



# HARYANA WATER RESOURCES AUTHORITY

Rear Building, 3rd Floor, HSVP, Sector-6, Panchkula

Website: [www.hwra.org.in](http://www.hwra.org.in)

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## Notification

The 10th September, 2021

**No. HWRA/485/Notification/2021.**— In exercise of the powers conferred under Sub-section (3) of Section 12 of "The Haryana Water Resources (Conservation, Regulation And Management) Authority Act", 2020, (the Act) and in supersession of the Notification No.2/62/2020-IIW (hereinafter earlier notification) dated 23.12.2020, the procedure, forms, terms & conditions, fee and charges etc., for seeking permissions from "The Haryana Water Resources Authority" (Short HWRA) under Section 16 of the Act is hereby provided as under.

The permissions/NOCs granted by or application submitted to the Authority, under the earlier notification shall deemed to have been granted or submitted to the Authority under this notification.

- 1) The intended user i.e. industry, mining or infrastructure, as the case may be, may apply, online from the portal of the authority, for seeking permissions to use water.
- 2) An online application shall be made to the Authority for seeking permission/No objection Certificate to use water, for industrial use, along with such documents and information specified in the Schedule-I.
- 3) An online application shall be made to the Authority for seeking permission/No objection Certificate to use water, for mining use, in along with such documents and information specified in the Schedule-II.
- 4) An online application shall be made to the Authority for seeking permission/No objection Certificate to use water, for infrastructure use, along with such documents and information specified in the Schedule-III.
- 5) The person or entity, as the case may be, shall pay a processing fee, as provided under Schedule-IV, along with the application for seeking permissions/No objection Certificate.
- 6) All the permissions to be given, shall be subject to such terms and conditions as mentioned in the respective Schedule and as the Authority may deem fit.
- 7) All the permissions/No objection Certificate shall be given under the seal of the Authority.
- 8) All the permissions/No objection Certificate shall be valid for one year :

Provided that the applicant has to comply with the further terms and conditions as may be imposed by the Authority and no person can deny to comply with the terms and conditions merely because he has sought the permissions/No objection Certificate under the earlier notification.

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9) The applicant, on grant of permission/No objection Certificate, shall be liable to pay Ground water abstraction/ restoration charges as per Appendix 5.0.

Exemptions from seeking No Objection Certificate :

Following categories of users/persons shall be exempted from seeking No Objection Certificate for ground water extraction :

- (i) Individual domestic consumers in both rural and urban areas for drinking water and domestic uses where public water supplies do not exist.
- (ii) Rural drinking water supply schemes.
- (iii) Armed Forces Establishments and Central Armed Police Forces establishments in both rural and urban areas.
- (iv) Agricultural activities.
- (v) Micro and small Enterprises drawing ground water less than 10 cum/day. However, such MSME shall get its self registered itself with the Authority.

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## SCHEDULE-I

### Industrial Use :-

In Over-exploited assessment units, NOC shall not be granted for ground water abstraction to any new industry except those falling in the category of Micro, Small and Medium Enterprises (MSME). However, NOC for drinking/ domestic use for work force, use by these new industries shall be permitted. NOC shall not be granted to new packaged water industries or water intensive industries in Overexploited areas, even if they belong to MSME category.

In case of Expansion of existing industries, in over-exploited assessment units, involving increase in quantum of ground water abstraction, only for production of ethanol, in public interest, shall be permitted with additional terms & conditions mentioned at 1A

NOC for ground water extraction by industries shall be granted subject to the following specific conditions :

