

245 Government of Himachal Pradesh
5/5/21 Jal Shakti Vibhag

No. IPH-B(A)3-1/2019-II Dated Shimla-171002, the

03/15/2021

140 5/5/2021

Diary No..... Date.....
C/o Superintending Engineer, Notification
P&I-II, Jal Shakti Vibhag,
Shimla-171005

Whereas, Hon'ble High Court of Himachal Pradesh in CWP No. 1809 of 2018 titled Sh. Chetan Kumar and others versus the Chief Secretary to the Government of Himachal Pradesh and others decided on 22.10.2018 observed as under:

- The ground water being precious asset cannot be allowed to be misused or used with luxury. Extraction of ground water has to be permitted subject to construction of rain water harvesting structure in the premise and only when the Authorities through scientific process are satisfied about availability of water at the identified spots.
- The distribution of the extracted ground water is a major administrative issue. It involves the right of village community, gram panchayats, municipalities, private users and several other stakeholders. Unless the HPGWA, in consultation with and approval of the State Government, formulates a comprehensive policy for the entire State to save, regulate, recycle and harvest the ground water level, it should be reluctant and refrain itself from issuing permits merely for the reason that the Statute has conferred such power on it.

F.4
S. (GWA)

5/5/2021

In view of aforesaid observations, the Hon'ble High Court directed the State Government and Himachal Pradesh Ground Water Authority to examine each and every aspect illustrated above and re-visit the existing Rules and Regulations and take an appropriate policy decision.

Now therefore, in pursuance of the directions of Hon'ble High Court of Himachal Pradesh, the Governor, Himachal Pradesh is pleased to order to notify the guidelines to regulate and control groundwater extraction in the State of Himachal

Handwritten notes and signatures on the left margin, including 'F.4', 'S. (GWA)', and '5/5/2021'.

Pradesh as per the Schedule attached herewith. These guidelines are subject to modification from time to time.

These orders shall come in force with effect from the date of its publication in the Rajpatra.

This notification can also be accessed in the Rajpatra (e-gazette) of the Official Website of Himachal Pradesh Government.

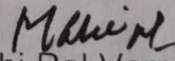
By Order

Vikas Labroo
Secretary (JSV) to the
Government of Himachal Pradesh

Endst No. as above Dated Shimla-2 the 03/15/2021

Copy to:

1. The Engineer-in-Chief (JSV), Jal Shakti Bhawan, Tutikandi, HP Shimla-5.
2. The Member Secretary, HP Ground Water Authority, Jal Shakti Vibhag, Jal Shakti Bhawan, Tutikandi, Shimla-5.
3. All Chief Engineer, Jal Shakti Vibhag, Himachal Pradesh
4. The Controller, Printing & Stationery Department HP, Shimla -5 for publication in Himachal Pradesh Rajpatra.
5. All Superintending Engineers, Jal Shakti Vibhag, Himachal Pradesh.
6. All Executive Engineers, Jal Shakti Vibhag, Himachal Pradesh.
7. Guard file.


(Mahi Pal Verma)
Under Secretary (JSV) to the
Government of Himachal Pradesh

SCHEDULE

Guidelines to regulate and control ground water extraction in the State of Himachal Pradesh

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Guidelines to regulate and control ground water extraction in the State of Himachal Pradesh

Preamble and Background:

On the directions of Hon'ble High Court of Himachal Pradesh in CWP No. 1809 of 2018 titled Sh. Chetan Kumar and others versus the Chief Secretary to the Government of Himachal Pradesh and others decided on 22.10.2018, these policy guidelines have been framed.

The State Ground Water Authority had been constituted in the State of H.P. for effective implementation of the Himachal Pradesh Ground Water (Regulation and Control of Development and Management) Act, 2005 & Rules of 2007, under section 3 (1) of Himachal Pradesh Ground Water (Regulation and Control of Development and Management) Act, 2005, the Himachal Pradesh Ground Water Authority was constituted vide Notification No IPH-B(A) 3-1/2005-II Dated 01.09.2007. The Authority is responsible for the implementation of the provisions of the Act & Rules ibid and under the supervision and control of the State Government performs such functions and discharges such duties as are assigned to it under the provisions of the Act and Rules.

The Authority has been regulating ground water development and management by way of Issuing "Permit for Drilling of New"/"Certificate of registration for already existing" ground water extraction structures for Irrigation/Commercial/ Industrial purpose.

These guidelines will come into force with immediate effect from the date of Gazette Notification.

The entire process of grant of Permit/Certificate of registration shall be online through web based application system.

To have sustainable management of water resources in the State of Himachal Pradesh, these Guidelines to regulate and control ground water extraction and conserve the scarce groundwater resources in the State have been framed.

