

**RECONNAISSANCE GEOLOGICAL REPORT OF PROPOSED SITE OF SHRI
RANJEET SINGH S/o SHRI HARICHAND FOR THE CONSTRUCTION OF
OWNER DRIVEN CONSTRUCTION FOR HOUSING (ODCH)
TOK-BHAYANG VILLAGE- UDRI, TEHSIL- DUNDA- DISTRICT UTTARKASHI,
UTTARAKHAND
KHASARA No. – 214 & AREA – 0.015 ha**

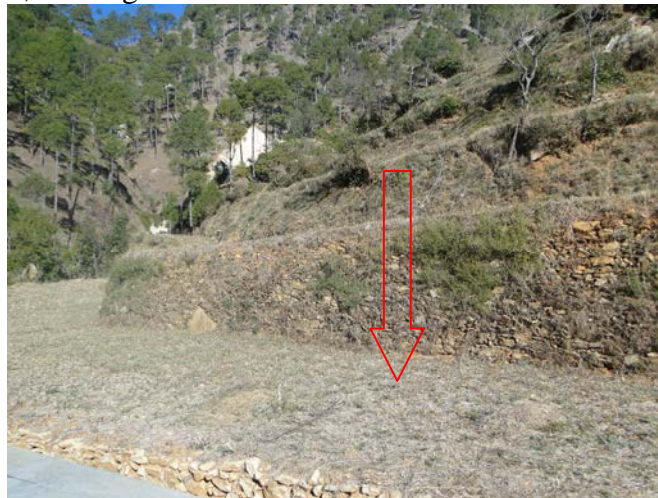
Date of Inspection: 23/12/13

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 Pyar Singh Chauhan, Revenue Sub-Inspector, Dhauntri. The proposed site is 60Km approx from Tehsil Headquarter Dunda, District Uttarkashi, Uttarakhand. It falls on coordinate – N 30° 34' 38.1" E 78° 31' 4.2" El. 1669m. The site is 5Km approx from Dunda-Lambgaun motor road, on the right bank of river Udrigad and is 300m approx horizontal distance and 60-80m approx vertical distance from the Udri gad river which is flowing in E-W direction. The proposed site is dense populated.

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 2-3m approx with fragments of quartzite in the soil at the proposed site. The fragments of quartzite, are varying in size from 2cm to 5cm approx, are found at and around the proposed site location. The uphill slope at the proposed site is 25°-30° and the downhill slope is 30°-35°, after two terraces the slope increases to 30°-35° sloping in S direction. The proposed site location is covered with thick soil cover of 1-1.5m approx. At around the proposed site location less vegetation is present. A perennial water body Udri Khadd is at about 200m approx distance from the proposed site, flowing in east to west direction.



Close view of the proposed site

At the proposed site, there was no in-situ rocks exposed but at about 30-40m approx in northern the site quartzite rock is exposed. The orientation of the bed is 30° in N 30° W direction and joints J1 dipping 62° in S 30° E direction, J2 dipping 80° in S 30° W direction and J3 dipping 75° in eastward direction. The dip of the bed is towards the hill i.e., opposite of the hill slope.

At the proposed site, thick and consolidated soil cover with rock fragments of quartzite varying in size from 2-3cm, with fined grained light grey clayey soil matrix are found. The trees near the proposed site are standing straight which shows there is no active movement in the area.


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. Inclined retaining wall at the uphill and downhill side with depth of foundation more than the foundation depth of the house, with provisions of weep holes and sufficient gap of about 0.5-1.0m 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 with more dimensions than that of maximum possible volume of water.
3. The foundation depth of the houses must be as per the compactness of the overburden material and on rock in the proposed site.
4. Inclined retaining wall at the toe of the proposed site with provision of weep holes at specific distance should be constructed
5. 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.
6. The soak pits and toilet foundations must be quiet away from the house so that the foundations are not directly affected from subsidence due to excessive seepage.
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.

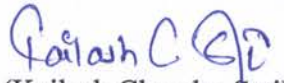
CONCLUSION:


Prima-facie, presently, the proposed site of Shri. Ranjeet S/o Shri. Harichand 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

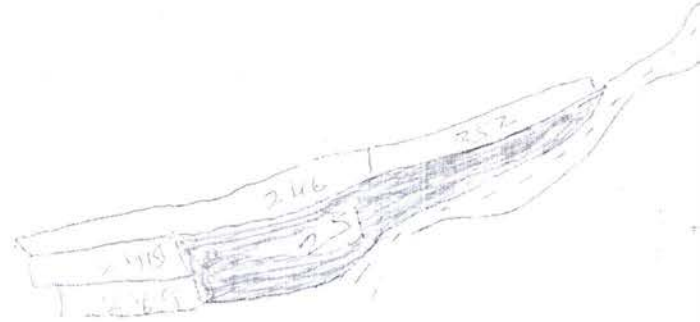
Date:

Place: Uttarkashi


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समस्त आर्य समाजियों का सम्मान तहजीब उज्ज्वल दिना प्रकाशनी के द्वारा



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