Chapter 3 Ground Water Regulation

3.1 Introduction

Although Water is a State subject, the regulation of ground water abstraction is being done at both Central and State levels.

At the central level, Central Ground Water Authority (CGWA) constituted in January 1997 under sub-section (3) of Section 3 of the Environment Protection Act, 1986 as per direction of Hon'ble Supreme Court of India, has been vested with responsibility for regulation and control of groundwater development and management. CGWA has been granted the powers to, amongst others, regulate and control, manage and develop ground water in the entire country and to issue necessary directions for this purpose.

CGWA has issued Guidelines from time to time for evaluation of proposals/requests for ground water abstraction with the objective of ensuring sustainability of ground water both in terms of quantity and quality, looking into the variations in availability of water in different climatic regions and diverse hydro-geological conditions in various States of the country. CGWA regulates ground water development and management by issuing 'No Objection Certificates' (NOC) for ground water extraction to industries or infrastructure projects or Mining Projects etc. Necessary conditions for implementation by the proponent are laid down in the NOC issued by CGWA.

Under the Guidelines (November 2015), CGWA notified 162 critical/ over-exploited areas for the purpose of regulation of ground water development. In the notified areas, permission (NOC) to abstract ground water was not accorded for any purpose other than drinking water. In the notified areas, the District Administrative Heads in case of Administrative Block or Taluka, or the Head of the Municipality (in case of Municipal Area) were designated as the authorities for issuing NOCs for extraction of ground water.

In non-notified areas, ground water withdrawal could be considered for Industries/ Infrastructure/ Mining projects also.

With effect from September 2020, CGWA has issued revised guidelines, in which the system of notifying areas by CGWA has been dispensed with. NOCs are now to be issued by CGWA on the basis of the assessment units viz. safe, semi-critical, critical and over-exploited.

At the State level, as of March 2019, 13[29] States/UTs have constituted State Ground Water Authority (SGWA) or issued Government Orders. In these States, NOCs for ground water withdrawal are granted by the respective SGWAs or designated authority. The mechanism of regulation in these States/UTs is outlined in ***Annexure 3.1***.

The findings in respect of regulation of ground water usage are discussed in this chapter.

3.2 Uniformity in guidelines between CGWA and self-regulated States/ UTs

The directions of Hon'ble NGT (August 2018) mention that the guidelines of CGWA must have pan-India applicability. CGWA informed (June 2019) Audit that States/ UTs where regulation was being done through State Government orders, more or less follow CGWA guidelines. In 13 States/UTs, SGWAs have been established under appropriate legislation and have their own mechanism for evaluation of proposal/request for NOC for ground water abstraction. However, Audit observed that in seven of these States, there were variations between the CGWA and the State level guidelines. These included differences between the areas notified by CGWA and SGWA, difference in categorisation of areas (as Safe, Critical, Over-exploited), etc. The variations are listed in the Table 3.1.

Table 3.1: Variations between State and CGWA guidelines

Sl. No.	Name of the State	Variation
1.	Chandigarh	Three government agencies, instead of one (in CGWA guidelines) issue permission letter/NOC in respect of withdrawal of ground water and these agencies had different conditions in the permission letters.
2.	Delhi	In Notified Areas, NOCs were also issued for other than drinking purpose, which is contrary to CGWA guidelines.
		Advisory Committee/ Competent Authority did not incorporate some of the provisions of CGWA guidelines in the terms and conditions of NOC/ permission issued by them.
3.	Goa	Before issue of NOC, detailed report of ground water status in the aquifers, recycling of water etc. was not obtained from the project proponent, as prescribed in CGWA guidelines.
4.	Himachal Pradesh	Provision for artificial recharge to ground water through rain water harvesting structure in the premises was not incorporated, as done in the CGWA guidelines.
5.	Karnataka	Permit/NOCs are issued only in the notified area and not for non-notified areas. As such, Karnataka Ground Water Authority (KGWA) is not issuing NOCs in non-notified area.
6.	Tamil Nadu	Individual households are exempted from obtaining NOC, whereas this is not so in CGWA guidelines.
		No specific mention of mandatory recycle/reuse (for various purposes except recharge to ground water) for all the NOCs and quantum of ground

[29] Andhra Pradesh, Goa, Himachal Pradesh, Jammu & Kashmir, Karnataka, Kerala, NCT Delhi (through Government Orders), Tamil Nadu (through Government Orders), Telangana, West Bengal, Chandigarh (through bye-laws), Puducherry and Lakshadweep.

Sl. No.	Name of the State	Variation
		water recharge to be established by the firms have been made in the guidelines, which is included in CGWA guidelines.
7.	West Bengal	No separate provisions have been made for notified and non-notified areas whereas this distinction is made in CGWA guidelines.
		No provision has been made for artificial recharge structure for ground water recharge, as required in CGWA guidelines.
		No provision has been made for renewal of permits, which is included in CGWA guidelines.

The divergent guidelines of the States also resulted in certain specific issues in regulation of ground water in the States, that are cited subsequently in this chapter and discussed more specifically in para 3.8.

Based on the directions of the Hon'ble NGT, CGWA revised (September 2020) the guidelines, according it pan-India applicability and mandating that wherever States/ UTs have their own ground water abstraction guidelines which are inconsistent with the CGWA guidelines, the provisions of CGWA guidelines will prevail. In case the guidelines followed by States/ UTs contain more stringent provisions than CGWA guidelines, such provisions may also be given effect to.

Audit observed some good practices being followed in a few of these States though not included in the CGWA guidelines, as given in Box 3.1.

Box 3.1: Good practices included in the guidelines of States/UTs having their own regulation

Himachal Pradesh: The condition of payment of royalty on extraction of ground water through energised means had been included in the NOC issued. Further, drilling of tube well/bore had to be got done from a firm registered with SGWA.

Karnataka: The guidelines state that spacing of 500 metres should be maintained from the existing public source of drinking water as per Section 3 of Karnataka Ground Water Act, 1999.

