

**RECONNAISSANCE GEOLOGICAL REPORT ON LANDSLIDE AFFECTED
VILLAGE-NERI, PATTI-GAMRI, TOK- DIKHOLI, TEHSIL- CHINYALISUR,
DISTRICT UTTARKASHI**

The Neri Village is approximately 7.5km from Tehsil Chinyali, District Uttarkashi, Uttarakhand on Jogat Motor Road and approximately 80-100m on foot by bridle path. In the above mentioned questioned area, the reconnaissance geological investigation was carried out in the presence and co-operation of Mr. Surendra Singh Rana, Nayab Tehsildar. Mr. Vijai Kumar Sain, Consultant Geologist, and Miss Anupriya Shah, Consultant Associate Geologist collected field datasets during geological inspections of ‘ODCH’ nearby sites’ on dated 7th January 2014.

The Neri village falls on coordinates – N 30°36’03.6” E 78°19’27.5” and elevation 942m. The village is situated on the left bank of the Bhagirathi River and the vertical distance is 100-110m while the horizontal distance is 40-45m from the river. The population of the village was informed during inspection was about 250 people which include 50 families living in 25 houses.

The Neri Village is situated on hill top about 70-80m above the Jogat road with an overburden thickness of 3-7m. The overburden in this area is brown in colour with low compactness. The downhill slope of the area is 60°-63° towards West direction while the uphill slope is 54°-56° towards West direction. The rock fragments in the overburden are more in percent about 70% in comparison to the soil matrix. The soil is dark brown in color with fragments of phyllite and is moderately saturated.

The area is affected by a huge landslide for approximately 1.2km length along the Jogat Motor road at the toe of the Village Neri. The slope of overburden at the toe near the road is 36° towards NE direction which increases in the upper part of the landslide to 72° towards NE direction.



A view of the active landslide in the area.



Landslide debris material.

The landslide debris is colluvial and includes angular to sub-angular fragments of phyllite, mixed quartzite with quartz veins and fine matrix. The phyllite fragments are approximately 60% while quartzite fragments are 20% and rest is fine soil matrix. The material is sliding and coming out towards the slope direction. There is two type of slide movements active in this slide. One movement is towards the hill side which is highly active in nature and other is slow movement towards the downslope. At many places there is moderate to high water saturation in the loose sediments of the slide which is further making it unstable.



Toe cutting by Bhagirathi River below the village lead to this huge landslide in colluvials.

The road cutting for Jogat Motor marg is making the slope unstable for the village portion. The Bhagirathi River is continuously cutting the toe of the village and the meandering of the river and the road cutting are collectively affecting the entire area. The toe cutting by the river is the main cause for this huge landslide in the area which is highly active.



Developed cracks in the village Neri.



Detached portion of the terrace.



Both fast and slow creeping are active.

In the village, above the road some cracks have developed and a vertical detachment of 0.3-0.6m in the overburden is observed. This detachment extends horizontally for more than 45m approximately. Some boulders of 1.2-1.5m are also seen which are providing some stability but due to the cracks they are also moving towards the slope. In the village tilted electric poles are seen showing active creeping taking place towards the westward slope.

CONCLUSION:

Prima-facie, presently, the village Neri is highly unstable and unsafe for the villagers to live due to the active landslide zone and toe cutting by Bhagirathi River.

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