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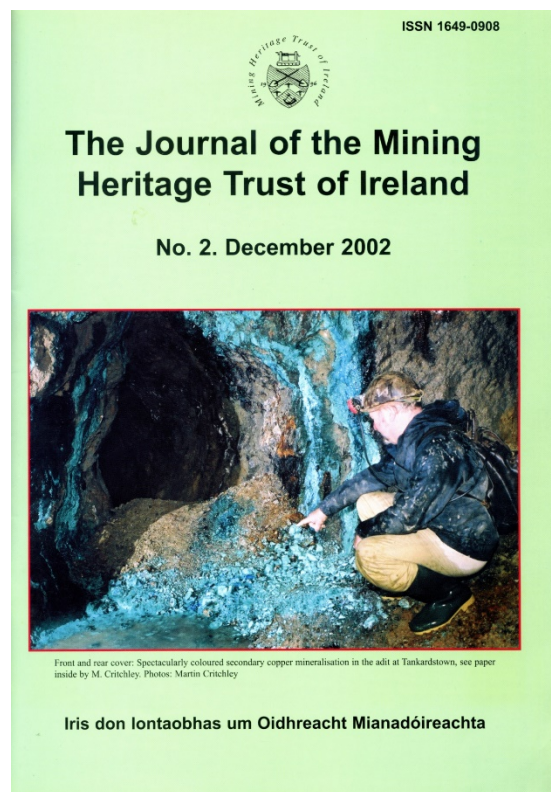
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SALVAGING MINESITES - THE CASE OF KEEL

Phelim Lally

Geological Survey of Ireland, Beggars Bush, Haddington Road, Dublin 4. Email: phelimlally@gsi.ie

Abstract: The objective of mine heritage enthusiasts, when presented with abandoned mine sites, is ideally to develop a full documentary record of the locale, and at the same time to preserve as much of the physical remains as is possible. Happily, such a degree of preservation was made possible in July of this year at Keel minesite, Co. Longford. *Journal of the Mining Heritage Trust of Ireland, 2, 2002, 3-7.*

BACKGROUND

Keel (Figures. 1,2) was never a working mine. It was rather an exploratory shaft sunk in the mid-1960's to determine the economic extent of zinc mineralization in a fracture system developed here in the lowermost strata of the rock sequence known geologically as the Carboniferous System. Having said that, it was nevertheless pretty unique in Ireland, in that both the shaft and the underground workings, as well as the surface structures, were substantial.

The shaft is a concrete-lined 16ft-diameter circular shaft, sunk to 585 feet, and from it development took place on three levels: 200ft, 400ft, and 500ft below surface (Fig. 3).

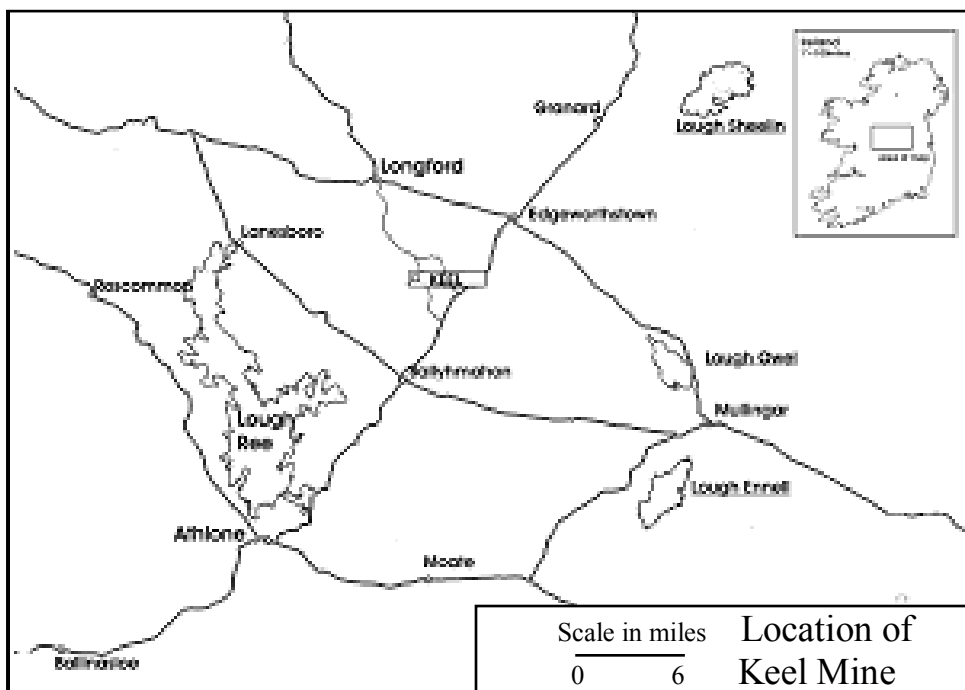
The operator of the venture was Rio Tinto Finance and Exploration Ltd. (RioFinex). It may be said that such a large investment, without a tangible result, reflected the confidence and conviction of exploration groups in Ireland in the 1960's that the country had not a few ore deposits with the potential to become mines. What contemporaneous events gave impetus to the Keel development?