Tamil Nadu: The National and State Water Policies envisage assessment of water in smaller hydrological units. For the purpose of effective regulation and implementation of assessment, the State Ground & Surface Water Resources Data Centre (SG&SWRDC) has decided (2011 onwards) to take the firka as the assessment Unit, since a firka is smaller than a block in extent. This was expected to help to identify the ground water potential pockets within the over exploited and critical blocks and thereby prohibit a part of an over exploited block from further ground water extraction, whereas allow other parts of the block for ground water extraction.

3.3 Project proponents extracting Ground Water without obtaining NOC

As per the CGWA guidelines of the year 2012, only new units and industries (Industry, Infrastructure and mining projects) seeking expansion fell under the purview of the guidelines. In the revised guidelines of November 2015, all existing industries/projects which were drawing ground water and had not obtained NOC from CGWA, either due to its coming into existence prior to formation of CGWA or due to exemption from

obtaining NOC as per earlier guidelines, were also required to apply to CGWA with immediate effect for NOC for ground water withdrawal.

Audit observed that CGWA did not have any estimate of the number of industries/infrastructure/mining projects that were extracting ground water without proper NOC. CGWA extended the deadline for submission of application for existing industries five times[30] (latest up to 30 September 2019). The revised Guidelines (November 2015) also stipulated that no application for NOC should be entertained without referral letters from the statutory authority (Central and State Government Departments and Agencies[31]). CGWA received copies of environmental clearances/Terms of Reference from MoEF&CC and State Environment Impact Assessment Authorities where ground water abstraction was envisaged in the project. However, CGWA had no mechanism to ensure that such project proponent applies to CGWA for NOC before commencing its operations.

Without information on the number of existing project proponents that were extracting ground water without NOC; and in the absence of a mechanism to ensure that new project proponents receiving conditional clearances from other statutory authorities applied for NOC, CGWA was unable to effectively control unauthorised extraction of ground water. During the course of Audit, records from State Pollution Control Boards (SPCBs)/ Pollution Control Committees (PCCs), Bureau of Indian Standards (BIS), Food Safety and Standards Authority of India (FSSAI), etc. were examined and it was observed that most of the projects granted Consent to Operate, licenses, were withdrawing ground water without any NOC from CGWA/ SGWAs. The findings in this regard are discussed in the succeeding paragraphs.

The Department stated (October 2019) that extensions of deadlines for submitting application for renewal of NOCs had been granted to existing industries in view of the large number of such units in the country which are required to obtain NOC and the limited human resources available with CGWA.

The Department further stated (October 2019) that the mandatory requirement of referral letter while applying for NOC has become redundant after the directions of the Hon'ble NGT requiring all users of ground water to obtain NOC from CGWA.

Given its mandate to regulate the use of ground water in the country, CGWA was required to ensure that all project proponents obtain NOC before extracting ground water, in accordance with the extant guidelines.

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[30] Up to 31.12.2017 vide public notice dated 04.10.2017, up to 30.06.2018 vide public notice dated 01.01.2018, up to 30.09.2018 vide public notice dated 29.06.2018, up to 31.03.2019 vide public notice dated 14.11.2018, up to 30.09.2019 vide public notice dated 09.04.2019.

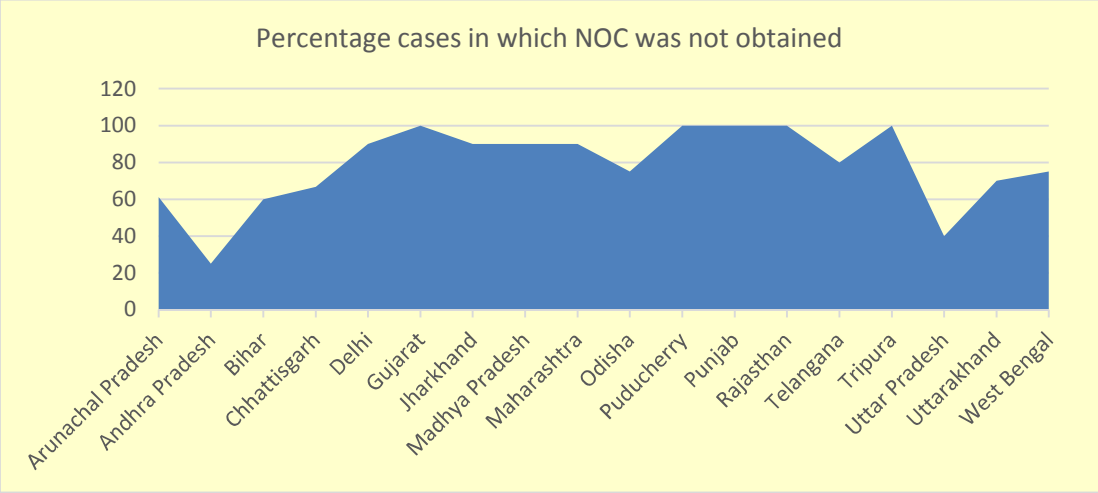
[31] MoEF&CC or State Pollution Control Board (SPCB) or State Level Expert Appraisal Committee (SEAC) or State Level Environment Impact Assessment Authority (SLEIAA) or Bureau of Indian Standards (BIS) or Food Safety and Standards Authority of India (FSSAI) or Department of Industries or any other authority mandated by Central or State Government.

3.3.1 Projects granted Consent to Operate by SPCBs/ PCCs

As per the provisions of Water (Prevention and Control of Pollution) Act, 1974, no industry, operation or process can be established without obtaining prior consent from the concerned State Board. The SPCBs/PCCs are responsible for prescribing consent application form and consent fees. Most of the SPCBs/ PCCs issue Consent to Establish (CTE) followed by Consent to Operate (CTO).

Audit examined a sample of 328 cases[32] in 18 States where the CTO granted to a project proponent included a condition which required NOC for ground water extraction, and found that only 75 projects in 13 States/ UTs had obtained the requisite NOCs. Thus, 253 projects *(*77 *per cent)* were operating without NOCs (State wise position in Chart 3.1).