1. SCOPE & OBJECTIVE

The prime objective of the guidelines for evaluation of proposals/requests for the withdrawal of ground water, is to focus on a specific part of ground water Management viz. ensuring sustainability of ground water both in terms of quantity & quality and also focus on land based management of ground water resources, looking into the variations of variability of water in different climatic regions and diverse hydrogeological conditions in the state of Himachal Pradesh. Explanation for different technical terms under this document is given in **Annexure-I**.

Ground Water is a major source of water in India and globally. In India, more than 85% of the water supplies for domestic use in rural area, 50% of water for urban and industrial areas and 55% of Irrigation water requirement, are being met from ground water. In Himachal Pradesh, the situation is a little different. Most of the drinking water schemes and irrigation schemes are based on spring sources, surface water sources and tube wells and dug wells in Himachal Pradesh. However, ground water remains an important resource for Himachal, as it forms a critical part of the overall ecosystem.

As per the report on Dynamic Ground Water Resources of Himachal Pradesh as on March 2020, the Ground Water Resource Estimation (GWRE) study has been carried out through IN-GRES and the extraction data from April 2019 to March 2020 has been used. All the computations were done online through IN-GRES portal jointly developed by Central ground Water Board and IIT Hyderabad. All the data variables were fed into the IN-GRES portal and valley-wise assessment has been carried out. As per GWRE as on March 2020 carried out using the new assessment unit areas of the valleys (3468 sq km) and through IN-GRES, the stage of Groundwater extraction has been changed/improved and now different valleys of the State fall in the "Safe category". During the Ground Water Resource Estimation 2017 the estimation was made for eight valleys. In the present report ten major valleys have been taken for assessment.

Comparison of area in Assessment units GWRE 2017 & GWRE 2020

Sr. No.	Assessment Unit	District	Area (Sq. Km) in 2017 assessment	Area (Sq. Km) in current assessment
1	Nurpur - Indora Valley	Kangra	503.2 Indora and Nurpur Valley were take as two units previously with area 265.45 & 237.75 sq km respectively	1024
2	Dharamshala-Palampur Valley	Kangra	The assessment for this valley is being carried out for first time in 2020	452
3	Balh Valley	Mandi	95	107
4	Chauntra Valley	Mandi	The assessment for this valley is being carried for first time in 2020	52
5	Paonta Valley	Sirmour	156.77	276
6	Kala Amb Valley	Sirmour	2.5	82
7	Nalagarh Valley	Solan	238.49	336
8	Una Valley (Satluj Basin)	Una	493	1045
9	Una Valley (Beas Basin)	Una	Previously Una Valley was assessed as a single unit	65
10	Hum Valley	Una	22	29
		Total	1510.96	3468

Rest of the area of Himachal Pradesh has been excluded owing to more that 20% slope.
(GEC Recommendations)

As per GWRE as on March 2020 carried out using the new assessment unit areas of the valleys (3468 sq km) through IN-GRES, stage of Groundwater extraction and categorization in different valleys of the State is as under:-

Stage of Ground Water Extractions in Himachal Pradesh as on March 2020				
Sr.No.	Assessment Unit	District	Stage of Development (%)	Categorization
1	Nurpur - Indora Valley	Kangra	29.27	Safe
2	Dharamshala-Palampur Valley	Kangra	13.76	Safe
3	Balh Valley	Mandi	41.39	Safe
4	Chauntra Valley	Mandi	17.12	Safe
5	Paonta Valley	Sirmour	22.44	Safe
6	Kala Amb Valley	Sirmour	27.51	Safe
7	Nalagarh Valley	Solan	58.43	Safe
8	Una Valley (Satluj Basin)	Una	60.99	Safe
9	Una Valley (Beas Basin)	Una	31.35	Safe
10	Hum Valley	Una	58.12	Safe

As per Ground Water Resources Estimation Committee (G.E.C.-1997), the hilly area (slope greater than 20%) are to be excluded because these are not likely to contribute to ground water recharge. Therefore, in view of this, no ground water resource estimation and utilization study has been carried out hitherto in the areas. It is further added that the water availability in such areas is controlled by the local geology, hydrogeology and geomorphology of the area and does not have regional impact on the aquifer system existing in the area.

2. NOTIFIED AREAS

In the State of Himachal Pradesh only 8 civil Sub- Division namely Nahan & Paonta in Sirmour Distt., Solan & Nalagarh in Solan Distt., Una & Amb in Una Distt., and Nurpur & Jawali in Kangra Distt. were notified earlier under Section 5 (3) of HP Ground Water Act, 2005 for the activity of ground water extraction. Now the whole area of Himachal Pradesh has been notified under Section 5 (3) of HP Ground Water Act, 2005 for activity of ground water extraction vide Govt. Notification No. IPH-B (A) 3-3/2018-1 Dated Shimla-2.the 29.11.2019.

Permission to extract ground water will be accorded/ granted for Domestic, Irrigation, Commercial /Industrial purpose by the Authorized Officer in consultation with the advisory committee constituted for this purpose.

