Gold Mining and Its Challenges

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EVEN though tin mining had passed its glory years in Malaysia for nearly a quarter of a century, the public, especially the old timers, still think that mining is synonymous to tin mining. When one mentions that one is involved in mining, the impression would be, "there goes another guy who is day dreaming", as they are under the impression that there is no more future in "mining" in Malaysia since the collapse of the world's largest tin mining industry in 1985.

But what happens when one mentions that they are mining for gold? The next question would be, "Is there any gold prospects worth mining in Malaysia?" That is the usual response that the author gets from people who wonders why in the world would anybody still be interested in an industry which is "dead" and high risk. No bank in Malaysia would be interested in financing any mine or quarry.

Most of the gold mines in Malaysia are currently operated by "crazy" individuals who are willing to invest their own resources and face the risk of losing their money. That is the reason why the comparably bigger gold mines prospects are being financed or operated by foreign investors.

GOLD

Almost everybody knows that gold is a priceless metal. Its chemical formula is Au and the native gold has a specific gravity of between 19 and 21. The current price of gold is about RM110,000 per kg. Figure 1 shows the location of gold fields based on the findings of gold deposits in Kelantan. However, a lot more work needs to be done in evaluating these areas for economic mining.

The author was an Inspector of Mines in Kelantan between 1988 to1993, and oversaw the production of alluvial gold in the jungles of Gua Musang, Tanah Merah and Jeli. At that time, the purity of gold produced was around 900 per thousand. All mines were of alluvial deposits and production were by means of sluice boxes or commonly known as palong (Figure 2).

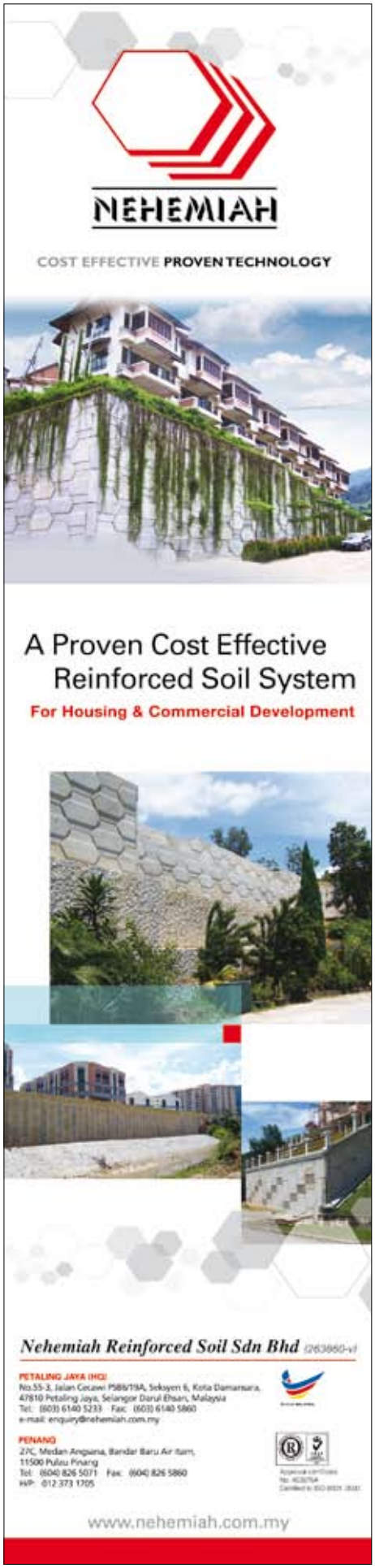
After many years of absence, the author returned to Kelantan in 2007 as the General Manager to an Australian based company who is responsible for carrying out gold exploration in the jungles of Gua Musang. From the work carried out by previous Australian geologists with the company and from the author's own findings and experience of the area, the potential for a hard rock gold deposit was quite promising.

Basically, Peninsular Malaysia is divided into three mineral belts. The eastern and western belt is the tin belt while the middle is the gold belt. The gold belt runs from southern Thailand to the border of Pahang and Negeri Sembilan.

EXISTING GOLD MINES

The existing gold mines in Kelantan are of the small scale type with a production of between 1-5kg of gold per month. The one in Pahang, on the other hand, is operating a hard rock deposit with a production of about 300kg of gold per month.

Incentives from the State Government are required to attract bigger mining companies to come and invest in gold mines.



