

**RECONNAISSANCE GEOLOGICAL REPORT OF PROPOSED SITE OF
SHRI SATPAL S/O SHRI BHURA FOR THE CONSTRUCTION OF
OWNER DRIVEN CONSTRUCTION FOR HOUSING (ODCH)
VILLAGE- GAIR MU., TEHSIL- BARKOT- DISTRICT UTTARKASHI,
UTTARAKHAND**

Date of Inspection: 16-01-2014

In a 'World Bank' funded programme, Government of Uttarakhand has provided teams of Consultant Geologists and Consultant Associate Geologists to Director, Geology and Mining Unit, Uttarakhand for geological studies in proposed sites 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. District Uttarkashi is one of them where the undersigned took traverses and collected field geological observations under the management of cosignatory departmental 'Assistant Geologist'.

The site is 50km approximately from Tehsil Headquarter Barkot, Uttarkashi, Uttarakhand from NH-123 (Delhi-Yamunotri National Highway) via Rari-Kafnaul-Varnigaad motar marg and is about 7km on foot by bridle path from the Varnigaad road. It falls on coordinate – N 30°43'05.3" E 78°10'19.7" and elevation- 1772m. The proposed site is less populated.

The proposed site is on man-made cultivated terrace with colluvial overburden material of about 2-3m. The uphill slope at the proposed site is 30° towards NE direction and the downhill slope is approximately 30°-35° NE direction. In the back slope of the site forested land is present in South side of the plot. The overburden consists of reddish color silty clay soil with fragments of phyllitic quartzite about 5-10cm in size.



Close view of the proposed site



Far view of the proposed site

There are remains of previously damaged house on the proposed construction site. Fractured and disturbed in-situ rocks are found in the foundation of the site. At and around the proposed site location the water seepage is low.

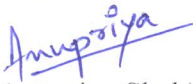
1. RECOMMENDATIONS:

Based on above surface geological observations of the proposed area the following remedial measures for construction of a geologically suitable house are recommended:

1. Inclined retaining wall of 3m at the backside SW boundary and at toe NE boundary of the plot and third retaining wall of 2m in East boundary of the plot, with provisions of weep holes must be constructed to enhance the stability of the plot.
2. A sufficient gap of about 2-3feet in between the backside retaining wall and the proposed construction should be kept.
3. A proper drainage system with discharge towards SE direction must be developed at the site.
4. The foundation depth of the houses must be as per the compactness of the overburden material in the proposed site.
5. The back, sides and the premises must be made cemented in order to avoid excessive seepage of the surface water.
6. Framed structure with light roof, deep column and single storied house construction is preferable as the area falls in the earthquake zone IV.

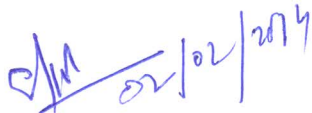
2. CONCLUSION:

Prima-facie, presently the proposed site of Shri Satpal S/o Shri Bhura is geologically feasible for the proposed construction, only if, the above mentioned recommendations will be followed strictly, otherwise, in its contravention; geologically suitability will be deemed voided.


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