3(i) Irrigation & Agriculture Purpose:

NOC can be accorded for construction of ground water extraction structures/ replacement of existing defunct well for irrigation and agriculture purpose only.

The conditions for granting the NOC for Irrigation & Agriculture Purpose in Himachal Pradesh are given below:

- a) The person (s) intending to construct new borewell / tubewell / energized handpump will seek permission from the Authorized office / Advisory Committee, along with the name and address of the drilling agency, which will undertake construction of borewell / tubewell / energized handpump. Authorities / Nodal Agency can ask the user of ground water to supply additional information.
- b) (i) The permission shall be granted for drawl of ground water under The Himachal Pradesh Ground Water (Regulation And Control of Development and Management) Act, 2005, subject to mandatory construction of rain water harvesting structures of capacity at least two times the volume of water extraction allowed per day in the permit / certificate of registration or 5000 litres whichever is more. For the purpose of ascertaining the drawl of ground water the user of ground water shall put a meter to record the volume of water drawl.

- (ii) The owner of the borewell / tubewell / energized handpump shall also has to construct artificial recharge to ground water through rainwater harvesting in the premises. The drawing of artificial recharge to ground water through rain water harvesting is attached at **Annexure-“GWR”**. The minimum depth of 1.65 metre shall be maintained, however the dimensions i.e. length and width may vary as per the size of the campus.
- c) All details of the drilling like rock formations encountered, the depth and diameter of the constructed borewell / tubewell / energized handpump, (Fracture zones encountered/ zones tapped type of pipes used in tube-well, yield of borewell / tubewell / energized handpump and ground water quality etc. shall be kept for record and are to be provided at the time of inspection.
- d) The permission for construction of ground water extraction structure would be valid for a period of six months from the date of issue of NOC. If the structure is not constructed within validity period, the NOC would be deemed to have been cancelled.
- e) Any violation of the above conditions will attract legal action under section 15 of the Environmental (Protection) Act, 1986 and under Section 13 of HP Ground Water Act, 2005.
- f) An undertaking, by the way of an Affidavit as per **Annexure-II** is to be submitted by the applicant.

3(ii) Commercial (Infrastructure Projects) Purposes:

The list of infrastructure projects, other than individual households is given in **Annexure-III**. The conditions for granting the NOC to such categories in the State of Himachal Pradesh are given below:

- a) (i) The permission shall be granted for drawl of ground water under The Himachal Pradesh Ground Water (Regulation And Control of Development and Management) Act, 2005, subject to mandatory construction of rain water harvesting structures of capacity based upon the hydro-meteorological data and the drawing shall be got approved from the HP Ground Water Authority.

- (ii) The Run-off of the entire project area is to be utilized either for artificial recharge to ground water unless risk of contamination exists or area is water logged or for storage for utilization or both. The owner of the borewell / tubewell / energized handpump shall also have to construct artificial recharge to ground water through rainwater harvesting in the premises. The drawing of artificial recharge to ground water through rain water harvesting is attached at **Annexure-“GWR”**. The minimum depth of 1.65 metre shall be maintained, however the dimensions i.e. length and width may vary as per the size of the campus.
- b) Water meter installation in the extraction structure is mandatory and confirmation of water meter installation shall be given to the Authorized Officer after construction. The daily water meter reading should be submitted to Authorized Officer.
- c) All details of the drilling like location of borewell / tubewell / energized handpump (Latitude & Longitude), formations encountered, the depth and diameter of the constructed ground water extraction structures, type of pipes used yield of borewell / tubewell / energized handpump (fracture zones encountered / zones tapped) and ground water quality, etc., have to be furnished to the nodal agency authorized and to CGWB Regional Office within 15 days of the completion of the construction.
- d) The permission for construction of ground water extraction structure would be valid for a period of six months from the date of issue of NOC. If the structure is not constructed within validity period, the NOC would be deemed to have been cancelled.
- e) The NOC issued would be non-transferable.
- f) The Quantum of ground water for usage other than drinking /domestic shall not exceed 25% of total ground water extraction in case of Housing project/ Residential Townships.
- g) The water requirement shall be computed as per National Building Code, 2016 (**Annexure VI**).
- h) Construction of observation well(s) ((Piezometer)(s)) within the premises and installation of appropriate water level monitoring mechanism is mandatory for the

stakeholder drawing water more than 10 m³/day of ground water in the State to monitor the ground water level.

- i) Any Violation of the above conditions will attract legal action under section 15 of the Environment (Protection) Act, 1986 and under Section 13 of HP Ground Water Act, 2005.
- j) An undertaking by way of an undertaking per **Annexure-II** is to be submitted by the applicant.