- (i) NOC shall be granted only in such cases where local government water supply agencies are not able to supply the desired quantity of water.
- (ii) All industries shall be required to adopt latest water efficient technologies so as to reduce dependence on ground water resources.
- (iii) All industries abstracting ground water between 100-500 m<sup>3</sup>/d shall be required to undertake self annual water audit as per the format provided by HWRA along with the affidavit and submit audit reports within three months of completion of the same to HWRA. Industries abstracting ground water in excess of 500 m<sup>3</sup>/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 HWRA. All industries shall be required to reduce their ground water use by at least 20% over the next three years through appropriate means.
- (iv) Construction of observation well(s) (piezometer)(s) along with automatic water level recorder, within 6 months from the date of issuance of NOC, within the premises and installation of appropriate water level monitoring mechanism, shall be mandatory for industries drawing/ proposing to draw more than 500 m<sup>3</sup>/day of ground water and. Monitoring of water level shall be done by the project proponent. The piezometer (observation well) shall be constructed at a minimum distance of 15 m. from the bore well/production well. Depth and aquifer zone tapped in the piezometer shall be the same as that of the pumping well/ wells. Detailed guidelines for design and construction of piezometers are given in **Annexure II**. Monthly water level data shall be submitted to the HWRA through the web portal.
- (v) The proponent shall be required to adopt roof top rain water harvesting/ recharge in the project premises. Industries which are likely to pollute ground water (chemical, pharmaceutical, dyes, pigments, paints, textiles, tannery, pesticides/ insecticides, fertilizers, slaughter house, explosives etc.) shall store the harvested rain water in surface storage tanks for use in the industry and accordingly reduce their abstraction of ground water requirement.
- (vi) Injection of treated/ untreated waste water into aquifer system is strictly prohibited.
- (vii) Industries which are likely to cause ground water pollution e.g. Tanning, Slaughter Houses, Dye, Chemical/ Petrochemical, Coal washeries, other hazardous units etc. (as per CPCB list) need to undertake necessary well head protection measures to ensure prevention of ground water pollution (**Annexure III**).
- (viii) All industries drawing ground water in safe, semi-critical and critical assessment units shall be required to pay ground water abstraction charges as applicable as per Tables 5.2 A and 5.3 A.
- (ix) All existing industries drawing ground water in over-exploited assessment units shall be liable to pay ground water restoration charges as applicable as per Tables 5.2 B and 5.3 B.

#### **1A) Additional terms & conditions:-**

The industry shall recharge groundwater through rain water harvesting by double the amount of water consumed by them. The units shall adopt nearby Government Schools/ Colleges/Institutions, Village Ponds etc. for rain water harvesting.

The industry shall take measures to reduce their water consumption by 30% in 3 years time.

The industry shall pay 1.5 times the tariff compared to the normal tariff being charged in such areas for the additional quantities of water being abstracted.

The industry shall ensure for "Zero Liquid Discharge".

### **Documents to be submitted with the application**

- (a) An affidavit on non judicial stamp paper of Rs. 10/- regarding non availability of water supply from local government agencies in cases where ground water requirement is up to 10 m<sup>3</sup>/day.
- (b) Certificate regarding non/ partial availability of fresh water/ treated waste water supply from the local government water supply agency, where such agency is responsible to supply water for industrial

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- purpose, in cases where requirement of ground water is more than 10 m<sup>3</sup>/day.
- (c) Ground water quality data of existing bore well/ tube well/ dug well from any NABL accredited laboratory or Govt. approved laboratory (in case of existing projects applying for NOC).
  - (d) Water quality data of bore well/ tube well/ dug well in respect of existing industries from NABL accredited laboratories/Government approved laboratories. ( to be removed).
  - (e) Proposal for rain water harvesting/ recharge within the premises as per Model Building Bye Laws issued by Ministry of Housing & Urban Affairs.
  - (f) **Impact Assessment report:** All projects extracting/proposing to extract ground water in excess of 500 m<sup>3</sup>/day in Over-exploited, Critical and Semi-critical areas shall have to mandatorily submit impact assessment report of existing/ proposed ground water withdrawal on the ground water regime and also socio-economic impacts report prepared by accredited consultants. Pro-forma for the report is given in **Annexure IV.**

## SCHEDULE-II

### MINING PROJECTS :-

All existing as well as new mining projects will be required to obtain NOC for ground water abstraction. Since mining projects are location specific, there will be no ban on grant of NOC for abstraction of ground water for such projects in over-exploited assessment units.

NOC for mining projects shall be granted subject to the following specific conditions :

- (i) It shall be mandatory for all the mining industries to ensure that water available from de-watering operations is properly treated and should be gainfully utilized for supply for irrigation, dust suppression, mining process, recharge in downstream and for maintaining e-flows in the river system.
- (ii) Construction of observation well(s) (piezometers) along the periphery in the premises, for monthly ground water level monitoring, shall be mandatory for mines drawing/ proposing to draw more than 100 m<sup>3</sup>/day of ground water. Depth and aquifer zone tapped in the piezometer shall be commensurate with that of pumping well/ wells.
- (iii) In addition, the proponent shall monitor ground water levels by establishing observation wells (piezometers) in the core and buffer zones as specified in the NOC.
- (iv) In case of coal and other base metal mining the project proponent shall use the advance dewatering technology (by construction of series of dewatering abstraction structures) to avoid contamination of surface water.
- (v) In addition to this, all mining units shall also monitor the water quality of mine seepage and mine discharge through NABL accredited/ Govt. approved laboratories and the same shall be submitted at the time of self compliance.
- (vi) All mining projects drawing ground water in safe, semi-critical and critical assessment units shall be required to pay ground water abstraction charges as applicable as per Tables 5.4 A.
- (vii) All mining projects drawing ground water in over-exploited assessment units shall be liable to pay ground water restoration charges as per Table 5.4 B.
- (viii) All the mining projects purchasing ground water from the irrigation tube wells through tankers shall be liable to pay ground water restoration charges as per the table 5.4 B.

