the available information was necessary in order to locate the position and extent of the old workings." ¹³³

It was entirely appropriate that the manager should seek the assistance of his surveying staff in undertaking the research required into the abandoned colliery. The duty, however, remained that of the manager, not the surveyor. What should the manager have done in order to discharge that duty satisfactorily? Mr Barrington Walker, the retired Chief Surveyor of R. W. Miller, said:

- Q. And incidentally, you have dealt with a number of Mine Managers over the years?
- A. Yes.
- Q. The Mine Manager, of course, as you have said has the responsibility; right?
- A. That's correct.
- Q. And you are familiar with the Methods and Systems Regulations; do you remember them? Which says that the Mine Manager has the duty to ensure that steps are taken to avoid in-rush?
- A. Yes.
- Q. And that material is gathered - - - ?
- A. Material is gathered on bore holes in advance.
- Q. Including from the Department; do you remember

that?

A. Yes.

Q. Now, to what extent in your experience, if at all, do Mine Managers involve themselves in this sort of issue? Do they leave it to their surveyors or do they get involved or what happens?

A. I would expect the Mine Manager to be very much involved.

Q. In what way?

A. Particularly if you were to go along and say, well this is the only information available, and if a doubt was expressed then I would expect the Mine Manager to give you instructions to carry out further research on it and be ultimately - be completely involved with that research that you might do.

Q. So, you are gathering material putting it before him, giving your view and explaining what inferences you derived from that material?

A. Derived from it. To see if he made the same conclusion as you have. ¹³⁴

Mr Knight gave evidence along similar lines. He said:

Q. What would happen thereafter in terms of the gathering of information, assuming you were given that task and you set about it in the way that you have in the last day or so, examining the material at your disposal and seeking out further material and ultimately examining sheet 1, exhibit 13.63, what would be the next step you having gathered that material, you would then go back to the mine manager?

A. Yes, perhaps present that information on a plan so it can be discussed with him, yes.

Q. That is what I am interested in, the way in which you would do that and the discussion that would take place in your experience so far as the resolution of that issue was concerned, would you simply give him the bottom line saying set out your barrier from there, or would you take him through it, or what would you

do?

- A. I expect I would take him through it, explain how I come to my conclusions, any concerns that I may have, and I would present that to him with the relevant information that I gathered, the plans.¹³⁵

Mr Knight also dealt with the duty of the mine manager, in circumstances where a previous manager had undertaken the research, and mapped out the strategy for avoiding inrush. He said:

- Q. Mr Knight, I will put it again: in dealing with the situation where a 138 application has been approved for mini-walls 39 to 45, as in this case and that mining has commenced and that the mine manager is a different person at that stage to the person who was involved back at the 138 stage and that in that context a mine manager seeking to be briefed, as it were, on what research had gone into the location of the old workings would be concerned, you would expect, to ascertain what information had been gathered?
- A. Yes.
- Q. And what conclusions or analyses has been made on the material?
- A. Yes.

Mr Knight added:

- Q. But, of course, it is not just seam sheets and the like, it is a question also in that situation of the mine manager saying, well, where is the analysis of all of that material, is that right?
- A. Well, I guess that would be reasonable, that's presuming, I mean, it's reasonable for him to request to see all the information that is available in relation to the matter.
- Q. That may include the primary material that has been gathered in and the work that has been done on the primary material?

A. Yes.¹³⁶

Both Mr Romcke, and Mr Porteous, as managers of Gretley, had extensive dealings with Mr Murray, the mine surveyor. Both had confidence in Mr Murray. That confidence, no doubt, influenced the way in which they approached their duties under Clause 8. Mr Knight said:

Q. But how, in your experience, does the manager discharge that duty, that is making sure that the various issues have been addressed?

A. Well, as I mentioned before, it really depends on the confidence that the manager has in his surveyor. If he would have a high degree of confidence no doubt he would rely on the advice of his surveyor. If he was less confident in the work he may want to question it further.

Q. But have you had the experience of someone who simply relies on the bottom line without seeking to understand in any way the way in which the surveyor might have reached his conclusion?

A. I have no doubt there are managers that would work that way, yes.

Q. But in the context of this particular proposed development and the hazard of in-rush which it presented, what would be your expectation as to the involvement or otherwise of the manager?

A. I would have expected that he would be very much involved and had I expressed concerns about the nature of those workings and a proposal such as that I would have been a bit disappointed if he did not acknowledge those concerns.

Q. But if you did not express concerns but simply stated your view, namely that the barrier should be in a particular position given the nature of the development and the nature of the hazard, what would your expectation be as to the manager's response to that? Do you understand?

A. I am not sure that I do understand but with an issue such as that I would have expected that the manager

would have had a significant involvement in the exercise.¹³⁷

Mr Porteous acknowledged that it was a manager's responsibility to involve himself in the depiction of the old workings. He said:

- Q. To what extent is a manager, in your view, your understanding, obliged to involve himself in the examination of the analysis of whatever material the surveyor may gather together relevant to the issue of the reliability of particular plans?
- A. I believe the manager has to involve himself in it.
- Q. And in what way would you believe that the manager must involve himself, what should he do?
- A. I believe in examination of the material that the surveyor had gathered.