3 (iii) Industrial Purposes:

NOC for ground water withdrawal will be considered for industries/Mining projects as per the criteria given below:-

Category	Mandatory Recycle/Reuse (for various purposes except recharge to ground water)	Withdrawal permitted (% of proposed recharge)
Safe	Major and Medium Industries to recycle and reuse at least 40% of the waste water	NOC is required for ground water withdrawal subject to adoption of artificial recharge to ground water.
Semi-critical	Major and Medium Industries to recycle and reuse at least 50% of the waste water.	Withdrawal may be permitted subject to undertaking of ground water recharge measures. The withdrawal should not exceed 200% of the recharge quantity.
Critical	Major and Medium Industries should fully recycle and reuse the waste water.	Withdrawal limited to 50% of ground water recharge.
Over-exploited	All industries to fully recycle and reuse the waste water.	No permission for Industries under this category.

The conditions for granting the NOC to such categories in the State of Himachal Pradesh are given below:

- a) (i) The permission shall be granted for drawl of ground water under The Himachal Pradesh Ground Water (Regulation And Control of Development and Management) Act, 2005, subject to mandatory construction of rain water harvesting structures of capacity based upon the hydro-meteorological data and the drawing shall be got approved from the HP Ground Water Authority.
- (ii) The Run-off of the entire project area is to be utilized either for artificial recharge to ground water unless risk of contamination exists or area is water logged or for storage for utilization or both. The owner of the borewell / tubewell / energized handpump shall also have to construct artificial recharge to ground water through rainwater harvesting in the premises. The drawing of artificial recharge to ground water through rain water harvesting is attached at **Annexure-“GWR”**. The minimum depth of 1.65 metre shall be maintained, however the dimensions i.e. length and width may vary as per the size of the campus.
- b) Water meter installation in the extraction structure is mandatory and confirmation of water meter installation shall be given to the Authorized Officer after construction. The monthly water meter reading shall be submitted to Authorized Officer.
- c) All details of the drilling like location of borewell / tubewell / energized handpump (Latitude & Longitude), formations encountered, the depth and diameter of the constructed ground water extraction structures, type of pipes used yield of borewell / tubewell / energized handpump (fracture zones encountered / zones tapped) and ground water quality, etc., have to be furnished to the nodal agency authorized and to CGWB Regional Office within 15 days of the completion of the construction.
- d) The permission for construction of ground water extraction structure would be valid for a period of six months from the date of issue of NOC. If the structure is not constructed within validity period, the NOC would be deemed to have been cancelled.
- e) The NOC issued would be non-transferable.
- f) The recharge unit should be implemented within the premises. Detailed project proposal shall be included along with the application for NOC.

- g) Construction of observation well(s) ((Piezometer)(s)) within the premises and installation of appropriate water level monitoring mechanism is mandatory for the stakeholder drawing water more than 10 m³/day of ground water in the State to monitor the ground water level.
- h) All industries extracting ground water shall be required to adopt latest water efficient technologies so as to reduce dependence on ground water resources.
- i) Details of water requirement computed as per National Building Code, 2016 (**Annexure VI**), taking into account recycling/ reuse of treated water for flushing etc. shall be provided.
- j) All industries extracting ground water in excess of 100 m³/d shall be required to undertake annual water audit through Confederation of Indian Industries (CII)/ Federation Indian Chamber of Commerce and Industry (FICCI)/ National Productivity Council (NPC) certified auditors and submit audit reports within three months of completion of the same to HPGWA. All such industries shall be required to reduce their ground water use by at least 20% over the next three years through appropriate means
- k) Any violation of the above conditions will attract legal action under section 15 of the Environment (Protection) Act, 1986 and under Section 13 of HP Ground Water Act, 2005.
- l) An undertaking by way of an Affidavit as per **Annexure-II** is to be submitted by the applicant.

3(iv) Mining and De-watering Projects:

Extraction of ground water by mining industries intersecting water table for de-watering of mine pit water, and de-watering ground water for basement construction of building, etc, may be permitted subject to the following conditions:

- a) The referral letter has to be received from referral Authority or the Industries Deptt./Project Sanctioning Authority/local municipal authority in urban area. The said letter shall contain verification on the quantum of water for the Industry/project with detailed break up of ground water consumption, recycle & reuse of the waste water, so that the wastage of the precious resource can be avoided.

- b) No application for NOC shall be entertained without referral letters from the concerned authority (State Govt. Departments and agencies like State Pollution Control Board, Industries Department, Industrial Development Authority).
- c) The de-watered quantum of water is to be put to gainful use. This may include water supply and may be provided to water supply agencies, agriculture, dust suppression by the industry, utilization by the mining industry, utilization for artificial recharge to ground water etc.
- d) Construction of observation well(s) ((Piezometer)(s)) within the premises and installation of appropriate water level monitoring mechanism is mandatory for the stakeholder drawing water more than 10 m³/day of ground water in the State to monitor the ground water level.

4. CHANGE IN LAND USE:

Industries/ Infrastructure/ Mining projects coming up in agricultural land or any other land after change in land use shall have to submit all documents endorsing the change of land use from competent authority. Withdrawal of ground water from existing extraction structure, if any, after change in land use in the area can be done only after approval from the HP Ground Water Authority. Cases would be processed as per changed land use.