- Two lead-zinc mines, Shallee in Co. Tipperary and Abbeystown in Co. Sligo had recently ceased operations after nearly ten years each of productive life. Shallee closed in 1958, while Abbeystown closed in 1961. Interest in exploration and enthusiasm for mining in Ireland had both been aroused.

A massive additional ore deposit, predominantly zinc, had been drilled and quantified at Silvermines between 1962 and 1966. By 1966, the go-ahead had been given to develop the deposit. As a result, the new mine at this old and venerable Co. Tipperary mining centre began production officially on September 12th, 1968.

A host of other deposits countrywide were in abeyance: Tynagh, Gortdrum, Avoca, and even Mountain Mine in Allihies. The ore was thought to be in place, and development financing was all that was needed now.

POTENTIAL OF KEEL



Keel was initially discovered in 1962. It was also explored by diamond drilling, but in contrast to its contemporary, Silvermines, it ceased operations abruptly in 1968. The orebody proved not sufficiently large to make production viable: the final estimate

Figure 1. Location map.



Figure 2. Aerial view of working mine, 1960's.

of reserves came to a mere 1.85 million tons, though grading reasonably well at 7.71% Zinc. There was lesser lead, cadmium and silver. The mineralization varies in style, but perhaps the prettiest textures are seen where honey-coloured zinc-blende (sphalerite) has been deposited in the matrix between rounded beach pebbles of quartz and sandstone of different hues. One is in fact looking at a fossilized version of a shingle such as occurs along the beaches of Wicklow at Greystones or Bray! (Figure 4)

For the sake of comparison, Navan Mine in Co. Meath has quantified reserves of 84.6 million tons containing 8.8% Zinc over its productive life so far. More remains to be explored. Processing of ore in one year alone at Navan can amount to 2.6 million tons. Silvermines itself was host to an ore tonnage of 17.7 million tons, three-quarters of which was successfully extracted. Given these figures, its not hard to understand why Keel, though interesting, was finally jettisoned.

