

**RECONNAISSANCE GEOLOGICAL REPORT OF PROPOSED SITE OF SHRI SOBAN SINGH S/o SHRI BADAR SINGH FOR THE CONSTRUCTION OF OWNER DRIVEN CONSTRUCTION FOR HOUSING (ODCH) VILLAGE KAFNAUL, TEHSIL- BARKOT- DISTRICT UTTARKASHI, UTTARAKHAND**  
**KHASARA No. – 1561 & AREA – 0.050 ha.**

**Date of Inspection: 26/12/13**

In a 'World Bank' funded programme, Government of Uttarakhand has provided teams of Consultant Geologists and Consultant Associate Geologists to Director, Geology and Mining Unit, Uttarakhand for geological studies in proposed sites for Owner Driven Construction For Housing (ODCH) in disaster affected districts of Uttarakhand.

Director, Geology and Mining Unit, Directorate of Industries, Uttarakhand has issued an Office Order No.1612 Aa. Pra./Bhu.Ni./Bhu.Khani.E./2013-14 dated 10<sup>th</sup>December 2013 regarding geological studies in disaster affected five districts of Uttarakhand, Uttarkashi is one of them. Thus, undersigned have taken geological observation during traverses and collected field geological data under the management of cosignatory departmental 'Assistant Geologist'.

In the above mentioned questioned area, the reconnaissance geological investigation was carried out in the presence and co-operation of Shri Shyam Singh Chauhan, Revenue Sub-Inspector, Darso. It is 44Km approx from Tehsil Headquarter Barkot, Uttarkashi, Uttarakhand and the site is 32Km approx from NH-123 (Delhi-Yamunotri National Highway), through 600m approx bridle path in village Kafnaul from Rari-Kafnaul motar marg. It falls on coordinate – N 30<sup>o</sup> 45.050 E 78<sup>o</sup> 10.556 El. 6877feet. The proposed site is in village Kafnaul which is densely populated.

The proposed site is on consolidated colluvial overburden material of about 7.5-8.5m approx thickness. Man-made cultivated terraces are present with less vegetation around. The uphill slope at the proposed site is 38<sup>o</sup> and the downhill slope is 11<sup>o</sup> approx sloping in N 115<sup>o</sup> direction. At the proposed site thin soil cover is present of varying thickness of about 5cm to 20cm approx thickness.

No in-situ rock are found near the proposed site location as the site is covered with thin and consolidated colluvial soil cover in which fragments of phyllite, of varying size from 0.5cm to 2cm approx, are present in the soil matrix. The rate of infiltration is low making the soil water saturation low. At the proposed site location the water seepage is low. The tree above and around the site are standing straight which shows that there is no active movement in the landmass. New constructions are under progress in the uphill side of the proposed site.



**Close view of the proposed site**



**Uphill side view from the proposed site**

## RECOMMENDATIONS:

1. Inclined retaining wall at the northern backside with depth of foundation more than the foundation depth of the house, with provisions of weep holes and sufficient gap of about 2-3feet in between the backside retaining wall and the proposed construction should be constructed. And also, proper drainage system between the retaining wall and the wall of house should be developed.
2. The surface drainage should be properly planned through lined drain/pipe, so both rainwater from uphill side as well as waste water from the existing houses to be release safe place at down-hill along a channel.
3. Inclined retaining wall with provisions of weep holes at the toe of the proposed site is recommended.
4. The foundation depth of the houses must be as per the compactness of the overburden material in the proposed site.
5. The soakpits and toilet foundations must be quiet away from the house so that the foundations are not directly affected from subsidence due to excessive seepage and differential settlement.
6. The back, sides and the foundation must be made 'pukka' in order to avoid excessive seepage of the surface water.
7. Framed structure with light roof must be constructed as the area falls in the earthquake zone IV, so it is essential that the house must be constructed with latest earthquake resistive techniques.

## CONCLUSION:

Prima-facie, presently the proposed site of Shri. Badri Singh S/o Shri. Kewal Singh is geologically feasible for the proposed construction, only if, the above mentioned recommendations will be followed strictly, otherwise, in its contravention; geologically suitability will be deemed annulled.

  
(Shashank Sharma)

Consultant Associate Geologist

**Date:**

**Place: Camp Uttarkashi**



(Vijai Kr. Sen)

Consultant Geologist



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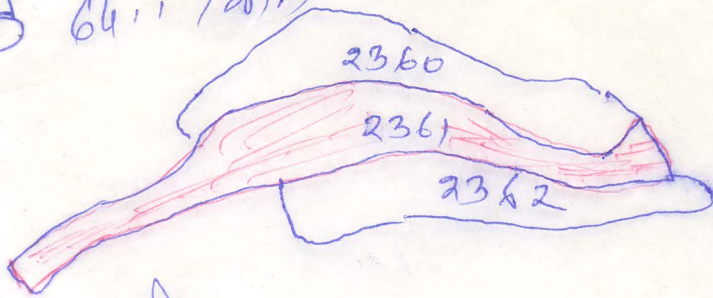
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