His evidence continued:

- Q. With a view to his reaching his own judgment no doubt assisted by the surveyor as to the reliability and the completeness of the evidence that has been assembled?
- A. Yes, that is what you would want to do in your examination.
- Q. Is that what you did?
- A. Yes.
- Q. And you would not see it as permissible or an adequate discharge of the manager's duty to simply solicit from the surveyor some form of guarantee as to what it all meant without the manager himself independently examining the evidence to see whether or not the view of the surveyor was justified?
- A. Yes, I believe in this case, I had to look at the plans myself which I did do.
- Q. And it would not be good enough just to ask for some sort of guarantee from the surveyor?
- A. Ultimately the surveyor must come to a conclusion

and the mine manager is going to be influenced by the surveyor's conclusion because he is the expert in that area.

Q. But he would need to look behind that conclusion in order to understand it and to satisfy himself that it was a valid conclusion on the evidence?

A. Yes.¹³⁸

The submission made on behalf of Mr Porteous said:

"This does not mean, of course, that Mr Porteous believed that he could have blind faith in what the surveyor told him without investigating the matter himself. He believed that he had to become significantly involved in what the surveyor had done and make his own examination of the various plans and other materials examined by the surveyor."¹³⁹

The Department made submissions along similar lines:

"Mine Manager's acceptance of, and dependence on, assurances by mine surveyors.

The Director General does not propose to make any submission on this issue, beyond the observation that a manager has a clear duty under clause 8 of the *Methods and Systems Regulation* to satisfy himself of certain matters. If the substance of that duty is informally delegated to the mine surveyor, it is nevertheless incumbent on the manager to conduct some check on the surveyor's work to ensure that it has been conducted to the standard required by the regulation."¹⁴⁰

The company, however, put the matter somewhat differently. Its submission to the Court was as follows:

¹³⁸ R. M. Porteous T9020

¹³⁹ MFI 88 p.44 para.4.9

¹⁴⁰ MFI 92 p.191 para.C17.4

"It is recognised that it is not a discharge of his statutory duty if the Manager simply abrogates such duty and seeks to pass it on to his Surveyor. It is recognised in the discharge of his duty a Manager must at least turn his mind to what is required of him. We submit, however, that a Manager is entitled to believe that those experts upon whom he must, perforce, rely, will professionally go about their statutory duties (and any other tasks assigned to them by the Manager). We submit that a Manager is entitled to rely upon such experts in the course of performing their statutory duties and such other tasks, raising with the Manager any concerns, doubts, or misgivings arising out of the activities of such experts, whether such activities were part of their discharge of their own statutory duties or only part of their responding to directions, questions or requests for assurances given, asked or sought by the Manager." ¹⁴¹

(emphasis in the original)

The company added:

"Further, in our submission, it is not necessary that the Manager must personally be in actual physical possession of the relevant information, in the sense of having it in his office. In our submission, it is sufficient that the Manager takes steps to ensure that the information is obtained by some relevant person at the mine (usually a person in the survey office) and that the Manager knows where such information is kept in the event that he desires to look at the information." ¹⁴²

Physical possession of all the relevant information by the manager may not be necessary. Here, for instance, it may have been enough had the mine surveyor given the manager a detailed description of the old plan (RT 523, sheet 1), or perhaps a copy of the relevant part. Simply arranging for the information to be obtained, and to be on hand, is not sufficient. The

¹⁴¹ MFI 91 Vol.2 p.426 para.17.7

¹⁴² *ibid* para.17.9

manager must determine whether the information gathered by the surveyor is complete, and reliable. Forming a judgement on such issues would not ordinarily be possible without the manager, himself, undertaking an examination of the material which had been gathered.

4.17 The Actions of Mr Romcke

On 6 September 1994 Mr Romcke submitted an application under S138 of the *Coal Mines Regulation Act 1982* to the Department seeking approval to extract coal in a development known as MW39-45. The development included the panel which became the site of the inrush a little over two years later (by which time the number had been altered from MW44/45 to MW50/51). Mr Romcke is a mining engineer. He graduated with honours in 1983. He worked in a number of collieries after graduation [Ex.61.04 pp.4-9]. He joined the Oakbridge Group in June 1992, as Deputy Manager to Mr Porteous at the Ellalong Colliery [Ex.61.04 p.9 para.31]. On 11 June 1993 he was appointed mine manager at Gretley, succeeding Mr John Pala.