### Documents to be submitted with the application

- (a) Mining plan approved by the concerned Govt. agency/ department.
- (b) Proposal for rain water harvesting/ recharge within the premises as per Model Building Bye Laws issued by Ministry of Housing & Urban Affairs.
- (c) Comprehensive report prepared by accredited consultant on ground water conditions in both core and buffer zones of the mine, depth wise and year wise mine seepage calculations, impact assessment of mining and dewatering on ground water regime and its socio-economic impact, details of recycling, reuse and recharge, reduction of pumping with use of technology for mining and water management to minimize and mitigate the adverse impact on ground water, based on local conditions. Format for report is given in **Annexure-V.**

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### SCHEDULE-III

#### INFRASTRUCTURE PROJECTS :-

Since infrastructure projects are location specific, grant of NOC to such projects located in over-exploited assessment units shall not be banned. New infrastructure projects/ residential buildings may require dewatering during construction activity and/ or use ground water for construction. In both cases, applicants shall seek NOC from HWRA before commencement of work. However, in over-exploited assessment units, use of ground water for construction activity shall be permitted only if no treated sewage water is available within 10 km. radius of the site. New as well as existing Infrastructure projects shall also be required to seek NOC for abstraction of ground water.

No NOC shall be granted for extraction of groundwater for Water Parks, Theme Parks and Amusement Parks in over-exploited assessment units.

Indicative list of Infrastructure projects is given in Annexure VI.

The NOC for ground water abstraction will be granted subject to the following specific conditions :

- (i) In case of infrastructure projects that require dewatering, proponent shall be required to carry out regular monitoring of dewatering discharge rate (using a digital water flow meter) and submit the data through the web portal to HWRA as applicable. Monitoring records and results should be retained by the proponent for two years, for inspection or reporting as required by HWRA.
- (ii) Installation of Sewage Treatment Plants (STP) shall be mandatory for new projects, where ground water requirement is more than 50 m<sup>3</sup>/day. The water from STP shall be utilized for toilet flushing, car washing, gardening etc.
- (iii) For infrastructure dewatering/ construction activity, NOC shall be valid for specific period as per the detailed proposal submitted by the project proponent.
- (iv) All infrastructure projects drawing ground water in safe, semi-critical and critical assessment units shall be required to pay ground water abstraction charges as applicable as per Table 5.3 A.
- (v) All infrastructure projects (new/ existing) drawing ground water in over-exploited assessment units shall be liable to pay ground water restoration charges as per Table 5.3 B.

#### Documents to be submitted with the application

- (a) In cases where dewatering is involved, submission of impact assessment report prepared by an accredited consultant on the ground water situation in the area giving detailed plan of pumping, proposed usage of pumped water and comprehensive impact assessment of the same on the ground water regime shall be mandatory. The report should highlight environmental risks and proposed management strategies to overcome any significant environmental issues such as ground water level decline, land subsidence etc.
- (b) An affidavit on non judicial stamp paper of Rs. 10/- regarding non availability of water from any other source in case water is required for construction in safe and semi critical areas.
- (c) Certificate from a government agency regarding non availability of treated sewage water for construction within 10 km. radius of the site in critical and over-exploited areas.
- (d) Certificate of non-availability of water from local government water supply agency in respect of all categories of assessments units for commercial use.
- (e) Proposal for rain water harvesting/ recharge within the premises as per Model Building Bye Laws issued by Ministry of Housing & Urban Affairs.
- (f) Details of water requirement computed as per National Building Code, 2016 (**Annexure I**), taking into account recycling/ reuse of treated water for flushing, irrigating green areas etc. (in case of completed infrastructure projects for commercial use).
- (g) Completion certificate from the concerned agency for infrastructure projects requiring water for commercial use.

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#### **SCHEDULE IV**

Fee (in Rupees) to be deposited along with the online application for seeking permissions/NOC

for industrial use: A. 10-100 cum/day : 25,000/-

B. >100 – 500 cum/day : 50,000/-

C. >500-1000 cum/day : 1,00,000/-

D. >1000 cum/day : 1,50,000/-

In case of renewal, the application fee shall be deposited at the half of the above rates.

for infrastructure use: A. Government /PSU/Semi-Government : 50,000/-

B. Others : 1,50,000/-

In case of renewal, the application fee shall be deposited at the half of the above rates

for mining use : A. Direct user : 1,50,000/-

B. Indirect Users : 75,000/-

In case of renewal, the application fee shall be deposited at the half of the above rates

Fee shall be deposited by the applicant online through link provided in the web portal of the Authority.

