

**RECONNAISSANCE GEOLOGICAL REPORT OF PROPOSED SITE OF SHRI
GOVIND SINGH S/o SHRI RAM SINGH FOR THE CONSTRUCTION OF OWNER
DRIVEN CONSTRUCTION FOR HOUSING (ODCH)
VILLAGE-KHALADI, TEHSIL- PUROLA DISTRICT- UTTARKASHI
KHASARA No. -2239 & AREA -0.020 ha**

Date of Inspection: 29/12/13

In a 'World Bank' funded programme, Government of Uttarakhand has provided teams of Consultant Geologists and Consultant Associate Geologist to Director, Geology and Mining Unit, Uttarakhand for geological studies in proposed site 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 10th 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 B. S. Chauhan, Revenue Sub-Inspector, Khaladi. The proposed site is 8Km approx from Tehsil Headquarter Purola, District Uttarkashi, Uttarakhand and 100m hill side form Purola-Khaladi motor road. It falls on coordinate – N 30^o 52' 51.6" E 78^o 5' 13" El. 1728m. At 50m horizontal distance Ghuttu Gad in SE direction is present from the proposed site.

The site is located on colluvial deposit and man-made cultivated step terraces are present. The thickness of overburden is varying at places in between 1-1.5m approx with boulders embedded in the soil at the proposed site. The boulders of phyllite and dolomite, is present on hill ridge two side slopes are 20^o -25^o in SE direction and 25^o -30^o in NW direction. The proposed site location is covered with very thin soil cover of 2-5cm approx with less vegetation around.

At the proposed site in-situ rocks are exposed at about 30-40m approx on the foot way phyllite rocks with quartz vein. The orientation of the bed is as- Dip amount 40^o dipping in S 30^oW direction. The rocks are jointed and weathered and orientation of the joints is as- J1 – Dip amount 85^o dipping in S30^o W, J2 dip amount 62^o dipping in S 60^o E direction. The dip of the bed is towards the hill i.e., opposite to the hill slope.



Close view of the proposed site

Thin and consolidated soil cover with rock fragments of phyllite varying in size from 5-10cm, with fined grained light brownish silty soil matrix are found. Boulders were embedded in the soil of varying size from 60cm to 80cm approx at and around the proposed site. The trees near the proposed site are standing straight which shows there is no active movement in the area. Some construction work is already under progress at the proposed site.

RECOMMENDATIONS:

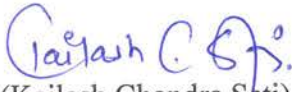
Based on above surface geological observations, the proposed area seems geologically suitable for the proposed building construction. The following remedial measures are recommended for safety:

1. 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 with more dimensions than that of maximum possible volume of water.
2. The foundation depth of the houses must be as per the compactness of the overburden material in the proposed site.
3. Inclined retaining wall at both NW and SE toe of the proposed site with provision of weep holes at specific distance should be constructed
4. Massive plantation of trees, bushes and grasses which can hold the soil mass and retained the debris with dense and long rooted, wide/broad leafed flora must be done to protect the soil erosion and minimize the surface erosion of the subsurface rocks.
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.
6. The premises of house must be made 'pukka' to prevent excessive subsurface seepage and downward percolation of water and differential settlement.
7. Framed structure must be used and light roof should 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, scientific and technically sound craftsmanship with logical and favourable principles of soil mechanics.


CONCLUSION:

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

(Vivek Sahu) 
Consultant Associate Geologist


(Kailash Chandra Sati)
Consultant Geologist

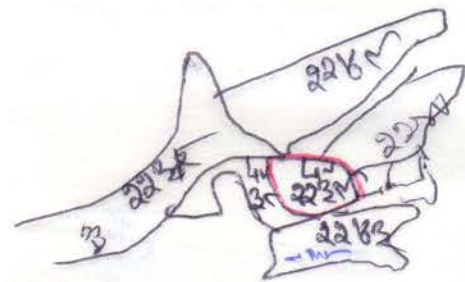
Date:
Place: Uttarkashi


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Assistant Geologist
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जब 211 ग्राम स्वल्पी पही कमलसिंह तह पूराला जिला 30 का
 उस शर्त का जही पूर प्रामितिकर प्रकार का निर्माण
 करना चाहता है।

प्राची - गोविन्दसिंह पुं रामसिंह
 ग्राम स्वल्पी
 तह - पूराला

दिशा 64" = 1 बिल



प्रहलवि शर्मा 2231
 मिलानी शेख 2243

नेथा कर्मा
 22/11/13
 राउत मन्थन

- नीहकी इत्युक्त
- 1- 2231 म स्व - 2230 सोवल्दिह शर्मा
 - 2- 2232 म स्व - 2235 अमिताभसिंह शर्मा
 - 3- 2233 म स्व - 2236 मन्वीरसिंह शर्मा
 - 4- 2234 म स्व - 2243 उत्तराखण्ड शर्मा

स्वल्पी ग्राम स्वल्पी पही कमलसिंह तह पूराला जिला 30 का

स्वल्पी नम्बर	स्वल्पी	स्वल्पी	नाम शर्मा/शर्मा	प्रहलवि स्वल्पी नम्बर	प्रहलवि स्वल्पी	स्वल्पी	नाम शर्मा/शर्मा अथवा प्रामितिकर प्रकार का नाम/पिता का नाम/निर्वाह स्थान
1	2	3	4	5	6	7	8
2231	0.220	900	राजीवसिंह शर्मा वन-211	2231	0.095	900	गोविन्दसिंह पुं रामसिंह निष्ठ ग्राम - स्वल्पी तह - पूराला उत्तरकाशी

नीहकी इत्युक्त प्रकार

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