Mr Romcke said:

"As part of my study for my degree in mining engineering I undertook three subjects in surveying which included the theoretical application of surveying as well as practical application of surveying. I was taught the basics of utilising a theodolite and level and how to close a traverse and how to make the appropriate calculations. These courses gave me an understanding of the basic techniques involved in mine surveying which was backed up by practical application at Cordeaux Colliery during the early years of my training. Since my period at Cordeaux Colliery, I have not undertaken any specific work relating to mine surveying and do not consider myself an expert in this field. As part of the process of studying for the Mine Manager's certificate of competency,

I gained an understanding of the legislation governing mine surveying in coal mines in New South Wales and the standards detailed in the Chief Inspector of Coal Mines' Surveying and Drafting Instructions." ¹⁴³

When examined, Mr Romcke gave the following evidence:

- Q. And you have some experience with the basic concepts of surveying?
- A. Yes.
- Q. And, indeed, you set out in your statement that you, as a student, like everyone no doubt, have undertaken some rudimentary surveying. Is that right?
- A. Yes.
- Q. In your time you have had a lot of plans put before you, no doubt by various surveyors and by others?
- A. Yes.
- Q. And you have made assessments of them?
- A. I haven't made judgments on whether those plans are - are correct or not.
- Q. You have made judgments as to whether or not those plans appear to you to be reliable or not reliable or if there is something odd about them or whatever?
- A. I've used those plans to exercise my functions as a mine manager.
- Q. But see, in the context of the bottom seam you took one look at it and you said: look, why are they such an odd shape? You knew that just from your experience and from your knowledge of old workings and so on. Is that not right?
- A. Yes.
- Q. I assume that you bring, you having the ultimate responsibility, a critical eye to bear upon what is put before you?
- A. Yes.
- Q. And you ask questions designed to elucidate issues which you believe are relevant to the ultimate judgment which needs to be made?
- A. Yes. ¹⁴⁴

¹⁴³ Ex.61.04 p.60 para.153

¹⁴⁴ J. F. H. Romcke T5977/8

What, then, did Mr Romcke do in order to discharge his duty under clause 8 of the Method and Systems Regulation to prevent inrush? At some time before December 1993 Mr Romcke had a conversation with the mine surveyor, Mr Murray to the following effect:

"I then said: "Can you take me through how have you taken onto Gretley's mine working plan and record tracings the old workings for the Wallsend Borehole Colliery and the Young Wallsend Colliery?"

He said: "I obtained from Coal and Allied all relevant plans including their mine working plan and their mine record tracing which also showed the Young Wallsend Seam workings in the Young Wallsend Colliery. I obtained from the Department, old plans showing the workings of the Young Wallsend Colliery in the Young Wallsend Seam and the Borehole Seam." " 145

No plans were produced on this occasion (T5963).

In December 1993, in the context of another application under S138 (in respect of MW35-36), Mr Romcke spoke again with Mr Murray. The application being examined included a plan which reproduced the workings believed to be in the lower seam. The plan was in the form of the familiar arrowheads with connecting roads. Mr Romcke's account of that conversation was as follows:

"I said: "Michael, why are these workings shown in the Borehole Seam such an unusual shape?"

Michael said: "Would you like to see the old plans?"

I said: "Yes." "

Mr Murray left the room, and returned after five minutes with a roll of plans.

Mr Romcke described what then occurred in these words:

"He placed the roll on the table in the conference room. He proceeded to open the roll out with his hands and I helped him hold them out. The top plan in the roll appeared to be the same as the depiction of the workings in the Young Wallsend Seam in the Young Wallsend Colliery as appeared on the mine working plan and other plans in use at that time at Gretley Colliery and displayed in various parts of the colliery. The plan was approximately two feet long and one and a half feet high. The plan had the words "Young Wallsend" on it. I think it also had the words "Top Seam" on it. The scale shown on the plan was an imperial scale - an old scale. It showed the location of two shafts. It showed a series of wide bords but no areas where coal pillars had been extracted. I do not recall seeing any date on the plan. There appeared to be no company name on the plan. There was no legend on the plan. I have no recollection as to whether there was anything written on or near the edges of the plan. It appeared to be a copy of the plan. The copy plan was opaque. It was not a photocopy." ¹⁴⁶

Mr Murray also produced the bottom seam sheet (RT 523, sheet 2 [Ex.13.22]). Mr Romcke said this:

I said: "What does "Bottom Seam" mean?"

He said: "Bottom Seam refers to the Borehole Seam and Top Seam refers to the Young Wallsend Seam."

I said: "How do we know that?"

He said: "The RLs are shown on the plan in feet. We have correlated the surface expression of the

shafts, shown on the plan. We have compared the RLs with our own data on the depths of the Young Wallsend Seam and the Borehole Seam."

I then said: "How have we checked that the surface location of the shafts is shown correctly in relation to our underground workings?"

He said: "I have been right through a detailed assessment of the ISG co-ordinates in relation to the survey of these shafts with current Department of Lands survey marks in the Edgeworth area." " 147

Mr Romcke then sought an assurance from Mr Murray. His statement was in these terms:

"I said, pointing at the plans:

"Are you absolutely certain that these locations shown have been correlated back with our survey data for Gretley and can you guarantee me that this is accurate?"

He said: "I am absolutely positive that correlation is correct within the normal orders of accuracy of surveying. I went through the process of double checking this information when I converted all our survey data to the ISG co-ordinates and then as part of the process of compiling our computer data base."

I said: "Well, if you guarantee me that this plan is accurate, I accept it as correct. Where did the plans come from?"