## Appendix 5.0

### Ground water abstraction/ restoration charges

All residential apartments/ group housing societies/ Government water supply agencies in urban areas shall be required to pay ground water abstraction charges.

All industries/mining/ infrastructure projects drawing ground water in safe, semi-critical and critical assessment units will have to pay ground water abstraction charges based on quantum of ground water extraction and category of assessment unit as per details given in this guideline.

All existing mining/ infrastructure projects and existing industries including MSME drawing ground water in over-exploited assessment units will have to pay ground water restoration charges based on quantum of ground water extraction. Further, new MSME, new infrastructure and new Mining projects in over exploited areas shall also be required to pay ground water restoration charges.

Existing industries, infrastructure units and mining projects which have installed/constructed artificial recharge structures in compliance of the conditions prescribed in the groundwater guidelines prevailing at the time of grant of NOC or its renewal shall be eligible for a rebate of 50% (fifty percent) in the ground water abstraction charges/ground water restoration charges, subject to their satisfactory performance and verification.

The revenue generated from the proposed water abstraction/ restoration charges shall be kept in a separate fund for implementation of site specific suitable demand/ supply side interventions.

#### 5.1 Rates of Ground water abstraction /restoration charges

##### I. Drinking and domestic use for residential apartments/ group housing societies/ Government water supply agencies in Urban areas

All residential apartments/ Group Housing Societies requiring water only for drinking/domestic use requiring NOC would pay ground water abstraction charges as per rates given below in **Table 5.1**.

**Table 5.1 Ground Water Abstraction charges for Drinking & Domestic use.**

Quantum of Groundwater withdrawal (m <sup>3</sup> /month)	Rate of ground water abstraction charges (Rs. per m <sup>3</sup> )
0-25	No charge
26-50	1.00
>50	2.00

Government water supply agencies and Government infrastructure projects shall pay Ground water abstraction Charges @ Rs. 0.50 per m<sup>3</sup>.

##### II. Packaged Drinking Water units

Rates of ground water abstraction charges for packaged drinking water units in safe, semi-critical and critical assessment units are given in Table 5.2 A and those for ground water restoration charges in over-exploited assessment units are given in Table 5.2 B.

**Table 5.2 A: Rates of ground water abstraction charges for packaged drinking water units (Rs. per m<sup>3</sup>)**

S. No.	Category of area ↓  Ground water use →	Quantum of ground water withdrawal				
		Up to 50m <sup>3</sup> / day	51 to <200 m <sup>3</sup> /day	200 to <1000 m <sup>3</sup> /day	1000 to <5000 m <sup>3</sup> /day	5000 m <sup>3</sup> /day and above
1.	Safe	1.00	3.00	5.00	8.00	10.00
2.	Semi-critical	2.00	5.00	10.00	15.00	20.00
3.	Critical	4.00	10.00	20.00	40.00	60.00

**Table 5.2 B: Rates of ground water restoration charges for packaged drinking water units (Rs. per m<sup>3</sup>)**

S. No.	Category of area ↓  Ground water use →	Quantum of ground water withdrawal				
		Up to 50 m <sup>3</sup> /day	51 to <200 m <sup>3</sup> /day	200 to <1000 m <sup>3</sup> /day	1000 to <5000 m <sup>3</sup> /day	5000 m <sup>3</sup> /day and above
1.	Over-exploited (existing industries only)	8.00	20.00	40.00	80.00	120.00

**III. Other Industries & infrastructure projects**

Rates of ground water abstraction charges for other industries and infrastructure projects in safe, semi-critical and critical assessment units are given in Table 5.3 A and those for ground water restoration charges in over-exploited assessment units are given in Table 5.3 B.