Chart 3.1: Projects operating without NOC



In the CTOs granted by nine[33] States (other than the 18 States mentioned above), the condition to obtain NOC for ground water extraction was not included, while in one UT (Lakshadweep) no CTOs were granted during the audit period. No information was available in respect of two States (Assam and Nagaland). In one State (Tamil Nadu), CTOs are granted only after NOCs have been obtained, which has been highlighted as a good practice in Box 3.3.

The huge number of defaulters indicates that a lack of mandatory linkage between the SPCBs/PCCs and CGWA has led to unchecked extraction of ground water.

The Department stated (October 2019) that the CTOs are granted by SPCB for industries using both surface water and ground water and proponents abstracting ground water only shall approach CGWA/ SGWAs for obtaining NOC. Further, the concerned DMs/DCs have been authorised by the CGWA to initiate suitable action

[32] The list of CTOs was obtained from SPCB/PCC and the list was cross-checked with NOC issued by CGWA/ State Ground Water authorities.

[33] Chandigarh, Daman & Diu, Dadra & Nagar Haveli, Goa, Himachal Pradesh, Karnataka, Manipur, Meghalaya and Kerala

against illegal boring wherever noticed. DoWR,RD&GR added (January 2020) that in respect of CTOs granted by SPCB, it was learnt that SPCBs were not renewing CTOs of those project proponents who had failed to obtain NOC for ground water abstraction.

It is noteworthy that the cases highlighted by Audit were those in which CTOs granted included a condition for obtaining of NOC from CGWA/SGWA, since the project involved extraction of ground water. Further, the reply was silent about the action taken by CGWA/DMs/DCs against the defaulting project proponents.

Some significant findings on operation of facilities without obtaining NOC for Ground Water

A few specific instances of operation of facilities without obtaining NOCs, are mentioned in Table 3.2.

Table 3.2: Operation of facilities without obtaining NOC for ground water

Sl. No.	State	Audit Observation
1.	**Gujarat**	Gujarat Pollution Control Board (GPCB) provided details of 3,589[34] various water intensive units. Of these, NOCs had been granted by the Regional Director office, CGWA to only eight units and 613 applications were pending with CGWA, Ahmedabad for granting NOC. It was observed that 2,968 units had not applied for NOC. Thus, 3,581 units were withdrawing ground water and using as raw material without NOCs.
2.	**Haryana**	Haryana State Pollution Control Board (HSPCB) had issued CTO/CTE to 5,069 industrial projects in four regions (Faridabad, Sonepat, Dharuhera and Panchkula) between April 2013 and December 2018, of which 3,643 units were using ground water for their activities. It was seen that only 840 units had applied for NOC of which 48 NOCs were granted during the period 2013-18. Thus, 3,595 units in the State were extracting ground water without NOCs.
3.	**Jammu & Kashmir**	Out of 22,474 industrial units registered during 2013-18 with Jammu and Kashmir State Pollution Control Board (JKSPCB), 75 units were water intensive. However, while granting CTO to these 75 units, JKSPCB did not impose any condition for obtaining NOC for ground water abstraction. Audit noticed that 73 out of these 75 water intensive units had not obtained NOC from the competent authority and were extracting ground water without any authorisation. JKSPCB stated (July 2018) that it would initiate the process to incorporate a condition in the CTO for obtaining NOC from concerned authorities.

Further, in West Bengal, during a project site visit, Audit found exploitation of ground water by an RBI bank note production company, which is discussed in Box 3.2.

Box 3.2: Exploitation of ground water by project proponent in West Bengal

Bharatiya Reserve Bank Note Mudran (P). Ltd, Salboni, West Bengal:

The proponent constructed nine tube wells between 1993 and 2018 for domestic, industrial and horticultural use. During joint site visit (September 2018) by the Audit team with the officers of the West Bengal Pollution Control Board (WBPCB), it was noticed that the firm was abstracting ground water through seven tube wells for which they had not taken any permit from the State Ground

[34] Mineralized water-71, Dairy-102, Fertilizer-64, Pulp & Paper-125, Sugar-23, Tanneries-3 and Textile-3,201

Water Authority, State Water Investigation Directorate (SWID), which was required as per terms and conditions of the CTO received from WBPCB.

Tube wells at Bharatiya Reserve Bank Note Mudran (P). Ltd, Salboni

Audit also noticed good practices seen in two States, which are highlighted in the Box 3.3.

Box 3.3: Good practices in grant of NOCs for projects

In two States, it was observed that a system was established whereby consent for operation could only be granted after NOC for ground water extraction was obtained.

1. **Tamil Nadu**: According to the regulation for management of ground water and issue of NOC for extraction of ground water, the Tamil Nadu Pollution Control Board and BIS should issue the permission only after obtaining the NOC from the State. Further, no schemes can be formulated in over-exploited and critical firkas and all the schemes should be formulated through the State Ground and Surface Water Resources Data Centre, Chennai.
2. **Maharashtra**: From 2012 onwards, CTO is granted to project proponent by Maharashtra Pollution Control Board (MPCB) only after the proponent obtains the NOC from CGWA. As per the guidelines of CGWA, from November 2015, NOC for ground water withdrawal was made mandatory for all industries/projects in the State using ground water irrespective of its date of coming into existence. Accordingly, MPCB have issued notices to the industry/projects directing them to apply for necessary NOC from CGWA for ground water use. CTO is issued only after the industry/projects submit copy of the application submitted to CGWA for issue of NOC to use ground water.