He said: "They came from the Mines Department." "

Mr Romcke added:

"Although Michael Murray did not show me any other plan during the above exchange, I recall that there appeared to be several other plans below the second plan that I was shown." ¹⁴⁸

Although the issue arose in the context of an adjacent development, Mr Romcke regarded the response of Mr Murray as covering the development which would surround the Young Wallsend Colliery (MW 39-45), which was proposed. He said this:

- Q. If you had remained mine manager, would you have expected as you got closer to the Young Wallsend Colliery to have revisited the issue of the depiction of the Young Wallsend Colliery and the reliability of the plans?
- A. No.
- Q. You would have been content to rely upon the information which you had to that point. Is that right?
- A. I believed the information we had to the point was reliable. ¹⁴⁹

Mr Romcke was also aware, from the time he worked at FAI Mining, of the boundary plan drawn by Mr Knight [Ex.52.01] (T6004). That plan reproduced the same outline as emerged collectively from RT 523, sheets 2 and 3. There was no indication of doubt upon Mr Knight's plan. Mr Romcke was conscious of Mr Knight's considerable reputation as a surveyor (MFI 91 Vol.2 p.348). Further, the company's submission on this aspect was as follows:

"By that stage, Mr Romcke knew that at least three Mine

¹⁴⁸ Ex.61.04 p.30/1 para.103

¹⁴⁹ J. F. H. Romcke T6006

Surveyors had been sufficiently satisfied as to the accuracy of the plans to have depicted the shape and extent of the Young Wallsend Seam workings in the Young Wallsend Colliery, without qualification. None of them made any notations including any doubt.”¹⁵⁰

The three surveyors were identified as Mr Knight of FAI Mining, Mr John Walker of the Wallsend Borehole Colliery, and Mr Murray, the mine surveyor at Gretley (MFI 91 Vol.2 p.355 para.15.4.12).

Were these steps an adequate discharge by Mr Romcke of his obligations as mine manager? Specifically, did Mr Romcke satisfactorily discharge the duty imposed by Clause 8 of the Methods and Systems Regulations? The company, on behalf of Mr Romcke, made the following submission:

“We submit that Mr Romcke had no need to seek the guarantee he did from Mr Murray. Nevertheless, he did so. He was no doubt aware of the obligation of the Mine Surveyor pursuant to Clause 8(g) of the Survey and Plan Regulation that if the Surveyor has any doubt as to the accuracy of any plan not prepared by him, to draw such doubt to the attention of the Manager, and the obligation of the Surveyor pursuant to Clause 2.6 of the Surveying and Drafting Instructions if the position of the workings is in doubt to suitably endorse the mine working plan (and hence the record tracing).”¹⁵¹

The submission added:

“We submit that he properly carried out his statutory duty. He was entitled to, and did, rely on his Mine Surveyor’s, Mr Murray’s expertise, in so carrying them out and Mr Romcke acted as a prudent Mine Manager, in carrying out his statutory duties in accordance with Clause 8 of the Methods

¹⁵⁰ MFI 91 Vol.2 p.352 para.15.4.7

¹⁵¹ MFI 91 Vol.2 p.352 para.15.4.6

and Systems Regulation." ¹⁵²

The submission made on behalf of the relatives of the deceased miners was in these terms:

"In the submission of the relatives, the statutory obligation imposed on the mine manager requires of the mine manager, where he employs others to assist him, to establish the methodology and system under which his assistants are to work, thereby ensuring that the investigations are targeted appropriately and there is feedback on the results of investigations and analysis, so that the mine manager may, through that process, apply his mind to the essential matters so that independently his judgment will be his own." ¹⁵³

With respect to Mr Romcke, the submission said:

"The further conclusion follows, it is submitted, that Mr Romcke did not take steps to involve himself in a way which would ensure that necessary inquiry into the old workings was undertaken. The path leading to Exhibit 13.63 was not followed. There is absolutely no justification for that omission. It is no answer, it is submitted, for Mr Romcke to say that Mr Murray was a mine surveyor of high reputation and for that and other reasons he was entitled to rely entirely upon him to have undertaken the required research. For reasons developed elsewhere, the limited discussions Mr Romcke claims he had with Mr Murray and which he relies upon do not constitute the involvement of which Mr Knight spoke. All professionals are subject to error and it was Mr Romcke's responsibility to ensure that he involved himself in a way which would provide him with the assurance that Mr Murray had undertaken full inquiry.

