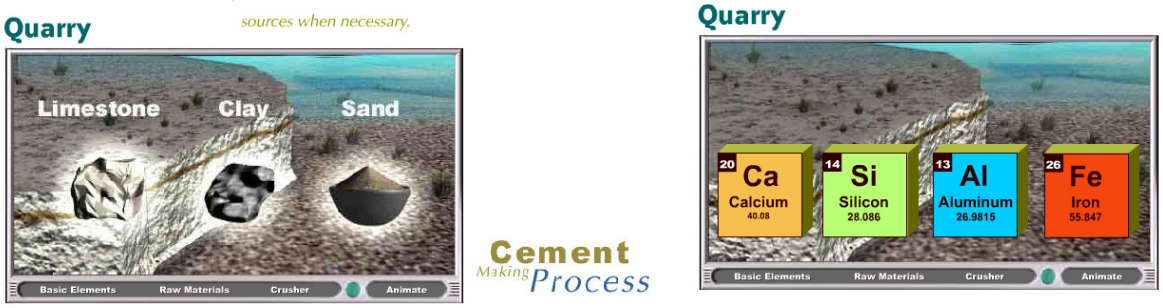
Cement Plants in Himachal Pradesh

The most important use of limestone[2] is in the manufacture of cements. Cement grade limestone contains four essential chemical elements: calcium, silicon, iron, and aluminium. It is also used extensively as flux for smelting of various metallic ores. It is an important raw material for chemical industry. Limestones are sedimentary rocks, deposited in shallow or deep water marine environment. They are often associated with silica, clay, pyrite and organic matters.



Source: WebSource

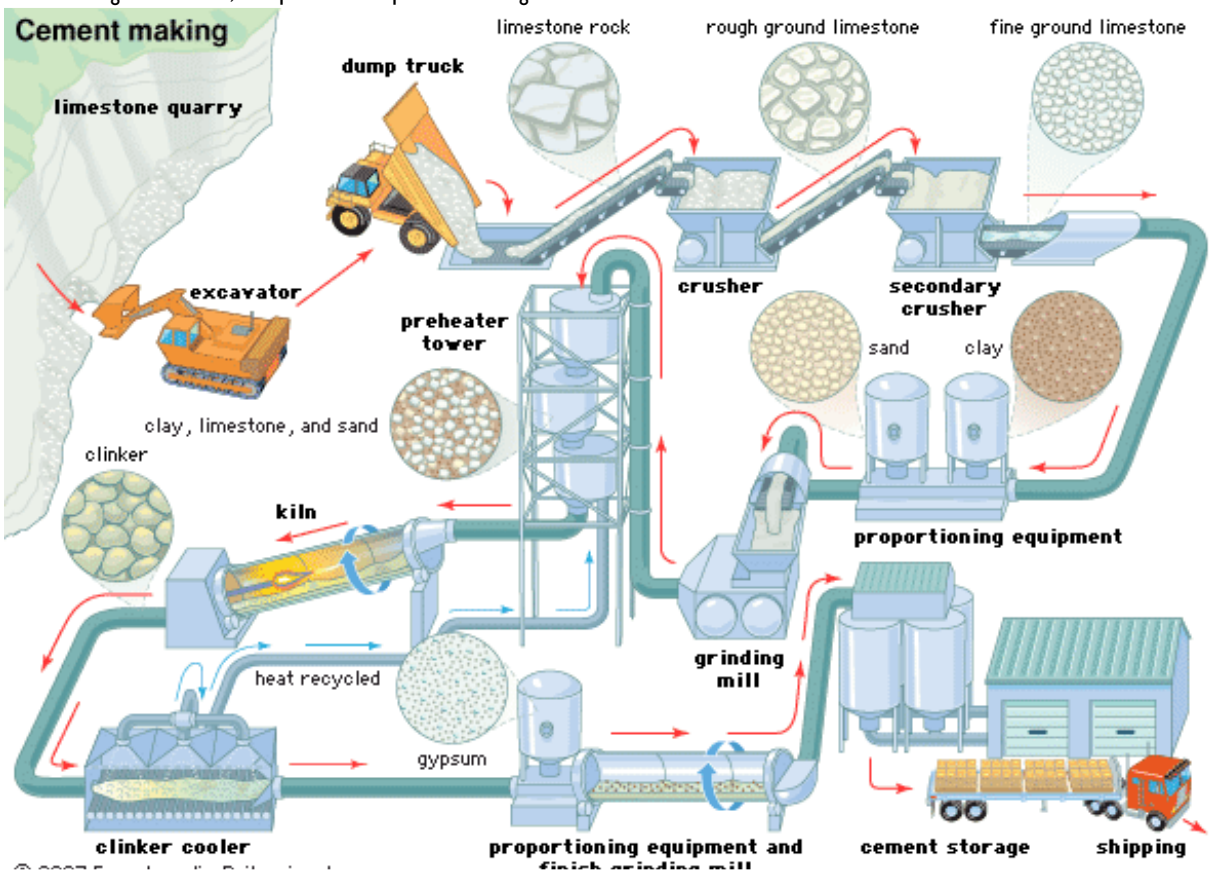
Setting up of cement plants is an integrated industrial cum mining activity i.e. most of the cement plants will have captive limestone mines to ensure regular supply of raw material to the plant site. The siting of industry i.e. cement plant can be very close to the mine or at a distance depending upon the suitability to establish plant, in hilly regions, most of the plants are located few kilometers away from the mine and here comes another component of transport of raw materials to the plant site. Most often, conveyor belts are used to transport material to the plant site, the question comes here is that the land beneath the conveyor belt is also needed for support columns for conveyor belts but the right over land remains with people apart from the area occupied for columns. This carries a danger of damaging lands beneath due to falling materials.