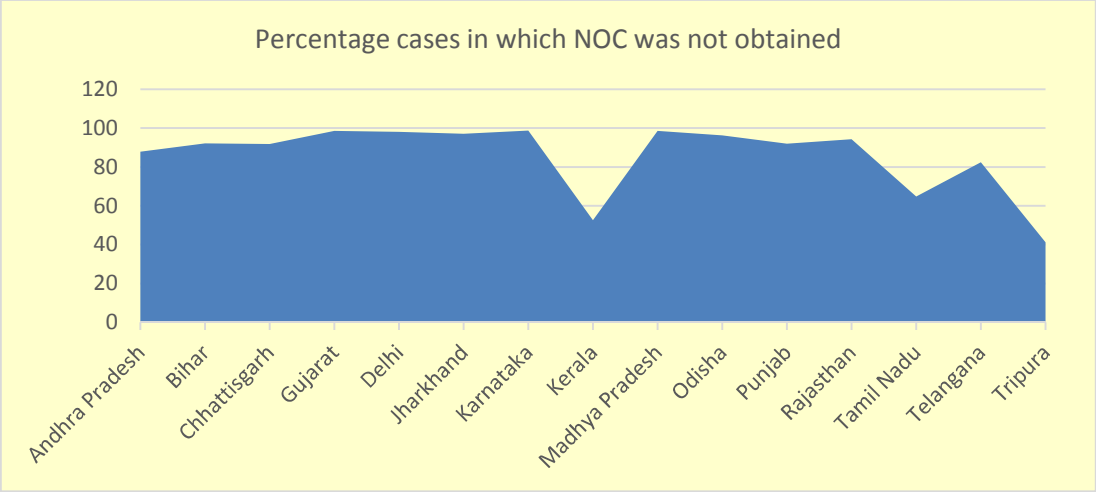
3.3.2 Projects granted license by Bureau of Indian Standards

License to use the Standard Mark on a product is accorded by the Bureau of Indian Standards (BIS) only after BIS has ensured the capability of the manufacturer to manufacture the product continuously in accordance with the relevant Indian Standard. There is no provision in the Rules and Regulations of BIS for imposing the condition of obtaining NOC from CGWA before grant of license to Packaged Drinking Water units.

Audit observed that in 15 States for which data was made available to audit, BIS licenses were issued to 3,189 packaged drinking water units since 2013. Of these, only 642 proponents obtained NOC from CGWA/State authorities for ground water extraction. Thus, in 2,475 of 3,189 cases i.e. in 78 *per cent* of the licenses granted by

BIS, the project proponents were operating without obtaining NOCs from CGWA (Chart 3.2).

Chart 3.2: Cases in which NOC was not obtained by Packaged Drinking Water units



In the absence of a mandatory linkage between licenses granted by BIS and the obtaining of NOC from CGWA, the instances of project proponents not obtaining NOC may persist.

The Department accepted (October 2019) that there was a gap in the number of NOCs obtained by Packaged Drinking Water units and the licenses granted by BIS. DoWR,RD&GR further stated (September 2020) that CGWA had held meetings with FSSAI, wherein it was agreed that FSSAI would not issue license to industries that do not have NOC for ground water extraction.

3.3.3 Projects granted license by other agencies

Audit observed cases of licenses issued by other Central and State agencies in 13 States, in which NOCs for ground water extraction was not obtained. The findings in respect of 12 States are mentioned in Table 3.3. The findings in respect of Jammu & Kashmir are discussed separately in the next paragraph.

Table 3.3: NOC for ground water not obtained in licenses granted by other Central/State agencies

Sl. No.	State	Audit observation
1.	**Andhra Pradesh**	Audit noticed from the data of the Andhra Pradesh State Tax (GST) department pertaining to water intensive units for 2013-19 that out of 351 units, only 55 units had obtained permission from ground water and Water Audit Departments (GW&WAD). Thus, 296 water intensive units were drawing ground water without any authorisation. Administrator, APWALTA confirmed (July 2019) that only three units had approached for NOC, of which one case was under process and two had been denied permission.
2.	**Bihar**	The Food Safety and Standards Authority of India (FSSAI) had issued licenses to 57 water intensive industries in the State. Audit noticed that out of these industries, only four industries had obtained NOC from the CGWA for abstraction of ground water. The remaining 53 units were operating without NOCs.

Sl. No.	State	Audit observation
3.	**Goa**	Out of 86 water intensive industries that were granted licenses by the Food and Drug Administration, we scrutinised 45 records and observed that in 18 cases ground water abstraction structures (well/bore-well) were available in the premises of the manufacturers but were not registered with the Ground Water Authority. The department stated (April 2019) that the Ground Water Officers had been notified to take immediate action in this regard.
4.	**Karnataka**	(i) FSSAI had issued 409 licenses during the period 2013-18 to water intensive industries such as packaged drinking water, beverages, etc. and the source of water was stated to be bore well/ground water. Out of 409 licenses issued by FSSAI, 72 industries were located in Notified Areas and 337 industries were located in Non-Notified areas. Project proponents of the 72 licenses granted in Notified Areas[35] did not apply or obtain NOC from KGWA and were operating without NOC. This was irregular, as the guidelines of KGWA do not permit issue of NOCs for these type of industries. (ii) Regional Transport Office (RTO) which is the authority for registration of lorries/tankers, had registered/issued license to 1,106 tankers (including water tankers) during the period 2014-19. Bruhat Bengaluru Mahanagara Palike (BBMP) which is the authority for issuing trade license to tankers, had issued/renewed 758 trade licenses for water supply during 2014-18. These licenses were issued without ensuring the source of water and without obtaining NOC from KGWA. Thus, regulation of ground water viz., identification of source of water extracted, if ground water is to be extracted, then the extent of ground water to be extracted, actual quantity extracted, quality of ground water which is being supplied, etc. were not ensured before grant of licenses.
5.	**Odisha**	As per the records of Chief Engineer, Water Service, Government of Odisha, out of 452 firms/projects abstracting ground water in the State, 268 firms/projects were withdrawing ground water without obtaining NOC from CGWA.
6.	**Punjab**	FSSAI had issued 75 licenses to water intensive Food Business Operators in Punjab. We observed that only three units were issued NOCs for ground water abstraction by the CGWA.
7.	**Rajasthan**	NOC is required for registration of distilleries and breweries from the office of the Excise Commissioner, Udaipur. It was seen that 10 distilleries and nine breweries were registered in their office of which NOCs were issued to only four distilleries and seven breweries. Out of remaining six distilleries, NOCs for five were under process and one unit did not apply. Similarly, of the two remaining breweries, NOC for one was under process and one unit did not apply.
8.	**Tamil Nadu**	Out of total 1,259 licenses issued by FSSAI (Central and State) up to April 2018, only 414 obtained NOC for drawing of ground water from SG&SWRDC.
9.	**Telangana**	(i) Under the WALTA Act 2002, all bore wells were to be registered with the concerned authority and any unauthorised bore wells were to be seized/closed. Applications of 12 Industries in Nizamabad District were rejected by SGWD during the period 2016-18. It was seen that three firms (out of 12 rejected cases) already had existing bore wells in their premises. SGWD stated that the concerned authority was informed about the unauthorised bore wells. However, no action was taken to seize/close these bore wells. Audit team visited the three industries in October 2018 and found that these were still withdrawing ground water from unauthorised bore wells. (ii) The SGWD, Nizamabad identified (March 2017) 46 Packaged Water Plants that were abstracting ground water without obtaining NOC. The Audit team along with the staff of GWD Nizamabad visited three of these plants during October 2018 and found that these plants continued to withdraw ground water

[35] In Karnataka (self-regulated State), NOCs/permits are issued only in Notified areas.