It also follows, in the submission of the relatives, that had Mr Romcke a system in place which would have enabled him to

¹⁵² MFI 91 Vol.2 p.356 para.15.4.12

¹⁵³ MFI 87 p.91

have had meaningful involvement in the process, then Exhibit 13.63 would have been discovered and proper analysis inevitably would have led to the conclusion that the only safe way to proceed was to calculate the barrier from the southernmost point of the red workings on Exhibit 13.63. In other words, the failure to have a system and for Mr Romcke to play his role in it is a direct cause of the inrush of 14 November 1996." ¹⁵⁴

In fulfilling the obligations under Clause 8, the mine manager may choose to direct the surveyor as to the research which should be undertaken. However, a competent surveyor may, without direction, undertake that task, recognising that it must be performed. What the manager must do is review the completeness and reliability of the material collected. The manager's confidence in the surveyor does not relieve him of that obligation, and nor does the surveyor's guarantee. Here, Mr Romcke substantially relied upon a guarantee from Mr Murray. He was shown only two plans, the top and bottom seam sheets (RT 523, sheets 2 and 3). The other plans in the possession of Mr Murray, which Mr Romcke chose not to examine, we now know did not provide an adequate basis upon which the old workings could confidently be depicted. We should catalogue those matters which were relevant, and which were not uncovered by the approach which Mr Romcke chose to take:

- First, Mr Romcke did not determine whether Mr Murray had procured all the information available from the Department.
- Second, he did not determine whether Mr Murray had examined the original of any plan held by the Department.
- Third, he did not learn, therefore, that there was an

old copy mine plan [Ex.13.63] being RT 523, sheet 1, even though it was referred to at the foot of sheets 2 and 3 which he was shown.

- Fourth, he did not ask Mr Murray to identify the plans he had obtained, and relied upon (T5968). Nor did he ask to see those plans (T5968).
- Fifth, he did not ascertain, therefore, whether Mr Murray had consulted the Department's Abandonment Register, or whether there was an Abandonment Plan. He understood, however, that to be fully confident of the position of the workings, the surveyor would need to obtain the Abandonment Plan (T5973).
- Sixth, Mr Romcke did not determine whether historical research into the Young Wallsend Colliery had been undertaken, and if so, what had been determined (cf. T6024).

Moreover, Mr Romcke, in his conversation with Mr Murray, clearly did not closely examine RT 523, sheets 2 and 3. He did not look at either with a view to determining whether they were reliable. Aside from the odd shape of the workings in the bottom seam sheet (RT 523, sheet 2), Mr Romcke did not refer to the many disturbing, and anomalous features of sheets 2 and 3, to which reference has already been made (*supra* pp.225, 228). Even the aspect which originally sparked Mr Romcke's interest, namely the odd shape of the workings, was not pursued. Mr Romcke said this, in the context of the bottom seam sheet:

- Q. So that, I am just wondering, did this raise in your mind any questions as to whether or not these plans were reliable or complete?
- A. No. No. I - I relied on - on Michael's knowledge of the

area to satisfy myself that these were the correct plans.¹⁵⁵

All Mr Romcke really had was Mr Murray's guarantee. Mr Romcke gave the following evidence:

- Q. Sorry, sheets 2 and 3, you are right. He had showed you sheets 2 and 3, the top and bottom seam?
- A. He showed me those two plans, or something similar to those two plans.
- Q. Yes?
- A. There.
- Q. Those two plans, you noticed, would hardly give you confidence in the issues as to the extent of the workings, would they?
- A. Not by themselves.
- Q. No. You say he had a roll of plans. Is that right?
- A. Yes.
- Q. He did not seek to show you any other plans in that roll, is that right?
- A. No.
- Q. And you did not ask him to do so?
- A. No.¹⁵⁶

That is not good enough. Mr Romcke ought to have examined the material gathered by Mr Murray, and made his own judgment. The Court believes Mr Romcke did not discharge appropriately the obligations upon him as mine manager.

4.18 The Actions of Mr Porteous

Mr Porteous provided the following response to a question asked by the Inspectors:

¹⁵⁵ J. F. H. Romcke T5970

¹⁵⁶ ibid T5974/5

"Question 21: Did you question the accuracy of the plans that you relied upon? If so:
How did you verify their accuracy?
How accurate were the plans?

Answer: Yes, I discussed the accuracy of the plans with both Michael Murray and Mark Robinson. I verified the accuracy by discussion with both surveyors.
At the time of the discussion I had no reason to believe they were inaccurate, but I now believe they are inaccurate."¹⁵⁷

Earlier in this Report, when examining whether Mr Porteous received an assurance from Mr Murray that he had been to the Department, and had seen the original plans, the Court set out the text of a number of statements made by Mr Porteous (supra pp.291). Mr Porteous said this, referring to Mr Murray:

"He told me he had plans from the Department and neighbouring collieries. He showed me plans, including a copy of the Record Tracings of the Top Seam and copy of the Record Tracing of the Bottom Seam. He satisfied me that he had studied all the available information."¹⁵⁸

Mr Porteous added:

"When I made that decision not to dewater those old workings and to leave the 50m barrier, I was confident of the accuracy of the plans of the Wallsend Borehole Colliery because Michael Murray guaranteed the accuracy of the plans."¹⁵⁹

¹⁵⁷ Ex.63.03

¹⁵⁸ Ex.63.11 p.14. para.3.15

¹⁵⁹ Ex.63.11 p.15. para.3.23

On 6 May 1997 Mr Porteous made a further statement providing details of his conversations with Mr Murray. In April 1995 he spoke to Mr Murray in the Survey Office concerning the record tracing of the Wallsend Borehole Colliery. The conversation was as follows:

"A few days later, I went up to his office. He had the RT of Wallsend Borehole Colliery out on his table. I looked at the plan, and it was one that I had not seen before. We then had a conversation part of which was to the following effect:

I said: "What is this plan?"