**Table 5.3 A: Rates of Ground Water abstraction charges for other industries & infrastructure projects (Rs. per m<sup>3</sup>)**

S. No.	Category of area ↓  Ground water use →	Quantum of ground water withdrawal			
		< 200 m <sup>3</sup> /day	200 to <1000 m <sup>3</sup> /day	1000 to <5000 m <sup>3</sup> /day	5000 m <sup>3</sup> /day and above
1.	Safe	1.00	2.00	3.00	5.00
2.	Semi-critical	2.00	3.00	5.00	8.00
3.	Critical	4.00	6.00	8.00	10.00

**Table 5.3 B: Rates of ground water restoration charges for other industries & infrastructure projects (Rs. per m<sup>3</sup>)**

S. No.	Category of area ↓  Ground water use →	Quantum of ground water withdrawal			
		< 200 m <sup>3</sup> /day	200 to <1000 m <sup>3</sup> /day	1000 to <5000 m <sup>3</sup> /day	5000 m <sup>3</sup> /day and above
1.	Over-exploited (existing industries /new Industries as per the present Guidelines)	6.00	10.00	16.00	20.00

**IV. Mining projects**

Rates of ground water abstraction charges for mining, which are drawing ground water in safe, semi-critical and critical assessment units are given in Table 5.4 A and those for ground water restoration charges in case of projects drawing ground water in over-exploited assessment units are given in Table 5.4 B.



**Table 5.4 A: Rates of ground water abstraction charges for mining ( Rs. per m<sup>3</sup>)**

S. No.	Category of area ↓ Ground water use →	Quantum of ground water withdrawal			
		< 200 m <sup>3</sup> /day	200 to <1000 m <sup>3</sup> /day	1000 to <5000 m <sup>3</sup> /day	5000 m <sup>3</sup> /day and above
1.	Safe	1.00	2.00	2.50	3.00
2.	Semi-critical	2.00	2.50	3.00	4.00
3.	Critical	3.00	4.00	5.00	6.00

**Table 5.4 B: Rates of ground water restoration charges for mining (Rs. per m<sup>3</sup>)**

S. No.	Category of area ↓ Ground water use →	Quantum of ground water withdrawal			
		< 200 m <sup>3</sup> /day	200 to <1000 m <sup>3</sup> /day	1000 to <5000 m <sup>3</sup> /day	5000 m <sup>3</sup> /day and above
1.	Over-exploited	4.00	5.00	6.00	7.00

**Water Abstraction and Restoration charges set-off Scheme.**

Ground water charges shall be volumetric and shall be based on actual consumption. The initial quantity (upto 10 m<sup>3</sup>/day) shall be charged at the lowest applicable rate of the charges above and if the usage is exceeded the permitted quantities, the entire usage of water during the billing period shall be charged at higher rates mentioned in the said table.

The consumer will get due credit for conservation of water. The quantity of water conserved and/or recharged to ground water will be set-off with the usage of water consumed. The set-off water used and conserved and/or recharged shall be done at the end of the year.

Chairperson  
Haryana Water Resources Authority

**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: connection	70 to 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.

**B. Water Requirements for Buildings Other than Residences**

Sl. 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 b) Number of beds exceeding 100 c) Out Patient Department (OPD)	230	110	340
		300	150	450
		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 b) Food Court	55 per seat	15 per seat	70 per seat
		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 b) With boarding facilities	25	20	45
		90	45	135
14.	Shopping and retail (mall) a) Staff b) Visitors	25	20	45
		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	

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**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).

**Guidelines for construction of Piezometers and monitoring of Ground Water Levels and Quality**

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 :

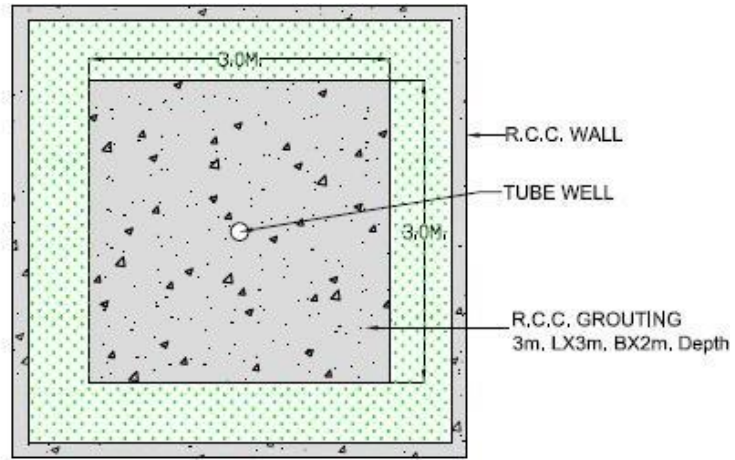
- The piezometer is to be installed/constructed at the minimum distance of 50 m. from the pumping well through which ground water is being withdrawn. The diameter of the piezometer should be about “4 to 6”.
- The depth of the piezometer should be the same as that of the pumping well from which ground water is being abstracted. If, more than one pumping wells are constructed tapping aquifers at different depths, more than one piezometers shall be required to be constructed tapping different aquifers as in the pumping wells.
- 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 ground water quality has to be monitored once in a year during pre-monsoon (April/ May) period by industries and mines drawing ground water. Samples of ground water should be analyzed from NABL accredited laboratory.
- A permanent display board should be installed at Piezometer/ Tubewell site for providing the location, piezometer/ tubewell number, depth and zone tapped of piezometer/tubewell for standard referencing and identification.
- Any other site specific requirement regarding safety and access for measurement may be taken care off.