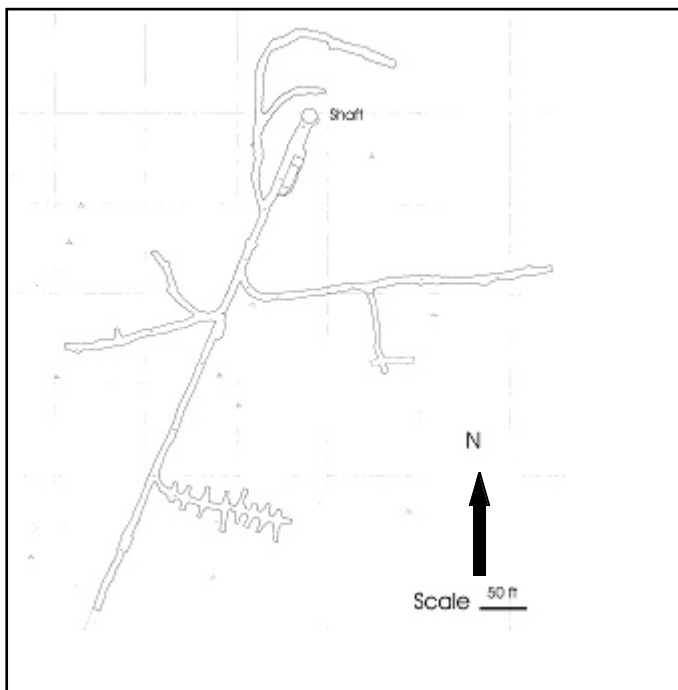


Figure 3. Example of underground development at Keel: Plan of the 500 Level.

CLOSURE OF KEEL

Annotations on the mine level plans for Keel state that several headings were actively being driven on __ / 1968 "at time of closure". The order must literally have come overnight from Rio Tinto head offices to pull the plug on the venture. Thankfully, for the benefit of posterity, the Inspectorate of Mines (Dept. of Industry and Commerce) was in place at this stage and had a system established for the orderly recording of the works carried out. Thus, we have a surveyor's report, with the all-important plans, of both surface and underground, and these are accompanied by a brief summary of mine development over the five-year life of the venture. The Keel report was released into the public domain in 1978, after a moratorium of ten years, and has been in the Mine Records of the Geological Survey of Ireland since that year.

The property was held on to by RioFinex, and its outhouses, sheds and laboratory buildings used to store diamond drill core and thousands of soil samples from the company's continuing exploration efforts in the North Midlands. Ovoca Resources acquired the property in the course of joint venture work during the 1990's with RioFinex. While RioFinex sadly ended its prospecting work at Keel in 1999, relinquishing its 36-year-long endeavour, Ovoca retained the mine site until Friday, July 5th of this year. Sale was effected to a local farmer, and the land is now understood to be destined for forestry.

THE SALVAGE OPERATION

Of primary interest to the Minerals Programme of the Geological Survey of Ireland was recovery of such diamond drill core as was deemed useful for reference and for possible future geological studies. As it happened, several truckloads of selected drillcore were transported to the GSI's Dublin Core Store from the site.

Having dealt with the drillcore, heritage aspects came into focus, the following being contemplated as essential to the recording of not only Keel, but of any abandoned mine site:



Figure 4. Keel ore showing zinc-blende (ZnS, sphalerite) as the darker patches, in the interstices of a pebble conglomerate.

As mentioned previously, competent underground and surface surveys were carried out at the time of closure. To update the surface situation, as it were, notes were made this year of the current state of the installations (Figure 5).

A fuller report on the state of the buildings and spoil heaps can hopefully be carried out in the context of future engineering or waste management work at the site. This year, for example, an evaluation of the spoil may be feasible as part of a mine waste survey for Ireland being completed by staff of the GSI Minerals Programme. It was noted that while the buildings are all still standing and possible to enter, any remaining items of furniture or utensils are broken and in disarray (see Figure 10 for example).

The photographic record was duly attended to, and Figures 6-11 illustrate some representative aspects of the site.

Recovery of articles of mine heritage value from the site consisted of unscrewing of signalling and other signs from inside the shaft access shed (two of which are shown in Fig. 9); the removal of a manufacturer's plate from a ventilation fan housing which lay outside the shaft buildings; and the transfer of the door of the cage occupied by the mine personnel to go underground.

The signs have been cleaned and are lodged in storerooms at the Geological Survey. The plate of the ventilation fan, an