He said: "It's the Wallsend Borehole Record Tracing."

I said: "What are you doing."

He said: "I'm getting the levels off this plan for the job you asked me to do."

I saw that the plan had a half of the football shape workings of the Young Wallsend Colliery depicted on it.

I pointed to the Young Wallsend Colliery workings on the plan, and I said: "Where's the other half of this?"

He said: "I've got it on another Record Tracing."

He then went into the plan room and came back with plans. He put one out on the table on top of the other sheet, and we discussed the Young Wallsend Colliery workings. The plan depicted the Young Wallsend Colliery workings in the whole of the football shape. The plan was labelled "Top Seam".

He said: "This is the RT for these workings."

I said: "How do you know it is the Young Wallsend seam?"

He pointed to the depth of the shaft which was shown on the plan as 460' and he said: "This is the depth of the seam at

this point."

We discussed the two plans, the small size of the Young Wallsend Colliery workings, and that they were unlucky to sink shafts between two sets of dykes, but I do not recall what else we spoke about.

To the best of my recollection, I also saw at this time a Bottom Seam plan of the Record Tracings of the Young Wallsend. One of us remarked about the unusual shape of those workings, which were in the arrowhead shape, but I do not recall what else was said about the Bottom Seam plan."¹⁶⁰

On 8 October 1997 Mr Porteous made a further statement, referring to the same conversation. He said this:

- "8. In April 1995, when we were about to commence first workings for MW41, I then gave detailed consideration to the proposals in the s138 application for mining in the vicinity of the Young Wallsend Colliery.
9. It was then that I examined the situation in detail with Michael Murray.
10. He had the RT of Wallsend Borehole Colliery in front of him when I got to his survey office. I asked him what plans and information he had that enabled him to depict the old workings as they were shown on our plans.
11. He went into the plan room, and came back to the survey office with plans. He had the top seam plan and the bottom seam plan, and the Robin Knight survey plan. He already had on his table the Wallsend Borehole Colliery RT, and he had the mine plan in the survey office. He put the plans out on the table and I studied them."

The statement continued:

- "12. He said the top seam sheet and bottom seam sheet were copies of the RT of the Young Wallsend Colliery which he had obtained from the Department.
- 13. I noticed ... that it said top seam and not Young Wallsend seam and asked him how he knew it was the Young Wallsend seam. He pointed to the depth of the shaft and said that it correlated with the Young Wallsend seam at that location.
- 14. I asked him if he had seen the originals and he said that he had seen the originals.
- 15. I saw that there was a dotted line on the portion boundaries, and I asked him what that meant. He said that it had been re-surveyed by Mr Thomas. Michael said he had obtained a plan from Robin Knight that showed him exactly where the shafts were located in relation to other survey marks on the surface. He said that he had re-checked Knight's calculations.
- 16. I studied the bottom seam plan, and one or other of us said the workings were in a peculiar shape. Michael told me there probably were some other workings in that seam that were not shown.
- 17. Michael told me that the work in the Young Wallsend Colliery had gone on in two seams, and that it had taken place around the turn of the century.
- 18. Michael Murray told me the top seam sheet and bottom seam sheet from the Department were accurate, and that he had in the past found old plans such as those to be accurate. He said he had examined all the information that was available and that his depiction of the workings was accurate."

Mr Porteous concluded his statement with these words:

- "19. Having gone through all the plans with Michael Murray, and having seen other plans depicting the old workings including the Gretley RT, I was satisfied the depiction of the location and extent of the workings was accurate." ¹⁶¹

Mr Porteous elsewhere specifically identified the plans which he discussed

with Mr Murray. They included the following: [Ex.63.14 p.1 para.1]

PLAN	
• Plan of Gretley in manager's office	
• Cadastral plan of Gretley area, & workings underlay, in conference room	
• Top Seam sheet & Bottom Seam sheet	Exhibit 13.04
• Gretley Mine Working Plan	
• Gretley Record Tracing	Exhibit 13.29 (A)
• Borehole seam sheet	Exhibit 13.16
• FAI plans of workings of West Wallsend Colliery and Young Wallsend Colliery	
• BHP shaft survey plan by R Knight	Exhibit 13.19
• Wallsend Borehole Colliery Record Tracing	Exhibit 13.20
• Plans accompanying s138 application for MW 39 - 45	Exhibit 14.12 Exhibit 14.07

Mr Porteous was conscious of the need to become significantly involved in the issue of the depiction of the old workings (T9020), and sought to do so. He said:

- Q. Did you ever ask him precisely what he had gathered together in order to reach the view which he was providing you?
- A. Yes, I asked him of his - for the plans that he had used.
- Q. And the plans that he had used, he produced, were Knight Top and Bottom Seam sheet and Wallsend Borehole?
- A. Yes.
- Q. And that is it?
- A. Well, I had previously seen the Borehole Seam sheet

and so I knew that was within the confines of the colliery.