S.No.	Mining Area (hectares)	Mine Name	Plant Name	Capacity	Mining
1	231.25	Barmana-Gagal hill, Bilaspur	ACC Barmana, estd. 1984	4.6 Million Tonnes cement (Suraksha Brand)	Hill has been mined down to 650 m from the initial 947 m
2	255.70 (falling in Kandon RF) River Giri Adjacent to mine and Bata River is 7.5 kms	Manal Mines, Sirmour (captive mine)	CCI Rajban, estd. 1980	2,47,000 MT	Portland & Pozzolona Portland Cement
3		Darlaghat, Solan	Gujarat Ambuja	0.28 MT	
		Broh-Shind, Chamba			
4	232.6 (148.24 private land and 84.36 ha forestland) Gambhar River 15 kms from mine	NMDC		3 MTPA	
5	488	Baga Bagheri	JPAL	2.54 MT	
6		Alsindi, Karsog (Mandi)	Lafarge	1	In court

Common Issues in Such Mines

2 Earth Processes and Resources, Prof. Mihir Deb

1. **Blasting**: It has often been noticed that most of the mines involve blasting to break the ore bodies and with settlements around the mine site, the ground vibrations impact the structures in the settlement. The industry maintains that controlled blasting is done but in settlements, usual impact is the cracks developed near the joints of roof and wall. So far there has been no compensation for such damages or putting the population at risk
2. **Dangers from Muck**: The muck generated during the process of mining becomes a potential danger for population downstream unless the waste is significantly stacked and protected. The density of muck is high so the force with which it can damage structures is worrisome.
3. **Public Infrastructure and Pollution**: By the very nature of cement industry, it requires transportation of ore to the factory and final product from the factory to its depots and sales network. Large number of trucks thus plies on roads and with loaded trucks plying continuously not only damages the roads but also increases dust emissions alongwith vehicular emissions.
4. **Impact on Valley Environment**: Typically, emissions from industries in a valley does not gets dispersed as it does in a plain region. Although it will vary from valley to valley and its agro climatic conditions, the potential of pollution increases if wind doesn't disburse these emissions simultaneously.
5. **Health Impacts**: Generally, the health impacts can be segregated into two themes i.e. public health and workers health. These two are different as the public at large will face pollution from the end processes of an industry as well as from the mining – this may cause damages impacting land, property, livelihoods. Whereas the workers are in direct industrial environment (high temperatures, fine dust inhalation etc.) and with lack of safety equipments or protective gear, the particulates or emissions directly correspond to the workers exposure to such environment and hence impacts the respiratory organs thereby affecting other vital organs. However, the process of impacts takes long time to set on.



A Self Explanatory Cement Manufacturing Process (Source: Encyclopedia Britannica)

Conditions Stipulated on Health and Safety

The conditions are stipulated in specific and in general but lack of availability in local public's knowledge and with no participation of people in monitoring of situation makes it convenient for the industry.

- Vehicular emissions should be kept under control and regularly monitored. Measures shall be taken for maintenance of vehicles used in mining operations and in transportation of mineral. The vehicles should be covered with a tarpaulin and shall not be overloaded – WHETHER THIS HAPPENS?
- Blasting operation should be carried out only during the daytime. Controlled blasting should be practiced. The mitigative measures for control of ground vibrations and to arrest fly rocks and boulders should be implemented. – THE SITUATION NOW AND EXPERIENCES
- Personnel working in dusty areas should wear protective respiratory devices and they should also be provided with adequate training and information on safety and health aspects – WORKFORCE EXPERIENCES
- Occupational health surveillance program of the workers should be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed – THE SITUATION

Compliance to What Committed:

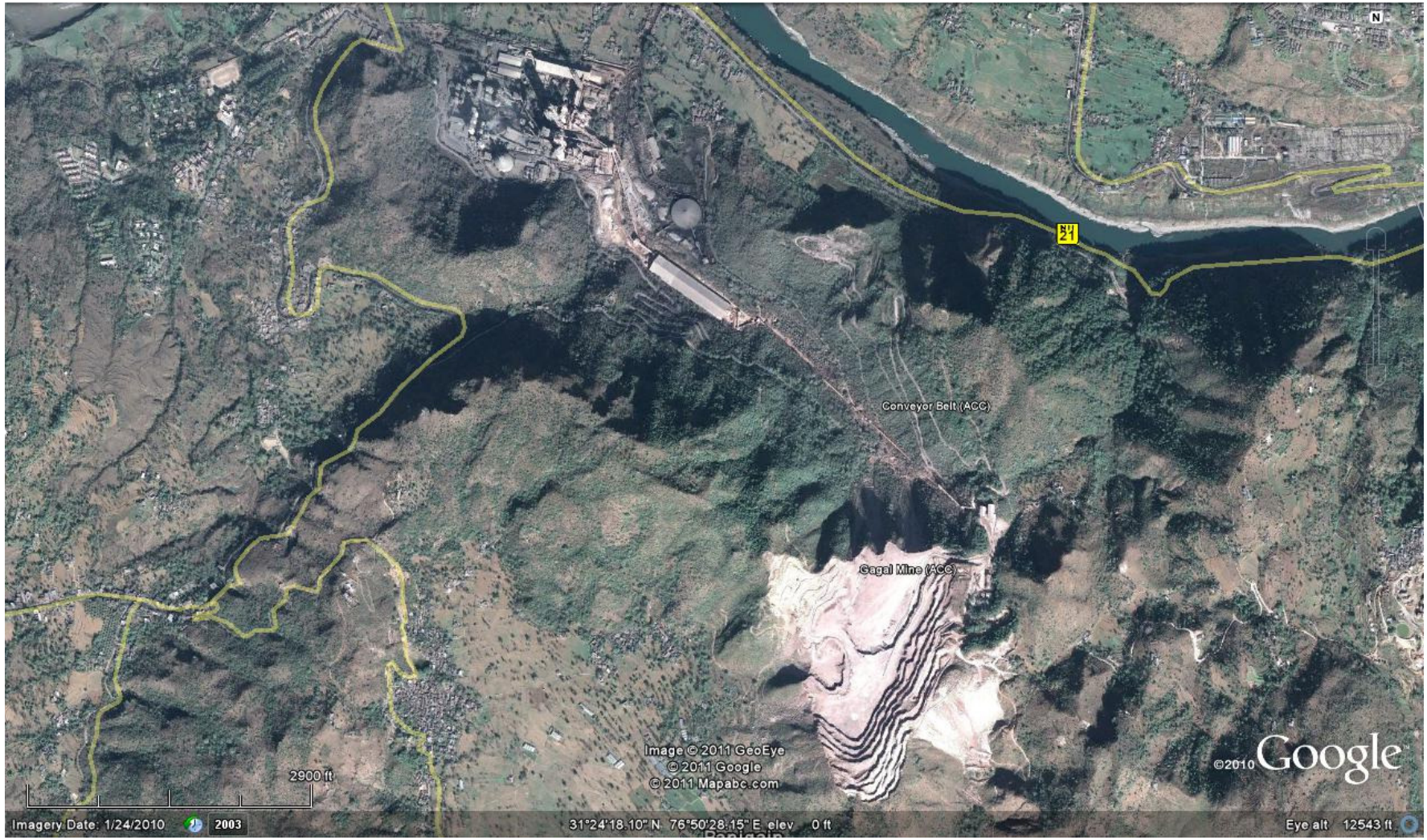
- **In the mining plan & mining scheme –** whether it is being done accordingly or not and the issue of scientific mining thus (damages to environment due to poor management lead to breach in overburden to flow downstream and damaged social & personal infrastructure)
- **Mine Closure –** How the pits are being closed and are retrieved back. The final mine closure plan should be in public domain (emphasis on voluntary disclosure in the villages) so that it is known how the closure is planned and how it will or will not affect the local population.

Name of the Public Information Officers(PIOs)

4.	Sh. Anshul Dhiman	General Manager O/o the General Manager, Distt. Industries Centre, Bilaspur, Distt. Bilaspur (H.P.)	Area falling under DIC, Bilaspur excluding area under SWCA, Goalthai.	gmdicblp-hp@nic.in	01978/ 224248
20.	Sh. Rajeev Kalia	Mining Officer O/o the Mining Officer, Solan, Distt. Solan (H.P.)	Area falling under Mining Office Solan	mosln-hp@nic.in	01792/ 230024
21.	Sh. Sanjeev kumar	Mining Officer O/o the Mining Officer, Nahan, Distt. Sirmour (H.P.)	Area falling under Mining Office, Nahan	monhn-hp@nic.in	01702/ 222330
22.	Sh. Pawan Bhardwaj	Mining Officer O/o the Mining Officer, Bilaspur, Distt. Bilaspur (H.P.)	Area falling under Mining Office, Bilaspur	moblp-hp@nic.in	01978/ 224248

How a Captive Mine for a Cement Plant Looks Like?

The mine in village suli is connected via a over-land conveyor belt transporting mineral to a point from where trucks ply on roads to take it to the plant. The lands have been acquired in villages Khata, Baga, Kotlu, Phagwana and Rathoh in Tehsil Arki for conveyor belt and muck storage. Apart from industrial emissions, the other major concern is rising air pollution due to fugitive emissions due to plying of trucks in large numbers.



Another example of a captive mine of ACC cements where again a conveyor belt transports raw material right into the mine. River Sutlej is flowing along NH21.