5. OTHER CONDITIONS (APPLICABLE FOR ALL CASES) :

- a) Sale and supply of ground water treated or untreated by unauthorized agencies for commercial use is not permitted.
- b) Non-compliance of conditions mentioned in the NOC may be taken as sufficient reason for cancellation of NOC accorded/ non-renewal of NOC.
- c) In case of any delay in executing the project for bonafide reasons within the set time, for which NOC has been granted, the firm shall apply to HPGWA for extension. HP ground Water Authority may consider extension based on its merits. Any proposal to extend the validity of NOC would be considered for a similar period with recharge conditions applicable as per guidelines in force, provided no ground water extraction has been made.

- d) Mandatory clause on artificial recharge to groundwater may be relaxed in case of water logged/ shallow water level (< 5 m bgl during pre-monsoon) areas.
- e) Relaxation in the quantity of ground water withdrawal in over-exploited areas, and/ or quantity of recharge being affected by the firm can be permitted by HP Ground Water Authority if it feels absolutely necessary in public interest.
- f) Untreated water shall not be used to recharge the ground water, since it may contain heavy metals & other toxic elements. The treated waters shall be fully used the proponent or any other agency, who can utilize it without contamination the under lying aquifer/ water bodies.
- g) NOC issued is non-transferable.
- h) The general guidelines for the ground water level monitoring and construction of piezometers for this purpose are annexed as **Annexure- V**.
- i) The applicant shall install a water meter on the ground water extraction pipe so as to check the water drawl at any time and will maintain its logbook.
- j) The applicant shall have to pay royalty to the Member Secretary, HP Ground Water Authority through concerned Executive Engineer for the use of ground water as per the Himachal Pradesh Ground Water (Regulation and Control of Development and Management) Rules, 2007 for the drawl of ground water as per the log book of tube well. Provided that a user of ground water (Farmer) who irrigates less than one hectare of land, whether owned or leased or both and domestic / drinking purpose shall be exempted from the payment of royalty.
- k) In the event of drought or any other emergency that would be defined / declared by the State of Himachal Pradesh, the private water extraction system may be requisitioned by the Govt. for the public use at large for a period as mentioned in the requisition order of the competent authority.

6. ISSUANCE/ RENEWAL OF NOC :

- a) In case of change in category of the area, renewals would be granted with conditions as laid down for such new category areas, In case it is difficult to comply with the conditions, the applicant should satisfy the authority for granting exemption / alternative measure. The conditions of recharge may be

relaxed for areas at par with critical areas and for critical areas at par with semi-critical area.

- b) In case if it is found that some of the conditions stipulated during the issuance NOC have not been implemented in certain localities, it may be relaxed by HP Ground Water Authority based on the recommendations of the concerned Member Secretary HP Ground Water Authority for specific area as per site specific conditions.
- c) Categorization of certain industries as Water Intensive Industry as per **Annexure-IV** have been made with effect from 15.11.2012 by the Govt. of India. Since then ground water withdrawal by such industries is not permitted in over exploited area. Renewal of NOC for those water intensive industries to which NOC was issued for ground water withdrawal prior to 15.11.2012 and are now falling in over-exploited and notified areas will be done by the HP Ground Water Authority initially for two years and subsequently for every three years. For notified areas, the authorized officer shall forward his recommendations to the Member Secretary HP Ground Water Authority who in turn would send the same alongwith his recommendations to HP Ground Water Authority. The renewal would be limited to 50% of the recharge quantity or the earlier permitted quantity whichever in less.
- d) Processing fee prescribed, if any, from time to time shall be charged for issuance and renewal of NOC.

7. ISSUANCE OF NOC TO EXISTING USERS:

All existing users drawing ground water and who have not obtained NOC for ground water withdrawal from HP Ground Water Authority, due to having made the ground water extraction system prior to the notification under section 5 of Himachal Pradesh Ground Water (Regulation And Control of Development and Management) Act, 2005 for enforcement of the Ground Water Act in their area shall apply to HP Ground Water authority for ground water withdrawal with immediate effect on or before 31.05.2021. After 31.05.2021, the applications for certificate of registration shall be considered as a special case on showing sufficient cause by user of ground water for not applying within the stipulated date of 31.05.2021 and will be placed

before the Sub-committee / Main committee as per the case for approval. The application has to be submitted online. The grant of NOC would be considered as per prevailing guidelines.

It would be mandatory for the industrial users to submit water quality report of effluents, if any, duly vetted by competent authority.

8. PROCESSING FEE

The processing fee shall be as prescribed in the Himachal Pradesh Ground Water (Regulation and Control of Development and Management) Rules, 2007.