Thereafter, Mr Porteous gave the following evidence:

- Q. But in terms of what he had relied upon which you asked him to produce to you, he identified the four that I have enumerated - that is, Knight, Wallsend Bore Hole, Top and Bottom Seam sheets?
- A. Yes. ¹⁶²

Counsel for Mr Porteous indicated that these were the plans upon which Mr Porteous placed most reliance (MFI 88 p.54 para.4.39). In the context of those plans, the following questions were put to Mr Porteous:

- Q. But so far as extent is concerned I want to suggest that the other plans, that is Top and Bottom and Wallsend Bore Hole, were incapable of reliably satisfying - sorry - ought to have been recognised by you as being incapable of reliably depicting the extent of the workings. What do you say?
- A. No, I disagree.
- Q. You disagree because of what?
- A. Because of the other plans that I had seen from that era, and my experience that the plans had always been accurate and Michael Murray's confirmation to me of just that, that he had always found old plans to be accurate as well.

Counsel Assisting then put the following questions to Mr Porteous:

- Q. We are not just dealing with the objective fact. I am dealing with whether or not on their face you can now see with the benefit of hindsight - the hindsight coming from you sitting here day in and day out and hearing various people talk about the plans and you,

no doubt, examining critically those plans yourself and re-examining them - can you see now that there is nothing on those plans that you have nominated which was capable of reliably demonstrating the extent of the workings? Just so that you will not be ... (misled), I am going to ask you, you having answered, I am going to suggest that it hindsight does not come into it, so I do not want you to be in any way trapped. Do you understand?

A. Yes.

Q. But do you now recognise that that material was incapable of demonstrating that fact?

A. Well, I based my judgment on what I had seen in the past and what my experience had been and the assurance I received from Michael Murray about the accuracy of the plans, and the status of a record tracing, and all of that told me that the plans depicted the extent - the full extent - of the workings.

(parenthesis added)

The examination continued as follows:

Q. What you seem to be saying is that you looked at the material and that was the evidence before you but you brought to bare (*sic*) in interpreting that material certain assumptions and certain beliefs which influenced your view. That is what you are saying?

A. Yes, I believe we make a lot of decisions like that.

Q. But stripped of those assumptions and those beliefs and simply concentrating on the material, in other words, if you do not approach the task with an assumption that all plans are accurate, if you are critically examining the evidence in front of you then I want to suggest that it is apparent that there is nothing in that material which is capable of demonstrating that that plan reliably depicted the full extent of the workings. Do you agree?

A. Well, every other surveyor - every surveyor believed it and other mine managers' believed it.¹⁶³

Mr Porteous' thinking was conditioned by three assumptions. They were:

- First, Mr Porteous believed that sheets 2 and 3 of RT 523 were plans circulated by the Department as Record Tracings, and could, therefore, be relied upon as being accurate" (MFI 88 p.51 para.4.26).
- Secondly, Mr Porteous believed that it was appropriate to rely upon certified plans as being correct (MFI 88 p.52 para.4.29 and 4.31). Hence, he could accept as reliable the Record Tracings of the Wallsend Borehole Colliery [Ex.13.20], and the Gretley Colliery [Ex.13.29A]
- Thirdly, in Mr Porteous' experience old plans were accurate (T9050). If there were inaccuracies he assumed that they were likely to be no more than "a handful of metres" (T9014). Protection against that sort of error was provided by Clause 9 of the Methods and Systems Regulation (the Borehole Rule).

As demonstrated already, each of these assumptions was unwarranted. Mr Porteous was by no means alone in making such assumptions. Mr Romcke, and others, approached the same task with much the same frame of mind. The submissions for Mr Porteous made the following concession, though insisting that it was the consequence of hindsight:

"The plans which Mr Porteous saw in accordance with his evidence and statements, were, with hindsight, not sufficient to determine the reliability of the depiction of the Young Wallsend Colliery. It was necessary for there to have been an examination of Sheet 1. Mr Porteous knew that he was examining copies when he was shown Sheets 2 and 3 but he was assured by Mr Murray that Mr Murray had seen the originals and that he had examined all relevant information. It is submitted that Mr Porteous was justified in relying upon

this assurance together with his own examination.”¹⁶⁴

The submission made on behalf of the relatives directed attention to certain answers by Mr Porteous, which were as follows:

- Q. Did you ever direct any enquiries to the existence of some further plan in relation to that colliery?
- A. No, I thought that only sheets 2 and 3 existed, what we now refer to as sheets 2 and 3.¹⁶⁵

In the context of these answers, the submission was as follows:

“It is apparent that if Mr Porteous had directed that full and proper enquiries be made with the Department, he would without difficulty have ascertained the existence of Exhibit 13.63. The fact that he never had access to or knew of that record tracing itself reveals a failure by him to take available steps to have obtained it. There was ample time for these enquiries to have been undertaken as Mr Porteous first saw sheets 2 and 3 as long ago as April 1995 (T8980)”¹⁶⁶

The submission also asserted the following:

“Mr Porteous acknowledged that he had sufficient grasp of surveying principles to be able to examine plans. It is obvious in this case that had he examined the plans carefully it would have become apparent that sheets 2 and 3 were derivative documents, and to properly examine the issue he would need to have access to the original record tracing, and need to have confirmation that that tracing was sufficiently reliable for a barrier strategy alone to be relied upon. Even the most cursory examination would have revealed that sheets 2 and 3, the Wallsend Borehole Colliery working plan (Exhibit

¹⁶⁴ MFI 88 p.165

¹⁶⁵ R. M. Porteous T8980

¹⁶⁶ MFI 87 p.133

13.20) and the Gretley working plan (Exhibit 13.29A) were all secondary plans, and that they were quite inadequate to establish accuracy and reliability for the purpose of safeguarding human life." ¹⁶⁷

The submission asserted that the real basis for Mr Porteous' satisfaction was his confidence in Mr Murray, and the assurance which Mr Murray had provided. The submission said:

"In these circumstances it is submitted that the real basis upon which Mr Porteous relied was not primary material, nor independent enquiry with a probing mind to satisfy himself as he was required by law to be satisfied, but reliance upon what he saw as assurances or guarantees." ¹⁶⁸

The submission continued:

"There is no attempt here by Mr Porteous to advance any facts indicating anything approaching independent investigation. His "revisiting" the accuracy and reliability of the plans by relying upon what he saw as the "assurances", it is submitted, amounts to a non-performance of a mine manager's obligations arising under Clause 8. It is not a checking that all information that is available has been obtained, nor a checking as to the quality and reliability of the source data, it is not checking as to how information obtained was analysed, but simply comes down to reliance upon one conversation with Mr Murray some years before in a different context, and with a very belated conversation with Mr Mark Robinson in early November 1996." ¹⁶⁹

The Court will deal later with the conversation with Mr Robinson. It did not materially add to the evidence before Mr Porteous.

¹⁶⁷ MFI 87 p.137

¹⁶⁸ MFI 87 p.136

¹⁶⁹ *ibid*

The submission on behalf of Mr Porteous relied heavily upon certain evidence given by Mr Anderson. Mr Anderson said:

- Q. Well then, putting yourself in the position of a mine manager, if the position was that you had been informed by the main (*sic*) surveyor, firstly, that he had been to the Department, secondly, that he had viewed the original record tracing, thirdly, that he had possession of sheets 2 and 3 at least, fourthly, that he had plans - other plans obtained from neighbouring collieries which depicted the workings in the - the old workings, that is, in the Young Wallsend seam as being the oval shape, and fifthly, that as far as you are concerned as mine manager the surveyor was a man with an outstanding (reputation), in that position, if the mine surveyor told you as mine manager that he was confident after viewing all of those materials and having the reputation he had, that he had correctly depicted the old workings in the Young Wallsend seam, would you be confident of that?
- A. If he'd seen the original record tracing in addition to the material that we've just - you've just mentioned, yes, I would.
- Q. You, as mine manager, would then be confident to act upon any plans drawn by that surveyor depicting that oval shape as being in the Young Wallsend seam?
- A. Yes, if I'd satisfied myself that he'd seen the original record tracing and was confident of it and could discuss the matter coherently, I would.¹⁷⁰

The submission concluded with these words:

"It is submitted that Mr Porteous did all that could be expected of a prudent mine manager so far as the examination of plans was concerned. He knew he must have a significant involvement in the exercise, and he did. He went through the plans with his surveyor. He was informed by his surveyor that he, the surveyor, had examined all the relevant material, including material in the Department. He was

informed by his surveyor that he, the surveyor, had examined the original record tracing. He saw nothing, himself, in the material he examined that caused him concern. He had confidence in his surveyor. His surveyor did not express any doubts. He accepted the final conclusion of his surveyor. The situation of plans being misinterpreted in the manner that this occurred is unique." ¹⁷¹

Mr Porteous unquestionably went further than Mr Romcke. However, he did not go far enough. He did not uncover the following matters which were fundamental to the formulation of a strategy which would prevent inrush:

- First, the existence of the old plan, RT 523, sheet 1. That plan, after all, was identified on the face of sheets 2 and 3, which Mr Porteous saw.
- Second, whether or not there was an Abandonment Plan.
- Third, the terms of the Abandonment Register.
- Fourth, whether all material from the Department had been obtained.
- Fifth, whether the mine surveyor had examined the original plan.
- Sixth, the odd and anomalous features of sheets 2 and 3 which suggested that they may not be reliable.
- Seventh, that no research had been undertaken into the history of the Young Wallsend Colliery.
- Eighth, that the material gathered by the surveyor was incapable of demonstrating either that the workings had been depicted accurately, or that they were up to date.

Mr Anderson's opinion (*supra* p.340) does not assist Mr Porteous. Mr Anderson believed, appropriately, that it was fundamental that the surveyors seek from the Department the original plan. His answers in cross-examination also contemplated dialogue between the mine surveyor and the manager. One would expect that the matters which were not uncovered by Mr Porteous would have emerged in the course of such dialogue. The Court believes that, as in the case of Mr Romcke, and for much the same reasons, Mr Porteous did not discharge appropriately the obligations upon him as mine manager.