Sl. No.	State	Audit observation
		from unauthorised bore wells. Similarly, 283 such water plants were also identified in Hyderabad district. Though penal provisions[36] are prescribed under WALTA Act, no action in this regard was taken in both the above cases.
10.	**Tripura**	Scrutiny revealed that out of 17 functional packaged drinking water industries, 14 had applied for NOC. Of these, NOCs were issued to 12 industries by the CGWA though all the 17 industries had been granted licenses by BIS and FSSAI. Application of one industry was under process and one application was returned due to lack of documents.
11.	**Uttar Pradesh**	Guidelines of CGWA (November 2015) stipulate that NOC must also be obtained for infrastructure projects including Metro/Railway station for withdrawal of ground water. Audit observed that the North Central Railway (NCR) was abstracting ground water at the rate of 8,096.922[37] cubic meter per day for washing, cleaning, etc. and 38,702.99[38] cubic meter per day through tube wells for drinking purposes, without obtaining NOC contrary to the provisions of above said guidelines. Railway authorities were also unaware of the provision of obtaining NOC as per CGWA guidelines. NCR stated (October 2018) that water supply arrangements were old and there were no guidelines for taking NOC from CGWA. However, the reply was not tenable as in the revised guidelines of November 2015, all existing industries/projects which were drawing ground water and had not obtained NOC from CGWA, either due to its coming into existence prior to formation of CGWA or due to exemption from obtaining NOC as per earlier guidelines, were also required to apply to CGWA with immediate effect for NOC for ground water withdrawal.
12.	**West Bengal**	During 2013-18, the General Manager, District Industrial Centre and Ex- officio Environment Officer (Hooghly district), issued CTE to 31 packaged drinking water projects. Out of these 31 projects, only 16 projects had applied to SWID for necessary permit to abstract ground water. Of these 16, only seven projects had taken necessary permit from SWID to abstract ground water till July 2018. The application of seven projects had been rejected and two applications were under process.

3.3.3.1 Jammu and Kashmir

(i) Illegal extraction/exploitation of Ground Water by industrial units

As per provisions of the Jammu and Kashmir Water Resources (Regulation and Management) Act (JKWRRM) 2010, the licensing authority can exercise powers to take all steps necessary for the prevention of illegal use of water, including the power to break open the door of any premises where sinking of well or extraction of ground water may be going on[39].

Audit noticed from the information provided by the State Excise and Industries Departments that 78[40] industrial units had installed 92 bore/ tube wells for extracting

[36] As per section 35 of WALTA act, whoever contravene the provision of the act or violates any rules made under the act should be punished with fine not less than ₹ 1,000 extended up to ₹ 5,000.

[37] For Agra and Jhansi division only

[38] For Allahabad, Agra and Jhansi division only

[39] Provided that the owner or any other person in occupation of the premises, if present therein refuses to open the door on being called to do so.

[40] Jammu: 47; Kashmir :31

ground water without obtaining licenses. The Public Health Engineering Department (PHED), however, did not initiate any action to identify the commercial establishments involved in illegal extraction of ground water and enforce the provisions of the Act. Consequently, there was continued illegal extraction of ground water and non-recovery of license fee of ₹ 92 lakh[41] as well as water charges in these cases. A joint verification by Audit and representatives of Excise Department (September 2018) conducted in respect of nine industrial units (Breweries/ Liquor bottling plants) confirmed that ground water was being extracted by eight such units through 10 bore/ tube wells without license. One industrial unit had ceased to operate.

Oakland Bottlers

Basantar Bottlers

Kashmir Bottlers

Trikuta Bottlers

Dewan Modern Breweries

New India Breweries

Dewan Modern Breweries

Basantar Breweries

Srhgam Bottlers

[41] 92 bore wells/ tube wells at the rate of ₹ one lakh each

PHED stated (July 2018) that the respective authorities have been directed to regularise the extraction of ground water by these units and assess/ recover the usage charges, along with arrears.

(ii) Permission granted for Ground Water extraction without ensuring NOCs from the designated authority

Under the JKWRRM Act 2010, the Chief Engineer/Incharge, PHED has been designated as competent authority to issue licenses in relation to drinking water supply and ground water.

Audit noticed that State Industrial Development Corporation (SIDCO) Samba and Bari Brahmana, Jammu granted permission to 128 industrial units to install 138 bore wells within their premises. Of the 128 industrial units, only five units had obtained NOC from the authority designated under the JKWRRM Act 2010 for installation of six bore wells. The remaining 123 units were operating 132 bore wells without valid NOCs.

PHED, Jammu informed (January 2019) SIDCO that the permissions granted by SIDCO would be treated as illegal and cancelled and asked SIDCO to direct the concerned industrial units to obtain NOCs from the PHE Department.

3.4 Delay in processing of applications by CGWA for grant/renewal of NOC in non-notified areas

In non-notified areas, CGWA issues NOC to industrial/infrastructural/mining projects for ground water withdrawal as per the guidelines/criteria for evaluation of proposals/requests for ground water abstraction. NOC is accorded in non-notified areas for a period of two years initially and is renewed for a period of three years thereafter. Subsequently, NOCs can be renewed every five years subject to compliance of conditions mentioned in the renewed NOC. Applications for issuance/renewal of NOC can be made online through NOCAP[42]. The permitted timeline for issuance of NOC by CGWA is 60 days after verification of the completeness of the application with respect to fulfilment of conditions.

