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Groundwater Surveys and Development Agency, CoM.
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Date- 23/11/2024

To,
Shri. Amit Chandrabhan Thakur
Gat no 393(P), Village Koregaon Mul
Tal Haveli
Dist. Pune

Sub: Regarding Hydrogeological Survey at Gat no.393 of Village, Koregaon Mul,
Tal Haveli, Dist Pune.

Ref: Your application dated 11/11/2024

With reference to the above subject hydro-geological survey was carried out in the presence of concern personnel at the Gat no. 393 of Village Koregaon Mul, Tal Haveli, Dist Pune. At the time of Hydrogeological survey, the concern personnel Shri. Sandip Tekawade was present.

The details of the proposed site are as below.

Name of Village	Koregaon Mul, Tal Haveli, Dist Pune
Co-ordinates	Lat - 18.48316067 N, Long - 74.11289573 E
Elevation (msl)	596.49 m
Toposheet & Quadrant No	47J/02 and 3B
Watershed No.	BM-51 : 4/7
Morphozone	A; Ac
Category	Semi Critical (As per Groundwater Assessment 2022-23)
Rock Type	Basalt
Aquifer (Water bearing Zone)	Shallow Aquifer (Jointed and Fractured Basalt)

Location:

Village Koregaon Mul, Tal. Haveli, Dist. Pune is located along the Eastern Metropolitan corridor of Pune, just off the Pune-Solapur Road. The area under study i.e. said Gat no.393 is located towards East direction of Village Koregaon Mul, Tal. Haveli, Dist.

Geomorphology:

The village area has undulating topography with gentle slope towards North direction where Mula-Mutha river is flowing. The drainage of Koregaon Mul, Tal. Haveli, Dist. Pune village shows dendritic drainage pattern.

Geology:

The area of the village Koregaon Mul, Tal. Haveli, Dist. Pune consists of solidified layers of basalt and thickness of each layer varies from 10.00 to 15.00 meters and formed during upper Cretaceous to lower Eocene period of Geological time scale. The basalts are dark grey to black in color, fine to medium grained, medium jointed and fractured in nature. For the proposed area the geological as well as lithological data is considered as per field observations and reported data.

Lithology	Greyish to brownish coarse grained soil	0.50 - 2.00 m
	Highly to moderately weathered Basalt.	2.00 - 6.00 m
	Greyish black coloured, fine to medium grained, jointed and fractured Basalt.	6.00 - 10.00 m
	Greyish black coloured partly jointed and fractured Massive Basalt	10.00 - 15.00 m
	Greyish black coloured compact Massive Basalt	Below 15.00 m.

Rainfall:- Koregaon Mul, Tal. Haveli, Dist. Pune village receives rain from south-west Monsoon. On an average low to moderate rainfall. The average mean annual rainfall in the district is 708.80 mm.

Hydrogeological Conditions:

At the proposed area the Soil thickness is upto 2.0 m, the weathered basalt thickness ranges 2.0-6.0 m, jointed and fractured basalt ranges 6.00 - 10.00 m., greyish black coloured partly jointed and fractured massive basalt ranges 10.00 - 15.00 m and below 15.00 m the Greyish black coloured compact massive basalt. The entire area of the studied Gat no. 393 is underlain by the basaltic lava flows of upper Cretaceous to lower Eocene age. Geologically the area is covered by jointed and fractured basalt.

Ground water in Deccan trap basalt occurs mostly in the upper weathered and fractured parts down to 1.00 - 15.00 m bgl under unconfined conditions. The water bearing strata at deeper depth exists under semi confined to confined conditions at a depth of about 30-45 m and 50-55 m. From the groundwater availability point of view, the area is moderate yielding groundwater potential zone. Area is classified as PLC-39108 (Plateau -Under Canal Command) according to Groundwater Prospect Maps where in groundwater source would yield approximately 100 LPM

The availability of groundwater as a source depends largely upon surface and subsurface geology, geomorphology, natural drainage pattern, depth of weathering and fractures present. Actual annual rainfall, groundwater extraction from other sources in the surrounding area, urbanization, topography modification are also the factors which control and affect the availability of groundwater.

Presently, at the said Gat no.393 one groundwater source (borewell) is present which has been taken in 2011 and currently lifting device of 1.5 hp is installed on the bore well. The details of existing groundwater source are given as below.

Sr. No	Source	Location Gat No.	Details of GW Source				Lifting Device	Water availability
			Dimensions /Diameter in m	Depth in m	Water Level in m.			
					Winter	Summer		
1	Bore Well	Gat no.393 adjacent to Koregaon Mul-off Solapur Road	150 mm	60 m (R)	3.50 m (R)	Moderate to Low yield	1.5 hp.	90 Cum

As per reported information from the applicant representative, the sources in the area adjoining Gat no 393 are mostly private borewells and have moderate to low yield during summer season.

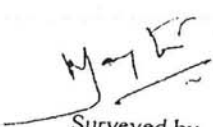
Observations:

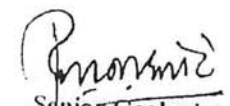
On the basis of Hydrogeological survey done by this office, one groundwater source (Bore well) is present in Gat no 393 adjacent to Koregaon Mul is currently in use for domestic purposes. From the groundwater availability point of view, the surveyed area is moderate yielding groundwater potential zone. By considering the existing source and the sources in the adjoining area 100 lpm water may be available presently from the existing source during seasonally.

Nevertheless, deficit in normal rainfall, increase in population density, excess groundwater extraction from surrounding areas and lack of groundwater recharge may create stress on the availability of groundwater. Following measures are recommended and are mandatory to the applicant.

Recommendations:

1. According to the application it is proposed to develop the area for residential plots at Gat No. 393, Village Koregaon Mul, Tal Haveli. However, since only one groundwater source is present at the said site it is recommended to take additional sources in proportion to the population that will reside at the said site after the development.
2. At the time of any development process the applicant /company /every holder of a said land shall take all possible precautions to avoid the disturbance of the natural drainage system and aquifer system available.
3. The available groundwater should be strictly used for drinking and domestic purpose only. For future development of infrastructure, the requirement of water should be fulfilled by tanker water/untreated raw water so that extraction/utilization of groundwater is controlled.
4. If in future the additional water required for the drinking and domestic purpose, the water requirement should be fulfilled by the water supply connections of local authority and is mandatory to the applicant.
5. For the sustainable availability of groundwater, Roof Top Rainwater Harvesting measures to the existing/new groundwater sources is mandatory.
6. The rainwater harvesting structures should be implemented under the technical guidance of this office (G.S.D.A. Pune) and checked it from time to time.
7. The water quality of existing source should be analyzed regularly by the applicant/firm on its own cost from the water quality laboratory. For drinking purpose treated water should be used.
8. The topographical, hydro-geological conditions and rainfall play very important role for fulfilling the requirement of drinking and domestic water. In view of sustainable groundwater for the drinking and domestic use, the groundwater recharge through rainwater harvesting measures in a quantity equal to the extraction of groundwater from the existing sources is mandatory to the applicant.
9. In view of water requirement for the drinking and domestic use, it is strongly recommended that minimum 70 % of the extracted groundwater must be recycled and reused for further usage.
10. During the Scarcity period the rules of Maharashtra Groundwater (Development and Management) Act 2009 are mandatory to the applicant.


Surveyed by
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