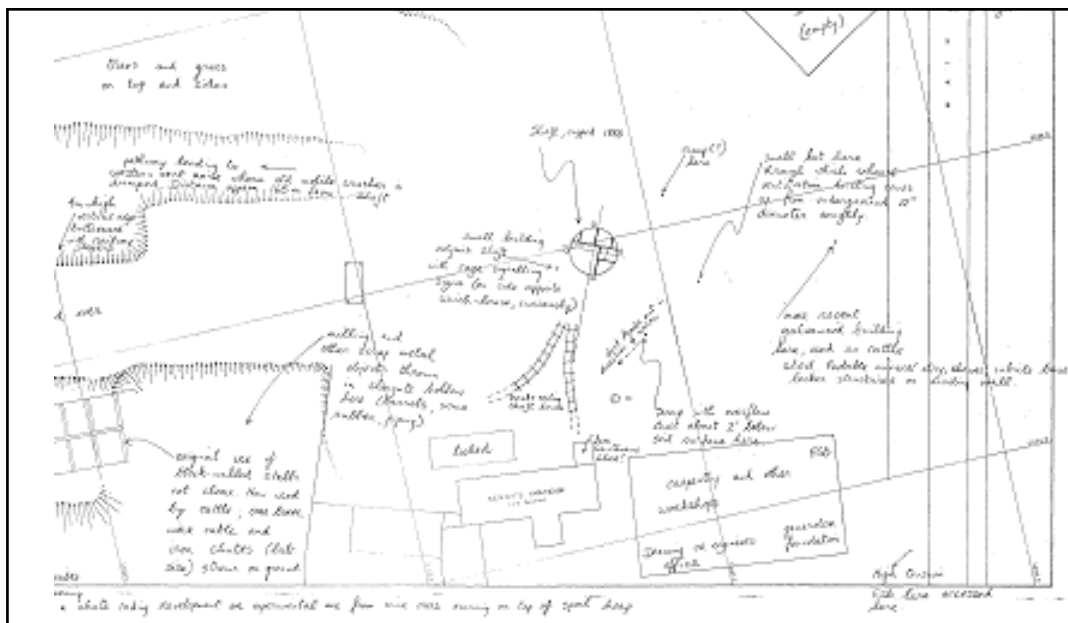


Figure 5. Site notes for the south-eastern quadrant of Keel minesite (shaft area), 2002.

- A surface and underground survey
- A report on general condition of shafts, buildings and spoil heaps
- A photographic record
- The recovery of artefacts of mine heritage interest or value
- The recovery of such mineral specimens as might be deemed representative of the ore extracted
- Recording of local knowledge regarding the operation of the mine and people involved with it

"Aquatower" model manufactured by Heenan & Froude Ltd. of Worcester, is now in the GSI Mine Records. Finally, the cage door, consisting of a metallic frame and half-plate with a sliding metal door and hook, is currently also at GSI awaiting cleaning and re-greasing.

The one artefact that has proved impossible to recover is a portable jaw crusher of some size, now languishing on the bog that adjoins the mine site to the west (Fig. 11). This intriguing piece of machinery, made of iron and weighing many tons,



Figure 6. View of the former Administration Block, with grassed-over site yard in foreground.



Figure 7. View of former hoist house. Opening at upper right of wall allowed for passage of pulley cables to head-frame.



Figure 8. View of circular shaft, capped with concrete in 1988. Behind is the shaft signalling and access shed, and to the left, part of the electrical-mechanical workshop.

appears to have been at work where a ventilation - and possibly extraction - raise came to surface from the 200 Level at the western extremity of the underground workings. It now lies partly sunk into the raise opening. Besides meriting study by mechanically-minded members of the mining heritage fraternity as to its method of operation, perhaps the most noteworthy aspect of the machine is its having been made up on site, as you



Figure 9. Mine safety and signalling signs inside former shaft access shed.

would an model airplane kit. This is evidenced by the part numbers in large emboss which can be readily seen on the different members of the chassis and moveable sections.

Sadly, short of using a crane, there is no possibility of removing such a heavy object to a site where it might be put on display. Lifting it indeed might provoke the sundering apart of the pieces of the "kit".

The recovery of mineral specimens (see Figure 4) was made possible by pinpointing two spots - one adjoining the drillcore sheds and the other among the spoil heaps - where quartz breccia showing good sphalerite but of low overall zinc grade had been dumped. Specimens collected were brought back to the GSI.

Finally, personal recollections of the mine will undoubtedly come to arouse the interest of those curious about mine history as time goes on, and may provoke one among us to carry out the necessary interviews at some future date.



Figure 10. Interior of former Wet Lab.

ACKNOWLEDGEMENT

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Figure 11. Portable crusher at western extremity of site.