



Prospecting of Phosphorite at Sangau

Purchaudi Municipality, Baitadi District



Government of Nepal
Ministry of Industry, Commerce and Supplies
Department of Mines and Geology



Background

This project focuses on the exploration of phosphorite in the region, a non-detrital sedimentary rock rich in phosphate minerals. Phosphorite forms from the accumulation of microorganism shells that contain phosphate minerals like apatite. Commonly, massive apatite deposits are also referred to as phosphorite. The geological strata typically associated with phosphorite include limestone, mudstones, and occasionally shale, chert, dolomite, and sandstone. These phosphatic sedimentary rocks harbor the phosphate deposits primarily in apatite form. While apatite is resistant to initial weathering, forming a phosphate-rich residuum, it degrades under extended exposure to environmental elements.



Sector

Mines and Minerals



Location

Sangau Area, Purchaudi Municipality, Baitadi District, Sudurpashchim Province



Land Lease Area

5 Sq. Km.

Toposheet No: 2980 07D, Scale – 1:25,000

Main point co-ordinates: Easting 472025.00 m, Northing 3272950.00 m

Extent from the Main point:

East	west	North	South
1475 m	1025 m	50 m	1950 m

Objectives

- To tap the probable potential of extracting phosphorite

Application of Phosphorites



Fertilizers



Animal feeds



Rust removers



Corrosion preventers



Dishwasher tablets



Formation of White Phosphorus
(heating phosphate rock with coke and sand in electric furnace)

- Further converted to phosphorus trichloride and phosphoric acid

Project Outcomes



Revenue Generation through mining activities



Enhances local land value



Creates employment opportunities



Stimulates growth in axillary industries and trade



Diverse Industrial Application



Utilization of domestic resources efficiently

Geology

- Comprises of Baitadi Metasedimentary Complex
- Phosphorite horizon present in bluish-white dolomite and light-blue cherty dolomite band
- Variation thickness ranges from medium to thick bed
- Dolomite interbedded with the grey to dark grey slate.

Grade and Reserve

- Phosphorite content up to 13.52%
- Phosphorite bearing dolomite: Approx. 1.1 million tons

Recent Advancements

DMG had set up the program following preliminary exploration work and follow-up work for Phosphorite aiming to find out the geological existence of Phosphorite as well as its quality and quantity in about one square kilometer. Detail topographic survey and geological mapping was performed. The phosphorite mineral exploration was carried out in Baitadi District of Sudurpaschim Province, Nepal.



Project Implementation Modality



Private
Investment



Royalty structure for Phosphorite: 5% of the fair market value

(Mines and Minerals Rules, 2056 (1999) – (including 4th Amendment)

*(*Revenue Model will be followed as per the guidelines provided by Department of Mines and Geology)*

Additional Information

- As per the Mines and Minerals Rules, 2056 (1999) – (including 4th Amendment), Phosphorite has been categorized as the Precious and Valuable Mineral
- The person who has obtained permission for exploration work must conduct the exploration within 6 months from the date of obtaining the permission for exploration work. In the case of precious and valuable mineral substances, the right to conduct exploration work is granted for up to 4 years.

Relevant Agencies

- Ministry of Industry, Commerce and Supplies
- Department of Mines and Geology

About the Agency

The Department of Mines and Geology (DMG) established under the Ministry of Industry, Commerce and Supplies (MoICS), is the sole government organization that is responsible for all types of geological surveys, mineral exploration, and administration of Mining Rules and Regulations in Nepal. Its important mandate includes the exploration and evaluation of mineral resources, the promotion of minerals through the formulation of robust policies and laws, and the regulation and monitoring of mineral exploration, mining, and related industries. Furthermore, the DMG provides technology transfer and expertise services to organizations involved in mineral sector development, infrastructure development, natural hazard mitigation, and environment protection.

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