During 2013-19, CGWA accorded 3,517 fresh NOCs and renewed 320 NOCs for ground water withdrawal to various industry, mining and infrastructure projects (both Online and Offline). Audit observed that 10,758 applications for grant of NOC and 144 applications for renewal were pending as on 31 March 2019. Thus, the quantum of pending NOCs was thrice the number of fresh NOCs issued during last six years.

The period wise delay in processing of applications is given in Table 3.4. The State-wise details of NOC pending and renewal are given in ***Annexure 3.2***.

[42] Online application for Issue of NOC to abstract Ground Water.

Table 3.4: Delay in processing applications for grant/renewal of NOC

Delay in days	Number of pending NOC for fresh applications	Number of pending applications for renewal of NOC
Less than 30 days	0	11
31-90	0	24
91 to 180 days	2,183	25
181 to 365 days	4,755	25
More than one year to three years	3,820	56
More than three years	0	3
TOTAL	**10,758**	**144**[43]

The Department stated (October 2019) that pendency of applications was due to shortage of human resources[44] in the Regional Offices and CGWA and delays in receipt of stipulated documents as per the guidelines from the proponents. DoWR,RD&GR further stated that as per the directions of Hon'ble NGT (OA no. 59/2012 dated 03.01.2019) all applications for grant of NOC as well as renewal from Over-exploited, Critical and Semi-critical areas have been put on hold pending final directions of the Hon'ble NGT, increasing the number of pending applications.

The reply was not tenable as there were 8,575 applications pending for grant of NOC for more than 181 days even before the issue of such orders by NGT. Further, in pursuance of the directions of the Hon'ble NGT, CGWA has issued (September 2020) revised guidelines and therefore, needs to expedite the processing of pending applications.

3.5 Non-receipt of applications for renewal on expiry of NOC

As mentioned in para 3.4, NOC initially granted for two years can be renewed for three years and then every five years. Audit observed that in 474 cases, renewal of NOC was due during 2013-18 but the project proponents did not apply for renewal. CGWA did not take any action under section 15[45] of the Environment (Protection) Act, 1986 against these project proponents. Thus, even after expiry of the NOC, existing industries/projects continued to draw ground water without any regulation.

The Department stated (October 2019) that show cause notices had been issued by Regional Offices to defaulting firms. DoWR,RD&GR further stated that in many States

[43] Information in respect of seven out of 23 States was received from CGWA.

[44] DoWR, RD&GR stated (September 2020) that only 10 posts had been created for Secretariat of CGWA at Headquarters. No posts had been created for CGWA work in Regional Offices. In Regional Offices, officers who had been deployed for Authority work was also performing their routine scientific duties.

[45] Whoever fails to comply with or contravenes any of the provisions of this Act, or the rules made or orders or directions issued thereunder, shall, in respect of each such failure or contravention, be punishable with imprisonment for a term which may extend to five years or with fine which may extend to one lakh rupees, or with both, and in case the failure or contravention continues, with additional fine which may extend to five thousand rupees for every day during which such failure or contravention continues after the conviction for the first such failure or contravention

the CTO issued by the respective SPCBs was not considered for renewal if the project proponent did not have the NOC for ground water abstraction from CGWA/ SGWAs.

However, the Department did not provide actual number of show cause notices issued against the above mentioned 474 cases.

3.6 Installation of piezometers

Guidelines for ground water abstraction (November 2015), *inter alia* stipulated that piezometer for monitoring the ground water level is to be installed/constructed by the project proponent at a minimum distance of 50m from the pumping well through which ground water is being drawn. Ground water levels should be measured monthly. 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[46] of CGWB and for its validation.

Audit observed that no details regarding installation of piezometers, data on water level, change in water level, etc. were received from the project proponents. Consequently, piezometers were neither brought into the National Hydrograph monitoring system of CGWB, nor validated. In the absence of above mentioned data from these piezometers, the data relating to ground water situation in the country was not complete to that extent. CGWA did not take action[47] against project proponents for not complying with this requirement.

Department stated (October 2019) that water level data of Piezometers was being received from the proponents on annual basis. Efforts were on to ensure that this data was appropriately integrated into the database of CGWB and to develop suitable protocols to enable CGWA/CGWB to assess the impact of withdrawal of ground water by industries/Infrastructure Units/ Mining Projects on the ambient ground water regime. The reply indicates that CGWB had not assessed the impact of ground water extraction by the project proponents so far. The reply was also silent about the extent of compliance by the proponents and the timelines for integration of data into database of CGWB.

3.7 Regulation of Ground Water Extraction in Notified areas

CGWA has notified 162 assessment units/areas in 14[48] States/ UTs for the purpose of regulation of ground water development. These areas were notified based on over-exploitation, contamination, sustainability of ground water resources or the need for protecting limited available fresh water resources for drinking and domestic uses.

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[46] The National Hydrograph Network stations set up is a system of spatially distributed observation point at which periodic monitoring of Ground Water and regime behaviour are done.

[47] Non-compliance of conditions mentioned in the NOC may be taken as sufficient reason for cancellation of NOC accorded/ non-renewal of NOC.

[48] Out of these, seven States have their own regulation

Regulation of ground water development in Notified areas is to be done through district administrative heads who have been declared as Authorised Officers under the provisions of section 4 of the Environment Protection Act, 1986. All issues pertaining to granting of NOCs for ground water withdrawal, checking violations, sealing of tube wells, launching of prosecution against offenders, etc. are to be addressed by the Authorised Officers. For more effective regulation of ground water development and management, constitution of Technical Advisory Committees under the Chairmanship of District Collector/Deputy Commissioners had been proposed. Such Committees also render advice to the District Collectors/Deputy Commissioners in matters pertaining to regulation of ground water development and management.

Recognising that notification of assessment units/blocks was done as per existing priorities and knowledge base and that no uniform standards/criteria were adopted for such notification, DoWR,RD&GR constituted a committee (October 2017) to review the criteria for notification and to suggest standard criteria for notification of assessment units.