**Measures to be adopted to ensure prevention from pollution in the plant premises of polluting industries/ projects**

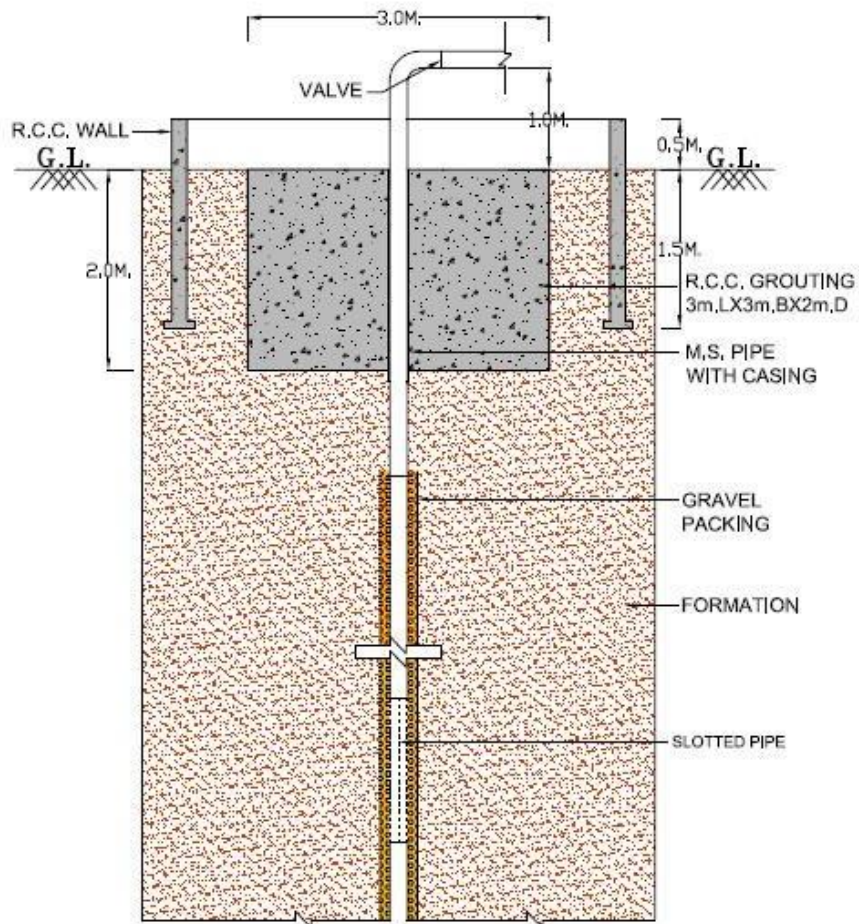
It has been observed that ground water in and around polluting industries like Tannery, Slaughter Houses, Dye, Chemical, Coal washery, other hazardous units, etc., is polluted. In order to prevent further deterioration of ground water quality, it is essential to take all necessary measures for well head protection. All industries/ projects falling under this category are hereby directed to follow the under mentioned procedure both for existing and new category.

1. No tube well/ bore well / dug well should be constructed in the vicinity of the processing unit. Tube well/ bore well should be constructed at the place which is hygienically maintained.
2. Only Mild Steel pipe should be used for assembly/ casing and PVC (Poly Vinyl Chloride) or similar pipes should not be used. The tube well/ bore well having PVC or similar pipes should be abandoned and filled back.
3. Around the tube well/ bore well, RCC (Reinforced Concrete Cement) grouting of 3 meters (length) x 3 meters (width) x 2 meters (depth) must be provided. The pipe of the tube well/ bore well must be raised 1 meter above ground level (1 magl). The tube well/ bore well must be surrounded by RCC wall of 0.5 meter height and 1.5 meter depth to prevent any surface contamination to enter the constructed tube well/ bore well. **Plan/Sectional diagram is enclosed for reference.**
3. The tube well/ bore well must be fitted with NRV (Non Return Valve) in order to ensure that the constructed tube well/ bore well is exclusively used for abstraction of ground water only.
4. At no point of time there should be any injection of any water or fluid into the constructed tube well/ bore well/ Piezometer.
5. The industries/ projects under this category should not implement any recharge measures within the plant premises.
6. Any tube well/ bore well located/ constructed in the vicinity of STP (Sewage Treatment Plant) or ETP (Effluent Treatment Plant) should be abandoned and filled back.
7. The piezometer to be constructed for monitoring purpose should follow the same procedure as that for tube well/ bore well for such industries/ projects.