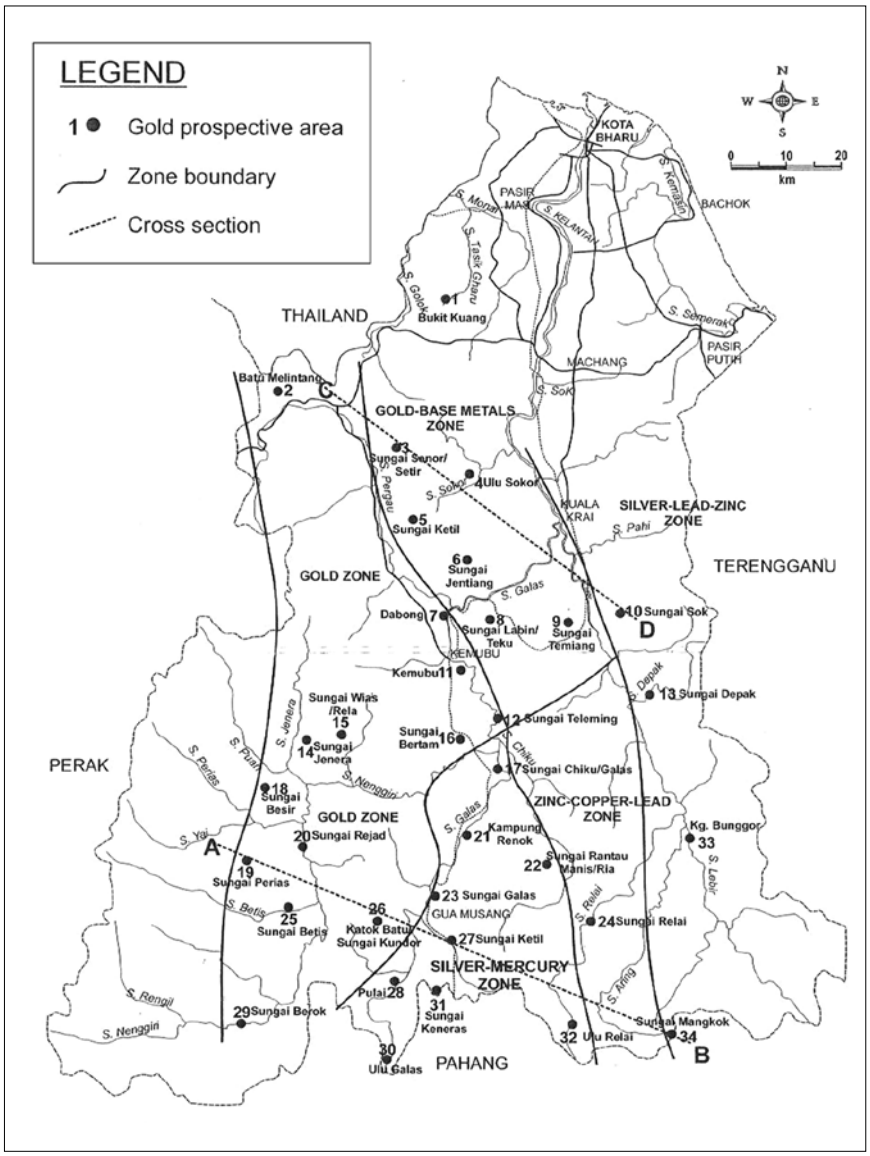


Figure 1: Location map of 34 gold fields in Kelantan (after Teoh at al., 1987) and the distribution of mineralisation zones

EXPLORATION

In general, few mineral explorations have been carried out since the collapse of the tin mining industry. Mineral exploration is very capital intensive and since no bank in Malaysia is willing to help, only foreign based exploration companies are carrying out the exploration.

Small time miners carry out very little exploration or no exploration at all. These miners are pure "gamblers" as they start mining based on a few findings, and most of them have very little knowledge about geology or the occurrence of alluvial gold. They hope to hit the jackpot from the few findings that they make. Otherwise, they try to cut down on their losses or quit. Their mining method is mostly based on impromptu planning and instinct.

Exploration companies with a proper capital would send their experts to do some literature survey, study the area for any signs of old workings and try to obtain old data if any.

For Kelantan and North Pahang, there were old radiographic survey tapes. The author's company brought the tapes to Australia, and managed to reformat and interpreted them. The radiographic survey results provided guidance on the areas where they would concentrate their studies and exploration activities. The existence of old workings confirmed their findings and gave them confidence in the existence of promising hard rock gold prospects.

However, it was not all free sailing for the company. The area concerned was of no interest to anybody since the early 1990s due to the previous failure of a large mining corporation in the exploration and mining for gold in the area. The corporation eventually gave up on the area.

The interests shown by the new company attracted other parties for possible participation. At times this situation could create other related problems.

