## RECONNAISSANCE GEOLOGICAL REPORT OF SHRI RAJEEV PRASAD S/O SHRI KAMLESHWAR PRASAD FOR THE PROPOSED CONSTRUCTION OF OWNER DRIVEN CONSTRUCTION HOUSING (ODCH) VILLAGE-KHABLISERA, TEHSIL- PUROLA, DIST.- UTTARKASHI KHASRA NO.-1856 & AREA-0.018 ha.

Date of Inspection: 28-12-2013

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 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 Kamleshwar Prasad Nautiyal, Revenue Inspector Purola. The proposed construction site is located 1km away from Tehsil headquarter Purola. It falls on coordinate – N  $30^053^\prime21^{\prime\prime}$  E  $78^005^\prime34.4^{\prime\prime}$  and El.1394m from msl.

The proposed site is situated on overburden which is man-made flat hill terrace. At 300m horizontal distance in the south direction on the left bank of Kamal river about 1-1.5m approximate thickness of overburden is present. In overburden, schistose gneiss fragments of size 10-15cm with fine grain blackish-brown clayey soil matrix are present. No in-situ rock is found in the area with low vegetation around.

General slope of the proposed site is  $2^0-5^0$ , uphill and downhill slope is  $10^0-15^0$  approx in W direction. The proposed site is on coluvial deposit no slide, slumping and subsidence found in this surrounding and also there is no water seepage problem noticed.



Close view of 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. Inclined retaining wall at the uphill & downhill side and reconstruction of the south side wall with provisions of weep holes at sufficient gap of about 0.50-1.0m approx should be constructed. And also, proper drainage system between the retaining wall and the wall of house should be developed. A minimum distance of 1.0-1.5m should be kept between the backside inclined retaining and the back wall of the house to avoid seepage into the house.
- 2. The foundation depth of the house must be as per the compactness of the overburden material in the proposed site.
- 3. The backside retaining must be provided with screening material to keep the weep-holes passage clear for discharge of subsurface water to maintain stability of foundation of the house.
- 4. 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.
- 5. As the area falls in Lesser Himalayan earthquake zone IV, light weight roof, deep column, framed structure, and single or double storied house construction is preferable.

## CONCLUSION:

Prima-facie, presently, the proposed site of Shri Rajeev Prasad S/o Shri Kamleshwar Prasad 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 void. Tayan C. Ste

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