Plan/ Sectional diagram showing well head protection

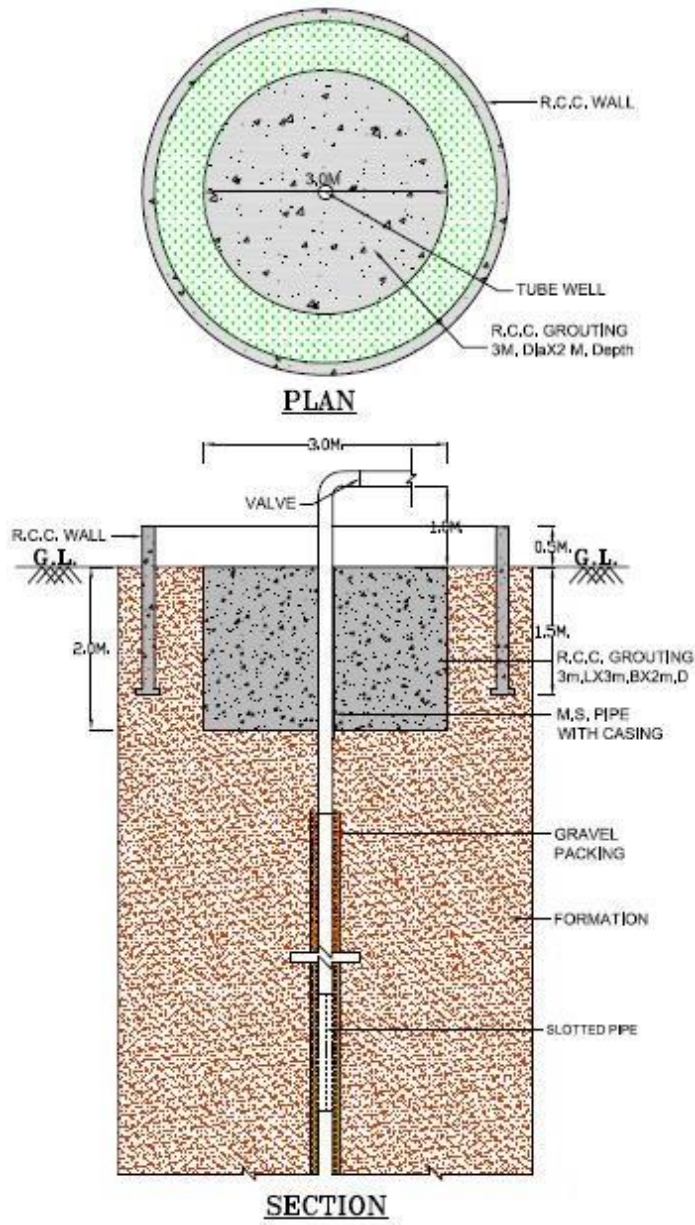


PLAN



SECTION

Plan/ Sectional diagram showing well head protection





**Outline of hydro-geological Report for obtaining NOC for industries**

1. Brief about the proposed project giving location details, coordinates, google/ toposheet maps, etc. demarcating the project area.
2. Ground water situation in and around the project area including water level and quality data and maps along with quality issues, if any. In case of mines, ground water conditions in both core and buffer zone should be described.
3. Details of the tubewells/ borewells proposed to be constructed. This includes the drilling depth, diameter, tentative lithological log, details of pump to be lowered, H.P. of pump, tentative discharge of tubewells/ borewells, etc. Locations to be marked on the site plan/ map. Location of proposed piezometers.
4. Approved Mine plan in case of mines and detailed dewatering plan in case of mine/ infrastructure dewatering projects.
5. Proposed usage of pumped water in case of mining/ infrastructure dewatering projects.
6. Comprehensive assessment of the impact on the ground water regime in and around the project area highlighting the risks and proposed management strategies proposed to overcome any significant environmental issues.
7. Proposed measures for disposal of waste water by industries drawing saline water.
8. Measures to be adopted for water conservation which include recycling, reuse, treatment, etc. This includes the water balance chart being adopted by the firm along with details of water conservation methods to be adopted.
  - Brief write up along with capacity and flow chart of Sewage Treatment Plants / Effluent Treatment Plants / Combined Effluent Treatment Plants existing/ proposed within the project.
  - Details of water conservation measures to be adopted to reduce/ save the ground water.
  - Total water balance chart showing the usage of water for various processes.
9. Any other details pertaining to the project.