The Report of the committee was placed (September 2018) before the members of the CGWA and it was unanimously agreed to do away with the practice of notification of assessment units for ground water.

Accordingly, CGWA issued revised guidelines (September 2020) stipulating conditions for grant of NOCs for units in areas based on their categorisation as Safe, semi-critical, critical and over-exploited. Under the revised guidelines, in over exploited areas, NOCs can now be granted to new industries falling in the category of Micro, Small and Medium Enterprises (MSME).

Audit noticed that 155 of the 162 areas notified earlier fell in the category of 'over-exploited'. As per the previous guidelines, no extraction of ground water for other than drinking water purposes was permitted in such areas, by virtue of their having been notified. With the latest revision of Guidelines, NOC to MSME units, in such areas will now be permissible even though they are categorised as over-exploited.

Significant observations in respect of regulation of ground water in Notified Areas are given in the paragraphs below.

3.7.1 Constitution of and meetings of Advisory Committee

In Notified Areas, permission to abstract ground water through any energised means is not accorded for any purpose other than drinking water. The permission would be granted by the Authorised Officer in consultation with the Advisory Committee constituted for this purpose. The constitution of Advisory Committee was under the supervision of the concerned District Magistrate. The Advisory Committees were supposed to meet once in a month for evaluating the proposals received for NOC by the respective DC/DM in the notified area.

Audit observed that there was no provision for constitution of Advisory Committee in one State (West Bengal). No Advisory Committee was constituted in one State (Andhra Pradesh), and in five States/UTs, the meetings of Advisory Committee were not held at regular intervals, as mentioned in Table 3.5. No information was available in respect of the remaining States/UTs.

Table 3.5: Non-constitution of Advisory Committees

Sl. No.	State	Audit observation
1.	**Diu & Daman**	Advisory Committee was constituted in 2004 for Diu Notified Area and extension was also given to the Committee till April 2019. However, no meeting of the Advisory Committee was held in Diu district till February 2019 i.e. for nearly 15 years since constitution of the Committee.
2.	**Gujarat**	Advisory Committees for all three notified talukas of Gandhinagar district (notified in September 2000/November 2012) and for Mehsana Taluka of Mehsana district (notified in November 2012) were constituted in February 2014 and February 2018 respectively after a delay of more than 13 years and five years respectively. Further, only four Advisory Committee meetings were held in Gandhinagar district and no meeting was held in Mehsana district. Further, in both Gandhinagar and Mehsana districts, as per order (December 2012) of CGWA, New Delhi, the Advisory Committee was to be constituted under Chairmanship of District Collector with five members of different organisations. However, the Authorised officer cum District Magistrate, Gandhinagar while constituting the committee, did not include representatives of the Non-Government Organizations for all the three talukas in Gandhinagar district. Similarly, the Authorised Officer in Mehsana did not include representative from the Regional Director, CGWA Ahmedabad which is one of key members of the Advisory Committee. While accepting the audit observation, the Collector, Gandhinagar and Collector, Mehsana stated (September 2018 and October 2018) that representative of NGO and Regional Director, CGWA, Ahmedabad respectively would be added.
3.	**Haryana**	Out of 11 notified districts in Haryana, District Level Advisory Committees had been constituted in 10 districts (except Kaithal district). There was no prescribed frequency of meeting of the district level Advisory Committees. The meetings of the committees were held only for issuance of NOCs for extraction of ground water during the period year 2013-18. Meetings were not held for monitoring purpose. 29 meetings were held in five test-checked districts during 2013-18.
4.	**Madhya Pradesh**	Out of the seven notified areas in the State, Advisory Committee was constituted for only one notified area in Indore district. In Indore, 36 meetings were held during 2013-19.
5.	**Rajasthan**	Advisory Committee was constituted in nine of the twelve notified areas. Advisory Committee was not constituted in Karauli district and no information was provided in respect of Ajmer and Barmer district.

The concept of Advisory Committees was introduced in notified areas in order to have effective regulation of ground water extraction. However, absence of Advisory Committee or infrequent meetings defeated the very purpose for which the committee was intended. However, in the revised guidelines (September 2020), the process of notifying of areas by CGWA has been dispensed with.

3.7.2 Non submission of drilling information by 'other than Individual households'

As per Guidelines for ground water abstraction in respect of 'other than Individual households' in notified area, installation of water meters in the abstraction structure was mandatory and confirmation of such installation should be given to the Authorised Officer under intimation to the concerned Regional office of CGWB immediately after construction. All details of the drilling, such as location of well[49], formations encountered, depth and diameter of the constructed ground water abstraction structures, type of pipes used, yield of bore well/tube well, fracture zones encountered/zones tapped and ground water quality, etc., were to be furnished to the nodal agency authorised and to CGWB Regional Office within 15 days of the completion of the construction.

Audit observed that CGWA/ Regional Offices of CGWB did not ensure that such information was received from 'other than Individual households' that had been granted NOCs in the notified area. Thus, CGWA had no data on the parameters prescribed in the guidelines in respect of the authorised bore wells drilled in the notified areas.

3.8 Regulation of Ground Water by States having their own regulation

Thirteen[50] States/ UTs have constituted State Ground Water Authority (SGWA) or issued Government Orders for the purpose of ground water regulation. In these States, regulation for ground water is carried out by the SGWAs or the designated authorities. Audit observed deficiencies in regulation of ground water in six States/UTs. The audit findings are mentioned in Table 3.6.

Table 3.6: Regulation of ground water in self-regulated States

Sl. No.	State	Audit Observation
1.	**Andhra Pradesh**	In addition to the notified areas declared by CGWA, the SGWA also notifies areas separately based on periodical Ground Water Estimation Committee (GEC) assessments[51] under APWALTA Act 2002. The SGWA notified 1,227 villages in 168 blocks/mandals of nine districts of Andhra Pradesh as over-exploited during January 2018 based on GEC 2012-13 Report. CGWA had notified five mandals[52] consisting of 97 villages. The difference was due to the fact that the CGWA considers mandal as the unit for notifying areas while the State Regulatory authority considers the village as the unit for notifying areas. This resulted in a situation where some villages in a mandal notified by the

49 Latitude and Longitude

50 Andhra Pradesh, Goa, Himachal Pradesh, Jammu & Kashmir, Karnataka, Kerala, NCT Delhi (through Government Orders), Tamil Nadu (through Government Orders), Telangana, West Bengal, Chandigarh (through bye-laws), Puducherry and Lakshadweep.