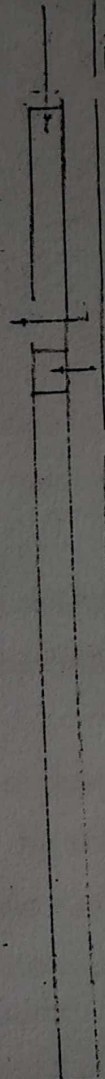
Explanations for the Technical Terms used:

1. **Notified Area:** Areas notified by the state of Himachal Pradesh for the purpose of Regulation of Ground Water Development through public notices.
2. **Non-Notified area:** Area other than Notified area for ground water regulation.
3. **EPA 1986:** Environmental Protection Act (1986)
4. **Safe area:** Area categorized as SAFE from the ground water resources point of view, based on the Dynamic Ground Water Resources Estimation (DGWRE) of Himachal Pradesh published jointly by CGWB & HP GWO as on March, 2020 till further revision.
5. **Critical area:** Area categorized as CRITICAL from the ground water resources point of view, based on the Dynamic Ground Water Resources Estimation (DGWRE) of Himachal Pradesh published jointly by CGWB & HP GWO as on march, 2013 till further revision.
6. **Semi-critical area:** Area categorized as SEMI-CRITICAL from the ground water resources point view, based on the Dynamic Ground Water Resources Estimation (DGWRE) of Himachal Pradesh published jointly by CGWB & HP GWO as on march, 2017 till further revision.
7. **Over-exploited area:** Area categorized as OVER-EXPLOITED from the ground water resources point view, based on the Dynamic Ground Water Resources Estimation (DGWRE) of Himachal Pradesh published jointly by CGWB & HP GWO as on march, 2013 & 2017 till further revision.
8. **Aquifer:** Geological formation capable of storing and transmitting ground water.
9. **Deeper Aquifer:** In area having multiple aquifer system, the aquifer/s occurring below the uppermost aquifer.
10. **Well:** Any structure sunk for the search or extraction of ground water, including open well, dug wells, bore well, dug-cum-bore wells, tubewells, energized hand pump filter points, collector wells, infiltration galleries, recharge wells, or any of their combination or variations.
11. **Tube well:** Bore well; Bug Well: Ground Water extraction structures.
12. **Government Agency:** State Government Body.

- 13. Mine:** Area where mining activity is taking place or area abandoned after mining.
- 14. Ground Water Recharge:** Augmenting the ground water resources of aquifer/s.
- 15. Rainwater Harvesting:** The technique or system of collection and storage of rainwater, at micro watershed scale, including roof-top harvesting, for future use or for recharge of ground water.
- 16. Roof Top Rain Water Harvesting:** Collection and storage of rain water from roof top of the building.
- 17. Artificial Recharge to ground water:** Augmenting of ground water reservoir through the artificial means.
- 18. Infrastructure Project:** Housing, Township, SEZ, Hotel, Educational Institutions, Roads and Bridges, Commercial establishments, offices, Airport, Transport terminus, Hospitals, others.
- 19. Mining Project:** Project which involved the mining activities either open cast or underground or both.
- 20. Ground water Draft:** Quantum of ground water withdrawal.
- 21. Water Table Instructions:** Instructions of the Water Table on excavation of the overlying material due to mining or other activities.
- 22. Recycle/Reuse:** Purifying waste water for using again/putting water to multiple uses.
- 23. Government Department:** Either Central or state.
- 24. Municipality:** Municipality, a municipal corporation or similar body of local urban governance by any other name.
- 25. Ground Water:** Water, which exists below the surface in the zone of saturation and can be extracted through wells or any other means or emerges as springs and based flows in streams and rivers.
- 26. Ground Water Extraction Structure:** Structure used to withdraw ground water like bore well/tube well/dug cum bore well/energized hand pumps/tunnel well.
- 27. Piezometer:** A bore well/tube well used only for measuring the water level/ piezometric head and to take water sample periodically but not used for ground water abstraction.

