

RECONNAISSANCE GEOLOGICAL REPORT OF SHRI RAKESH NAUTIYAL S/o SHRI SHIVANAND NAUTIYAL FOR THE PROPOSED CONSTRUCTION OF OWNER DRIVEN CONSTRUCTION HOUSING (ODCH) TOK-BHAKDA, VILLAGE-ASTAL, TEHSIL- DUNDA, DIST.- UTTARKASHI KHASRA No.-69 & AREA-0.010 ha.

Date of Inspection: 20-12-2013

In a 'World Bank' funded programme, Government of Uttarakhand has teams for geological studies in sites proposed for Owner Driven Construction House (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 10thDecember 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 Nathi Singh Panwar, Revenue Sub-Inspector, Hiranu It is 20Km approx from Distt. Headquarter Uttarkashi, Uttarakhand near Devidhar-Ranari motor way. That proposed site situated on the coordinates N 30° 43'18.2" E 78° 26'18.1" and El. 970m from msl. The proposed site is in Bhakda Tok of village Astal which is moderately populated.

The proposed site situated on fluvial deposited terrace, cultivated land about 600m in length and 200m in width in southward direction along Bhagirathi River. About 2-5m thickness of overburden, in overburden quartzite fragment varying 1-5cm and bolder size is 1.5-2m with fine to course to fine grain blackish grey soil matrix.



Hillside view of the proposed site



Close view of the proposed site

The proposed site is generally situated on flat cultivated land, so that around the site low vegetation found there. General slope of the proposed site is 10°-15°; uphill side slope is 10°-15° and downhill slope is 5°-10° towards east direction slope are very gentle from the

proposed site. The perennial nala Kardigad is about 200m in northward direction and 600m in southward direction Dhanpati River from this proposed site.

The proposed site is on old fluvial deposited terrace. In overburden angular, sub-angular rounded, sub-rounded fragments of quartzite varying 2-3cm with brownish coarse to fine grain sandy soil matrix made up of fluvial terrace. The site 200m valley side form uphill slope in toe of the hill; the hill slope is dense pine tree vegetated. In-situ rock exposed on Devidhar-Ranari motor road about 300m and perennial nala Kardi gad is found about 200m N direction. The bed rock is quartzite with interlayer with phyllite exposed on Devidhar-Rnari motor road. The exposed rock dipping 20° towards N 40° E, Joint J1 is 90° and J2 is 45° towards West direction.


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. All drainage of the construction area should be properly planned through lined drains/pipes. Both rain water as well as waste water from the house should be released to safe places.
2. As the area falls in Lesser Himalayan earthquake zone IV, so the house must be erected with sound earthquake resistant techniques, and technically sound craftsmanship.
3. The foundation depth of the houses must be as per the compactness of the overburden material in the proposed site.
4. Light weight and slanting roof, framed structure house for construction is immensely is preferable.
5. On the uphill side and below the road in north direction of the proposed site, cemented inclined retaining wall is preferable.


CONCLUSION:

Prima-facie, presently, the proposed site of Shri. Rakesh Nautiyal S/o Shri Shivanand Nautiyal is geologically feasible for the proposed construction, only if, the above mentioned recommendations will be followed strictly, otherwise, in their contravention the geological suitability will be deemed canceled.


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