

परियोजना का नाम : राज्य योजना के अन्तर्गत जनपद रुद्रप्रयाग के विधानसभा क्षेत्र केदारनाथ के विकासखण्ड अगस्त्यमुनि में कुमोली (कर्णधार) से बमोली-मयकोटी मोटर मार्ग का नव निर्माण, ल0 4.00 किमी0 (वास्तविक ल0 3.300 किमी0)

भू-वैज्ञानिक की आख्या

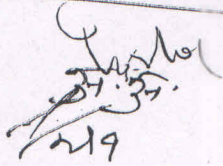
----- संलग्न है। -----

कार्यालय प्रमुख अभियन्ता एवं विभागाध्यक्ष  
उत्तराखण्ड, लोक निर्माण विभाग,  
देहरादून।

भू-गर्भीय निरीक्षण आख्या एस0जी0-854/सड़क/पुल/सम्प्रेक्षण/गढ़वाल/2015

Geological Assessment of 3.3 km long alignment corridor  
proposed for Kumoli (Karandhar) to Bamoli-Maikoti motor  
road in Agastyamuni Block, Distt. Rudraprayag.

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02-सितम्बर-2015

**Geological Assessment of 3.3 km long alignment corridor proposed for Kumoli (Karandhar) to Bamoli-Maikoti motor road in Agastyamuni Block, Distt. Rudraprayag.**

*Vijay Dangwal*

*02.09.2015*

**1. Introduction:-** The Provincial Division, Public Works Department Rudraprayag vide G.O No. 6700/111(2)/11-129(प्रत0आ0)/2011 दिनांक 22.12.2014 has been entrusted for the construction of 4 km long (actual length 3.3 km) alignment corridor namely Kumoli (Karandhar) to Bamoli-Maikoti motor road in Agastyamuni Block, Distt. Rudraprayag. On the request made by Shri. Indrajit Bose, Executive Engineer, I carried out the geological assessment of the proposed alignment corridor on 12.08.2015. Er. Arjun Singh Panwar, Asst. Engineer and Er. Arun Singh Rana, Jr. Engineer, PWD, Rudraprayag was present at the site.

Two alternative alignments i.e Alignment No.1 and Alignment No.2 was suggested by the Division for geological assessment of the above said motor road but on the basis of the various geological, geotechnical, geo-morphological and comparative studies the alignment No.1 was found suitable for the construction. The present report is being generated based on the geological assessment made along the alignment No. 1.

**2. Location:-** The alignment corridor proposed for the above said road originates from km 7 of Tilwara-Tolab-Maikoti-Dangi-Gunao LVR located in Agastyamuni Block, Distt. Rudraprayag.

**3. Geological Assessment:-** Bounded between the Main Central Thrust (MCT) in the North and Main Boundary Thrust (MBT) in the South. The entire gamut of Lesser Himalaya is characterized by the rugged and dissected terrain and the topography of this area is marked by the steeply inclined hill slopes and deeply dissected river valleys. The alignment corridor in question lies in a part of this segment of the Main Himalayan Belt and it is represented by the rock masses i.e the quartzites and porphyroids. The entire alignment corridor passes across the slopes inclined at low to moderate angle and part of the slopes of this alignment are altered by the local farmers in the form of stepped like agricultural fields. Most of the cross slopes are enveloped by the thick cover of overburden material comprised of the rock fragments embedded in the sandy-silty matrix.

Scant outcrops of the bed rocks are exposed along this alignment corridor. The rock masses are hard, compact, slightly to partially weathered in nature and these are generally traversed by four prominent rock defects. According to the estimation made at the site by manual means the "Uniaxial Compressive Strength" of the rocks was found ranging between 30 MPa to 100 MPa and these rocks are "fair to strong" in physical competency.

The overburden material deposited on the cross slopes of this alignment are largely comprised of the angular conglomerates and breccias embedded in the silty-clay matrix. This material comes under the class of heavy soils i.e the soils mixed with boulders and it is naturally dense and compact in nature. According to an assessment made at the site the "Undrained Shear Strength" of this material was found ranging between 300 K Pa to 400 K Pa. This material is stiff and hard in dry conditions.

By and large the entire slopes of the proposed road are stable and free from any sliding/ mass wasting activities.

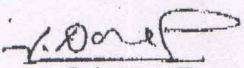
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On the basis of the geological / geotechnical studies carried at the site and the facts mentioned above the following recommendations are being made for the construction of the proposed road failing to these this report will stand as cancelled.

#### **4. Recommendations:-**

1. Form the road by half cut - half fill method and compact the fill material properly by dynamic compaction.
2. Do not dispose the excavated waste on the lower slopes, otherwise it will threat the overall stability of the hill slopes.
3. Construct suitably designed retaining walls/ brest walls all along the road.
4. Construct large size lined long hill side drain all along the road and make adequate cross drainage arrangements.
5. Make adequate arrangements to dispose the drained water on the safe/ stable ground.
6. The drainage work must be taken up immediately after the excavation of the hill slopes.
7. All the construction activity must be carried out as per the standard codes of practice and standards and norms laid by the BIS/MORTH.

**5. Conclusion:-** On the basis of the geological / geotechnical studies carried at the site and with the above recommendations, the site was found geologically suitable for the construction of 4 km long (actual length 3.3 km) alignment corridor namely Kumoli (Karandhar) to Bamoli-Maikoti motor road in Agastyamuni Block, Distt. Rudraprayag.

  
21/9/15  
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