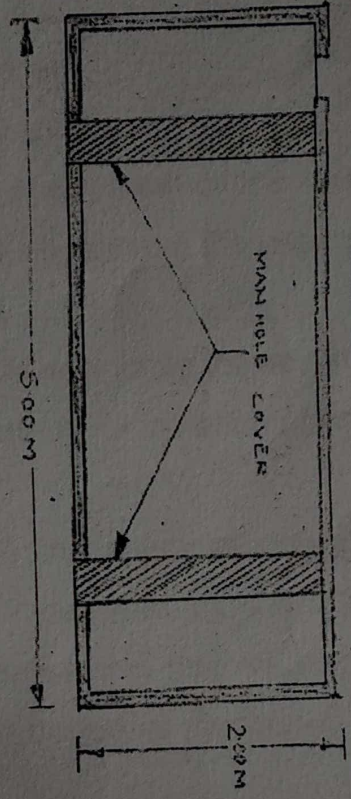
ARTIFICIAL GROUNDWATER RECHARGE BY SURFACE RUNOFF HARVESTING

ANNEXURE-GWR

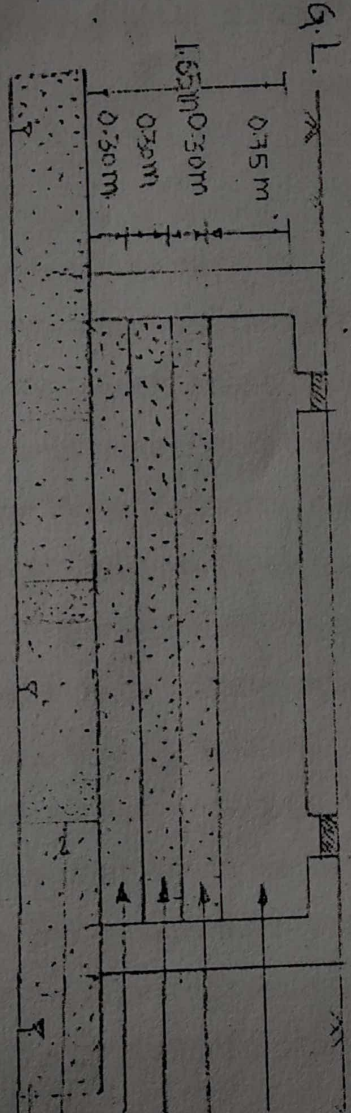


DIVERTED WATER

NOT TO SCALE



PLAN



CROSS-SECTIONAL VIEW

- FREE BOARD
- COARSE SAND (Size 1.5-2mm)
- GRAVEL (Size 5-10mm)
- BOULDER (Size 10-20mm)
- RECHARGE SHAFT
- GWT

AFFIDAVIT TO BE SUBMITTED BY INDIVIDUALS / FIRMS FOR CONSTRUCTION OF GROUND WATER EXTRACTION STRUCTURE FOR IRRIGATION / COMMERCIAL & INDUSTRIAL PURPOSES IN NOTIFIED AREA OF NON-JUDICIAL STAMP PAPER AS PER THE STAMP VALUE IN VOGUE.

I,..... S/O / D/O / W/O Sh....., Aged about.....years, resident of do hereby solemnly affirm and declare as under:

1. That I am the owner/lessee of premises of
2. That I/we undertake that in the event of any instructions /directions from the HP Ground Water Authority, we shall discontinue the usage of the said dug well/bore-well/tube-well if so required.
3. That I/we undertake that I/we shall be held liable for any such civil/criminal action that may be initiated against me/us for violation of any the terms and conditions of this undertaking.
4. That I/we further undertake that In the event of drought or any other emergency that would be defined / declared by the State of Himachal Pradesh, the private water extraction system may be requisitioned by the Govt. for the public use at large for a period as mentioned in the requisition order of the competent authority.

(DEPONENT)

VERIFICATION:

I, the above named deponent, do hereby further verify an oath that the contents of my above undertaking are true & correct to the best of my knowledge and belief. No part of it is false and nothing material has been concealed therefrom.

Verified at.....on thisday of....., 2021.

(DEPONENT)

List of Infrastructure Projects

Residential apartment
Residential township
Business Plaza
Malls & Multiplex
Hospitals
Office building
School
Collage
University
Resort
Hotel
Holiday Home/Guest House
Industrial Area (Non-Industrial use)
SEZ (Non Industrial use)
Banquet Hall
Metro Station
Railway Station
Bus Depot
Airport
Seaport
Highway infrastructure
Fire station
Warehouse
IT Complex
Logistics & Cargo

List of Water Intensive Industries

Package drinking water
Mineral water plant
Tannery
Distillery
Brewery
Soft drink
Paper & Pulp
Fertilizer
Textile Dyeing
Textile Printing
Textile Spinning
Sugar
Dairy Product
Water part & amusement centre

Guidelines for installation of Piezometers and their Monitoring

Piezometer is a borewell/tubewell used only for measuring the water level by lowering a tape / sounder or automatic / digital water level measuring equipment. It is also used to take water sample for water quality testing whenever needed.

General guidelines for installation of piezometers are as follows for compliance of NOC:

- The piezometer is to be installed/constructed at the minimum of 50m distance from the pumping well through which ground water is being withdrawn. The diameter of the piezometer should be about 4" to 6".
- The depth of the piezometer should be same as in case of the pumping well from which ground water is being extracted. If, more than one piezometers are installed the second piezometer should monitor the shallow ground water regime. It will facilitate shallow as well as deeper ground water aquifer monitoring.
- The measurement of water level in piezometer should be taken, only after the pumping from the surrounding tubewells has been stopped for about four to six hours.
- The measuring frequency should be monthly and accuracy of measurement should be up to cm. The reported measurement should be given in meter upto two decimal.
- For measurement of water level Sounder or Automatic Water Level Recorder (AWLR) with Telemetry System should be used for accuracy.
- All the details regarding coordinates, reduced level (with respect to mean level), depth, zone tapped and assembly lowered should be provided for bringing the piezometer into the National Hydrograph Monitoring System of Central Ground Water Board, and for its validation.
- The ground water quality has to be monitored twice in a year during pre-monsoon (May/June) and post-monsoon (October/November) periods. Quality may be got analyzed from NABL approved lab. Besides, one sample (1 lt capacity bottle) of ground water collected during pre-monsoon after proper

packing may be sent to the concerned Regional Director, Central Ground Water Board & Senior Hydrogeologist, Ground Water Organisation, IPH Department for chemical analysis.

