A mine of information

The amount of coal mining information the Coal Authority holds on file is vast. If laid out in paper format, the data would cover Wales. Now stored and updated electronically, their digital coal mining information offers greater interpretation benefits as the data is regularly updated to enhance the delivery of information to conveyancers, customers in the property market and other consumers of digital data. **Eric Woss**, Head of Mining Information and **Simon Leeming**, Principal Manager for the Coal Authority's Mining Information team, speak to Modern Law about the scope and impact this data has.

Ever wondered where all the data for mining reports comes from and how accurate and consistent that information is? Thousands of coal mine abandonment plans have been collected by the government since 1872 (when it became law to register the plans of all abandoned mines) and have been maintained by the Coal Authority since it was established in 1994. The Coal Authority also boasts a considerable stockpile of abandonment plans for mines closed before 1872 – a significant account of our mining heritage in the UK - and, importantly, an impressive database of information for its experts to interpret and use to protect the environment and support its clients.

Now housed in a bespoke Geographical Information System (GIS), the Coal Authority mining data is used as the foundation for interpreting hazards and risks from old coal mining to the public.

"It's our role in the mining information team to interpret the abandonment plans and GIS data, as well as make it available to our customers. We continually update the GIS to ensure it's up to date and as accurate as we can make it," explains Leeming.

Previously, to respond to a hazard and update documents, or to use it to respond to a concern, involved sifting through the paper-based information. This was incredibly labour intensive. Now only a small team of mining and GIS experts are required to manage the database. The new digital coal mining heritage data is "incredibly efficient" to access. The Coal Authority's experts use this and the raw plan data, backed up by technology, to provide even more interpretation about the Coal Authority's estate now and in the future.

"For our team, it's all about the data and its interpretation. It's our job to ensure that our customers receive accurate, well-informed data created by experts. Our own Public Safety and Subsidence and Property teams also use this data. This ensures a consistent message is used by conveyancers and other government bodies so we are all working from the same information," stresses Leeming.

With over 173,000 mine entries in the system, the Coal Authority helps to "make the unknown known" to ensure that all relevant parties are aware of what lies beneath the land. It is also the Coal Authority's statutory duty to have due regard to the safety of the public as part of the Coal Industry Act 1994.

"Some 57,000 mine entries are situated in urban areas while 130,000 properties lie within 20 metres of at least 1 mine entry – falling into the CON29M reporting distance requirement for a conveyancing mining report. What most people don't realise is that most conurbations in Britain (outside London) are sat on the coalfield – this equates to around 25% of all properties (around 7 million properties). Often there is limited information known about a mine entry because there are few details on the abandonment plan." He adds that "even if a mine entry has been capped or sealed, further research should take place prior to development. This will help ensure the risk is adequately managed."

However, there is much more to the Coal Authority than investigation and protection. For example, it's innovation programme creatively and sustainably uses a by-product from mine water remediation. The data adds significant value to this work as it is used and interpreted by the Coal Authority's specialist pool of in-house expertise. As Leeming explains: "We continually receive new coal legacy information that we add into our database. This can help others extract green energy from our estate. The technology exists and more companies are investing in sustainable energy creation."

"Because such a vast number of customers need to use and apply the mining information that we hold, it has to be accessible, delivered promptly and in a language and format that people understand. Not everyone is an expert in our coal mining heritage – they have their own jobs to do. We ensure the data is translatable and meaningful as well as reliable."

"Any organisation using the data, whether through a mining report or managing mining legacy, will be working with data cultivated by some of the leading experts in mining, geographic, science and surveying fields. The Coal Authority "grows its own" experts and shares experience across the body. This ensures this living, breathing intelligence and knowledge is passed on to newer members of our team."

"We offer an outstanding level of expertise and reassurance to help clients when they come across coal mining legacy. We have a long history of caring for and improving the environment on the coalfields. We help the public understand the impact of mining."

"We continue to strive to help those living and working in coalfield areas to understand the coal mining legacy and risks. We continue to engage with our stakeholders to share the success we have had in protecting the environment, managing legacy and opening up opportunities. We increasingly engage with the public, commercial enterprises and local MPs so they are better informed. We are the authoritative go-to body on coal mining matters; we're here to help."

Simon Leeming
is the Principal Manager of the Coal Authority Mining Information Team.

"Because such a vast number of customers need to use and apply the mining information that we hold, it has to be accessible, delivered promptly and in a language and format that people understand"

Map showing Britain's coalfield areas

1947, Jan 1
Coal industry nationalised
National Coal Board (NCB) becomes operational

1985-89
Digitisation
Transfer of mining information from paper to digital format

1987, March 5
British Coal Corporation
NCB becomes British Coal Corporation

1994, October 31
Coal Authority
The coal industry becomes privatised and the Coal Authority is established to undertake statutory duties set out in the Coal Industry Act 1994

2001
Mining reports
Online mining reports ordering service is launched providing property specific information on coal mining

2007
Mine entry inspections
Coal Authority begin proactive mine entry inspections to identify and where necessary undertake safety works to protect the public

2012 onwards
Mining reports service enhanced
Programme of system automation and IT improvements begin, contributing to the reduction of mining report turnaround times to minutes by 2018

Interview with Eric Woss

Q Tell us a little about the creation and purpose of the Coal Authority

A The Coal Authority was established following the Coal Industry Act 1994, when the UK coal mining industry was privatised. At this point we became responsible for holding, managing and disposing of interests and rights in relation to unworked coal and other property that transferred to us under the 1994 Act. We are responsible for a wide range of areas in relation to coal and mining. We manage the compensation scheme under the Coal Mining Subsidence Act 1991, which gives property owners comfort where subsidence arises as a result of lawful coal mining. A key focus is also to manage the environmental effects caused by past coal mining, to ensure that the public are kept safe.

Q Why is the Coal Authority still in existence when coal mining is an industry in decline in the UK?

A People still sometimes refer to us as the Coal Board, but we're not. In addition to our statutory role around public safety and subsidence, as an organisation we offer support in a variety of mining related areas. From working with agencies such as Defra to provide expert information and environmental remediation support, to aspects of managing mining legacy.

Our Mining Information team manage the coal mining information for the Coal Authority - a core function of the 1994 Act – which is held digitally in-house. We update the database on a daily basis to ensure that we supply the most up to date data to those who need it, including developers, government agencies and infrastructure companies who need the very best data to work with.

Q What is the role of the Mining Information team?

A Our Mining Information team is made up of seven people consisting of mining surveyors, engineers, geographers and geologists. Our team holds a vast amount of knowledge and experience from the former coal mining industry.

We have over 120,000 coal mine abandonment plans on file. These plans were used as a basis to produce our Geographical Information System (GIS) database of mining information. Part of our role is to look at the digital abandonment plan information and then interpret how they 'fit' to the surface of the modern day landscape. Our team's interpretation of this data is a key part of our mining information statutory role.

Since our GIS team transferred our paper based plans into digital format, we can now access this data immediately. Within the GIS, a symbol marks a coal entry position, but behind that sits a vast amount of metadata – the background information on that feature. This information can then be extracted and included in a mining report within seconds.

We work hard to ensure that we attract the right people into the team. We pride ourselves on ensuring that we maintain a high standard of interpretation and expertise to deliver on our duty of care for members of the public and land and home owners.

"The Coal Authority "grows its own" experts and shares experience across the body. This ensures this living, breathing intelligence and knowledge is passed on to newer members of our team"

Eric Woss
is Head of Mining Information at the Coal Authority.