Report S. No. 235 /ODCH (Utk-Teh.-Bhatwari)/2013-14

RECONNAISSANCE GEOLOGICAL REPORT OF PROPOSED SITE OF SHRI RAJESH, ASHISH S/O SHRI PRATAP SINGH FOR THE CONSTRUCTION OF OWNER DRIVEN CONSTRUCTION HOUSING (ODCH) VILLAGE MANERI, TEHSIL- BHATWARI- DISTRICT UTTARKASHI, UTTARAKHAND
KHASARA NO – 1640 & AREA – 0.014 ha

Date of Inspection: 12/12/13

INTRODUCTION:

In a 'World Bank' funded programme, Government of Uttarakhand has consummate teams of undersigned for geological studies in proposed site 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 10th December 2013 regarding geological studies in disaster affected five districts of Uttarakhand.

In the above mentioned questioned area, the reconnaissance geological investigation was carried out in the presence and co-operation of Shri Subodh Singh Rana, Revenue Sub-Inspector, Maneri for proposed site of Shri Rajesh, Ashish S/o Shri Pratap Singh, Village Maneri, Tehsil- Bhatwari, Khasara No- 1640, Area-0.014 ha. The site is 14km approximately from District Headquarter Uttarkashi, Uttarakhand and is 2km approximately from the UJVN private road through bridle path. It falls on coordinate – N 30˚ 44. 583' E 78˚ 32.244' elevation 4730 feet. The site is on the right bank of river Bhagirathi and is about 250 m approx distance from the Bhagirathi river bank, in SE direction. The site is less populated.

GEOMORPHOLOGICAL OBSERVATION OF THE AREA:

The proposed site has a downhill slope of 32˚ and uphill slope is 37˚ towards South direction. The site has an overburden thickness of approx 10-15 m with quartzite boulders. The site is almost 170 m from Dhar Top hill in the North direction. The vegetation is moderate around the proposed site.

GEOLOGY OF OBSERVATION OF THE AREA:

Regional Geology

Uttarkashi valley exhibits characteristic rugged topography of the Lesser Himalayan terrain. The ground elevations generally vary between 1150m to 2000m above msl. The hill slopes in the area are generally observed to comprise of rocky outcrops, rocky cliffs and mantle of colluviums. The hill slopes in the area is generally moderately steep (25˚- 35˚) to steep (36˚-45˚) while few escarpments or cliffs (> 50˚) are also present.

Uttarkashi town is located in the Lesser Himalayan geotectonic block and it is bound by two major Thrust fault i.e. Main Central Thrust (MCT) and Srinagar Thrust (ST). The MCT can be traced to the northeast of Uttarkashi while the Srinagar Thrust lies in the southwest. Phyllite, metabasic and quartzite of Garhwal Group are exposed around the area.

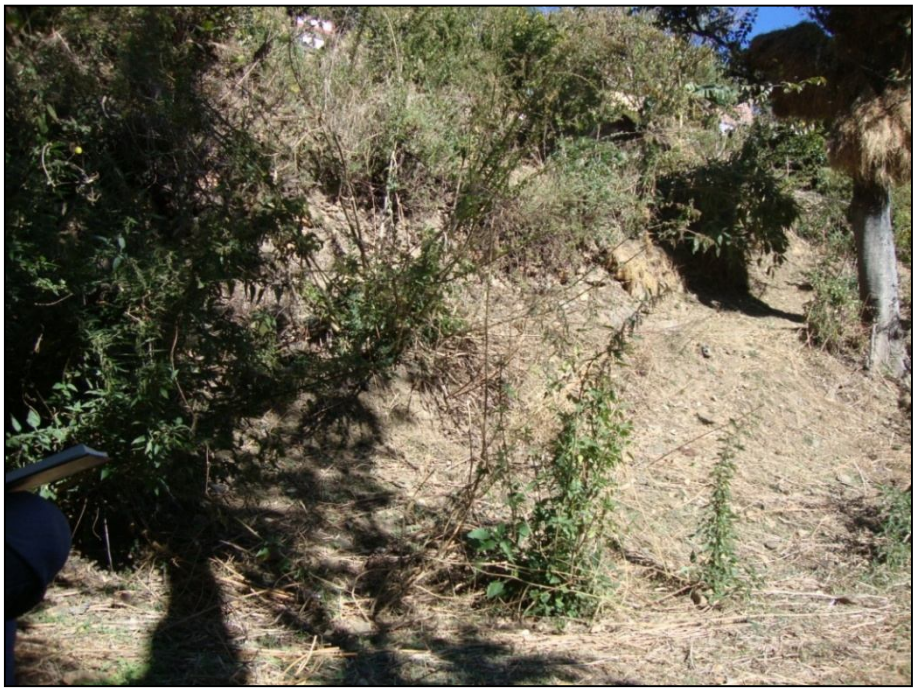
Geologically, the area falls in the region of rocks of Netala Formation of Lesser Himalayan terrain. Quartzite with bands of limestone, phyllite and slate is fine grained, compact, massive in general, but jointed and fractured at places. The slope of the hill ranges between 25˚-30˚ towards eastern direction. At few places insitu rocks are exposed in the plot whereas maximum plot area is covered with overburden. This overburden material comprising soil, hillwash and debris of varying size consisting of brown colored, fine to medium grained silty to gravely matrix with angular fragments of dolomitic limestone and a few brown fine grained shale etc., in which percentage of the angular fragments is more than the matrix. The major joint trends 240˚/30˚ NW (Oblique to foliation plane) whereas minor joint trends 265˚/40˚ NW.

Geology of Site

No in-situ rocks are found near the proposed site. The land is stable and consolidated.

GEOTECHNICAL OBSERVATION OF THE AREA:

The site is covered mainly by soil debris with alluvial type soil along with fragments of quartzite of 1cm to 4 cm size approx. There is no landslide history for almost 6o years in and around the site. At the proposed site the soil is consolidated and there is no plot boundary. Already some houses and a primary school have been constructed within last 5 years.



A close view of the proposed site for construction

CONDITIONS AND RECOMMENDATIONS:

1. The foundation depth needs to be estimated depending on the compactness of the overburden at the proposed site for sustainability of the site.
2. A retaining wall should be constructed with the dimension of 10m height, 2m base and 25 m length in the toe side of the proposed site, with proper weep holes at specific distances.
3. The proposed house must be constructed keeping a gap of about 2-3ft from the uphill overburden mass.
4. The back, sides and premises of the proposed house to be made cemented for avoiding water seepage and proper drainage system for discharge of rain water from the uphill side as well as the household water is highly recommended
5. Framed structure must be used as the area falls in the earthquake zone IV, and it is essential that the house must be constructed with latest earthquake resistive techniques.

CONCLUSION:

Prima-facie, the proposed site of Shri Rajesh, Ashish S/o Shri Pratap Singh is geologically feasible for construction of house, only if, the above mentioned recommendations will be followed strictly, otherwise, in its contravention, geological suitability will be deemed voided.

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Date:
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18/12/2023

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