- A permanent display board should be installed at Piezometer/Borewell/Tubewell site for providing the location, piezometer/borewell/tubewell number, depth and none tapped of piezometer/borewell/tubewell for standard referencing and identification.
- Any other site specific requirement regarding safety and access for measurement may be taken care off.

Estimation of Water Requirements for drinking and domestic use

(Source: National Building Code 2016, BIS)

a) Residential Buildings:

Accommodations	Population
1 Bedroom dwelling unit	4
2 Bedroom dwelling unit	5
3 Bedroom dwelling unit	6
4 Bedroom dwelling unit and above	7

Notes:

- 1) The above figures consider a domestic household including support personnel, wherever applicable.
- 2) For plotted development, the population may be arrived at after due consideration of the expected number and type of domestic household units.
- 3) Dwelling unit under EWS category shall have population requirement of 4 and studio apartment shall have population requirement of 2.

As a general rule the following rates per capita per day may be considered for domestic and non-domestic needs:

(a) For communities with populations up to 20,000:

1)	Water supply through stand post:	40 lphd (Min)
2)	Water supply through house service:	70 o 100 lphd

(b) For communities with: 100 to 135
lphd population 20,000 to 100,00
together with full flushing system

(c) For communities with population: 150 to 200
lphd above 100,000
together with full flushing system

Note—The value of water supply given as 150 to 200 litre per head per day may be reduced to 135 litre per head per day for houses for Medium Income Group (MIG) and Low Income Groups (LIG) and Economically Weaker Section of Society (EWS), depending upon prevailing conditions and availability of water.

Out of the 150 to 200 litre per head per day, 45 litre per head per day may be taken for flushing requirements and the remaining quantity for other domestic purposes.

A. Water Requirements for Buildings Other than Residences

S. No	Type of Building	Domestic litres per head/ day	Flushing Litres per head/ day	Total Consumption Litres per head/ day
1.	Factories including canteen where bath rooms are required to be provided	30	15	45
2.	Factories including canteen where no bath rooms are required to be provided	20	10	30
3.	Hospital (excluding laundry and kitchen):			
	a) Number of beds not exceeding 100	230	110	340
	b) Number of beds exceeding 100	300	150	450
	c) Out Patient Department (OPD)	10	5	15
4.	Nurses' homes and medical quarters	90	45	135
5.	Hostels	90	45	135
6.	Hotels (up to 3 star) excluding laundry, kitchen, staff and water bodies	120	60	180
7.	Hotels (4 star and above) excluding laundry, kitchen, staff and water bodies	260	60	320
8.	Offices (including canteen)	25	20	45
9.	Restaurants and food court including water requirement for kitchen:			
	a) Restaurants	55 per seat	15 per seat	70 per seat
	b) Food Court	25 per seat	10 per seat	35 per seat
10.	Clubhouse	25	20	45

11.	Stadiums	4	6	10
12.	Cinemas, concert halls and theatres and multiplex	5 per seat	10 per seat	15 per seat
13.	Schools/Educational institutions:			
	a) Without boarding facilities	25	20	45
	b) With boarding facilities			
		90	45	135
14.	Shopping and retail (mall)			
	a) Staff	25	20	45
	b) Visitors			
		5	10	15
15.	Traffic Terminal stations			
	a) Airports	40	30	70
	b) Railway stations (Junction) with bathing facility	40	30	70
	c) Railway stations (Junction) without bathing facility	30	15	45
	d) Railway stations (Intermediate) with bathing facility	25	20	45
	e) Railway stations (Intermediate) without bathing facility	15	10	25
	f) Interstate bus terminals	25	20	45
	g) Intrastate Bus Terminals/Metro Stations	10	5	15

Notes:

1. For calculating water demand for visitors, consumption of 15 litre per head per day may be taken.
2. The water demand includes requirement of patients, attendants, visitors and staff. Additional water demand for kitchen, laundry and clinical water shall be computed as per actual requirements.
3. The number of persons shall be determined by average number of passengers handled by stations, with due considerations given to the staff and vendors who are using these facilities.
4. Consideration should be given for seasonal average peak requirements.
5. The hospitals may be categorized as Category A (25 to 50 beds), Category B (51 to 100 beds), Category C (101 to 300 beds), Category D (301 to 500) and Category E (501 to 750 beds).