This is one of the challenges that a mining enterprise has to face. Despite the provisions in the new State Mineral Enactments to protect them and to encourage more investments in the mineral industry, a number of obstacles will still have to be overcome.

PERCEPTION

Most people believe that when an Exploration License is issued, it means that a cake is being handed over and is ready to be eaten. They also believe that an application made by a mining engineer or a geologist means that the area is a sure prospective area, and that these "cakes" should be shared. Obviously, the mining engineer or geologist concerned will resist these ideas as the sharing of these "cakes" will take up a large chunk of the investment and make any potential gold prospects to be uneconomic. In the long run, there will be no mines and nobody will benefit from this God-given resources.

ETHICS

At the school of mines or at any engineering schools, students are taught the importance of ethical values. However, many engineers are always confronted with a situation of making a tough decision in prioritising ethics over financial return.

From the author's experience as an Inspector of Mines with the Department of Mines for 13 years,

Figure 2: Palong for the recovery of alluvial gold in Sg. Galas, Gua Musang, Kelantan

unethical methods has led to the many failures in mining ventures.

For example, in the past, there was a company which engaged an exploration team led by professionals to investigate an area for mining. After spending millions of ringgit on exploration and appraisal, it was decided that it was economic to mine the area with an expected production of 30kg of gold per month. During that time, this was regarded as a large scale operation. However, after six months of mining, it was proven that the area was not worth its salt and the mine ran at a lost. The company quit to avoid further losses.

MINING METHODS

The mining methods employed will depend on the type and size of the deposit. Malaysian miners typically stick to using palong when mining. Is this because Malaysian miners know no other methods besides the palong?

It could also be that palong is the cheapest method and one does not have to be that techno-savvy to build a palong. The mining method has to be cheap since no bank or any large corporations in Malaysia will support any mining venture.

The mining method using palong is only appropriate for the not so many alluvial mineral deposits. The hard rock deposit is only affordable by big mining corporations from outside the country.

ISSUANCE OF EXPLORATION LICENSE AND MINING TITLES

The promptness in issuing the exploration license and mining leases by the authority is of utmost important. The duration for both cases has to be appropriate to the type of deposit and the location of the deposit. In remote areas, more time is required.

CONCLUSION

There are many prospects for mineral deposits and the appropriate incentives from the State Government are required in encouraging investors to carry out mineral exploration. The incentives can be in the form of the prompt issuance of exploration license and mining leases upon application and strictly following the first come first served basis rule. Serious effort must be taken to improve the speed of the processes involved.

All parties involved in the industry must uphold the ethical pronouncements as the core for integrity to ensure the 'sunset' industry will still remain relevant in this country. ■

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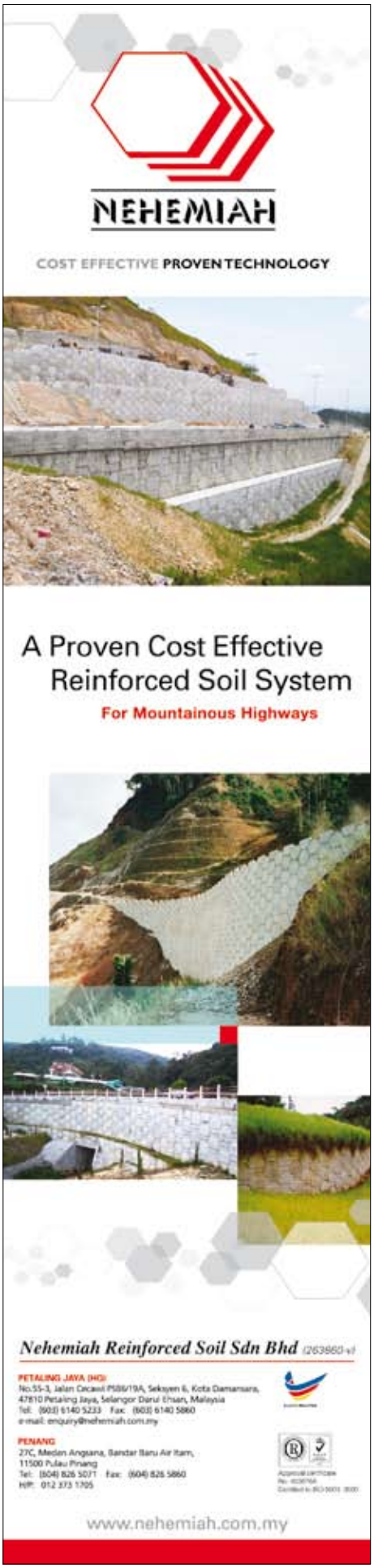
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