**Format of the Report on ground water conditions (for mining projects)**

Introduction

Project description

Background

Objectives and scope

Regional setting

Location

Land-use

Climate

Topography and drainage

Geology –Regional and Local

General Hydrogeology (aquifer types, aquifer depth, zone tapped etc.)

Groundwater condition (In core and buffer zones)

Spatial and temporal variations in water levels Groundwater quality (Shallow and deep aquifer)

Impact of groundwater extraction on local groundwater

Hydrograph of water level/piezometer in monitoring wells

Trend analysis of historical water levels Flow net analysis (groundwater flow direction)

Year wise/ bench wise mine dewatering computation as per approved mine plan

Conclusions

**Indicative list of Infrastructure projects**

Residential townships including commercial buildings
Office building
School
College
University
Special Economic Zone
Metro Station
Railway Station
Bus Depot
Airport
Seaport
Highway infrastructure
Fire station
Warehouse
Business Plaza
Malls & Multiplex
Hospitals
Nursing Homes
Resort
Hotel/ Restaurant / Food Plaza
Holiday home / Guest house/ Hostels
Banquet Hall / Marriage Gardens
IT Complex
Logistics & Cargo
Clubs
Trade Centre/ Agri Markets

**STAGE OF GROUND WATER DEVELOPMENT AND CATEGORIZATION OF THE BLOCKS AS ON 31-3-2017**

Sr. No.	District	Over-exploited	Critical	Semi-critical	Safe
1.	<b>Ambala</b>	Barara, Naraingarh, Saha	Shahzadpur	Ambala-I	Ambala-II
2.	<b>Bhiwani</b>	Behal, Kairu, Loharu, Tosham	-	Bhiwani	Bhiwani Khera, Siwani
3.	<b>Charkhi Dadri</b>	Badhra, Jhoju	-	Ch. Dadri	Baund
4.	<b>Faridabad</b>	Ballabhgarh, Faridabad	-	-	-
5.	<b>Fatehabad</b>	Fatehabad, Ratia, Tohana, Jakhal, Bhattu Kalan	Bhuna	-	-
6.	<b>Gurugram</b>	Farukhnagar, Pataudi, Sohna, Gurugram			
7.	<b>Hissar</b>	Adampur, Agroha, Narnaund	Barwala	Bass, Hisar-I, Hisar-II, Uklana	Hansi
8.	<b>Jhajjar</b>				Jhajjar, Matanhail, Salhawas, Beri, Bhadurgarh
9.	<b>Jind</b>	Alewa, Uchana, Ujhana, Safidon, Jind	-	Pillukhera	Julana, Narwana
10.	<b>Kaithal</b>	Siwan, Gulha, Kaithal, Kalyat, Pundri, Rajaund, Dhand	-	-	-
11.	<b>Karnal</b>	Assandh, Gharaunda, Karnal, Nilokheri, Nissing at Chirao	-	Indri	-
12.	<b>Kurukshetra</b>	Ismailabad, Babain, Ladwa, Pehowa, Shahbad, Thanesar, Pipli	-	-	-
13.	<b>M.garh</b>	Kanina, Mahendragarh	-	Nangal Chaudhary, Satnali, Simha, Ateli Nangal	Narnaul, Nizampur
14.	<b>Mewat</b>	Punhana, Tauru	-	Nuh, Ferozepur Jhirka	Nagina
15.	<b>Palwal</b>	Hassanpur, Hathin, Hodel, Palwal	-	-	-
16.	<b>Panchkula</b>	-	-	Raipur Rani	Pinjore, Barwala
17.	<b>Panipat</b>	Bapoli, Israna, Madlauda, Panipat, Samalkha	-	-	-
18.	<b>Rewari</b>	Khol, Rewari, Nahar	-	Dahina, Jatusana	Bawal
19.	<b>Rohtak</b>				Lakhan Majra, Meham, Kalanaur, Sampla, Rohtak
20.	<b>Sirsa</b>	Ellenabad, Rania, Sirsa, Nathusari Chopta, Baraguda, Odhan, Dabwali	-	-	-
21.	<b>Sonepat</b>	Ganaur, Sonepat, Rai	-	Mundlana	Gohana, Kathura, Kharkhoda
22.	<b>Yamunanagar</b>	Chachrauli, Jagadhri, Mustafabad, Khizrabad, Radour	-	Sadaura, Bilaspur	-
	<b>State Total</b>	<b>78</b>	<b>3</b>	<b>21</b>	<b>26</b>

\*Morni block of district Panchkula not assessed due to complete hilly area.