51 In Andhra Pradesh, periodical assessment of Ground Water level village level was made by the GEC and GEC reports were sent to CGWB. After approval of CGWB, the State WALTA issued notification contains a list of OE villages where ban is imposed on Ground Water extraction except for drinking purposes. GEC reports were prepared in 2007-08, 2008-09, 2010-11, 2012-13 (2016-17 approved by CGWB and due for notification).

52 Chilamatur, Giddaluru, Narpala, Tirupathi rural and Vempalli

<table>
<tr><th>Sl. No.</th><th>State</th><th>Audit Observation</th></tr>
<tr><td></td><td></td><td>CGWA may not be considered as over-exploited in the notified list of the State as shown in Table 3.6.1.
Table 3.6.1: Difference in villages notified by CGWA and SGWA
<table>
<tr><th>Sl. No.</th><th>District</th><th>Mandal notified by CGWA</th><th>Number of villages in the mandal notified by CGWA</th><th>Number of Villages notified as over-exploited by APWALTA</th><th>Number of villages not notified by APWALTA</th></tr>
<tr><td>1</td><td>Ananthapuramu</td><td>Chilamatur</td><td>21</td><td>6</td><td>15</td></tr>
<tr><td>2</td><td></td><td>Narpala</td><td>12</td><td>3</td><td>9</td></tr>
<tr><td>3</td><td>Chittoor</td><td>Tirupathi Rural</td><td>29</td><td>10</td><td>19</td></tr>
<tr><td>4</td><td>Prakasam</td><td>Giddaluru</td><td>20</td><td>11</td><td>9</td></tr>
<tr><td>5</td><td>YSR Kadapa</td><td>Vempalli</td><td>15</td><td>4</td><td>11</td></tr>
<tr><td></td><td>Total</td><td></td><td>97</td><td>34</td><td>63</td></tr>
</table>
Thus, 63 villages which are in the mandals notified as over-exploited by the CGWA do not have a ban on permissions (NOCs) as they are not notified as over-exploited villages by the State. Due to non-imposition of restrictions on use of ground water for commercial/ industrial use in non-notified villages in the CGWB notified Mandal, remaining villages slip into over exploited category from semi-critical/critical villages within in a short period.
Water Resources Department (WRD) stated (July 2019) that the Government of Andhra Pradesh was notifying certain villages as over exploited and imposing ban on construction of new wells for all purposes, except for drinking water. Further, Andhra Pradesh is the only State in India which assesses the ground water potential at village level; therefore notification was also implemented at village level.
The fact however, remained that the difference in categorisation of over-exploited areas resulted in lack of regulation in some of the areas that were excluded by the State Department.</td></tr>
<tr><td>2.</td><td>Delhi</td><td>In July 2010 Government of National Capital Territory of Delhi (GNCTD) declared all the districts of National Capital Territory of Delhi as notified areas. Audit observed that NOCs were issued by the competent authority for purposes other than drinking water. The Competent Authority issued 407 NOCs to infrastructure projects and 169 NOCs in irrigation and agricultural projects during the period 2013-18 in the five districts selected for audit.
Further, these projects/cases were required to follow the terms and conditions mentioned in the NOC. Audit observed that State regulatory authorities had not laid down any mechanism to monitor the compliance of the terms and conditions mentioned in the NOC. No guidelines were framed for inspection of the site by Authorised Officer/Competent Authority to verify the compliance of conditions for ground water withdrawal mentioned in the NOC. As a result, the Competent Authority/ Authorized Officers did not conduct any inspection of the site and were therefore unaware of the extent to which the project proponents were complying with the terms and conditions of the NOC. As per notification (July 2010) of Government of National Capital Territory of Delhi (GNCTD), the Advisory Committee was required to convene at least 60 meetings (12 per year) during the period</td></tr>
</table>

Sl. No.	State	Audit Observation
		2013-18. Audit however noticed that only four to 31 meetings[53] were held in the five districts during the period.
3.	**Karnataka**	CGWA has notified 22 areas in Karnataka whereas the SGWA has notified 43 areas as per its discretionary powers. Out of the 22 notified areas of CGWA, 21 areas are also appearing in the SGWA's list of notified areas. Audit observed that applications for NOCs in Bangalore Rural (106), Bangalore Urban Districts (578) and BBMP areas (10,971) were pending from 2013-14 onwards. The reasons for pendency were attributed to difficulty in inspecting sites, as there were only two Geologists working under the District Office to cover all 198 BBMP wards and four taluks in their Districts, applications pending for want of information/inspection from District offices, etc. It was also stated that the office was not able to correspond with the applicant due to lack of contact address.
		In Karnataka, the power to grant permit for withdrawal of ground water for agricultural purpose is delegated to the District Ground Water Committee. NOCs for agricultural purpose were issued in Belagavi, Bagalkote and Chikamagalur Districts. NOC conditions stipulated that low water yield crops were to be grown. However, the application format for NOC did not have a declaration of the nature/type of crop to be grown by the applicant. There was also no system of obtaining completion report from the applicants. In the absence of information on the type of crop grown, violation if any, of the conditions could not be detected, as the Department had also not conducted any inspection.[54]
4.	**Kerala**	In Kerala, SGWA has notified 5 blocks whereas CGWA has not notified any blocks.
5.	**Puducherry**	As per CGWA, only Puducherry Region[55] has been included as a Notified Area. However, the Government of Puducherry declared Puducherry (categorised as over-exploited region) and Karaikal (categorised as a safe region) regions as Notified Areas with effect from February 2005. Pondicherry Ground Water Authority (PGWA) issues permits for extraction of water for drinking, agricultural, industrial and infrastructure projects. A Regional Committee was constituted (July 2010) for evaluation of applications for ground water clearance for industrial and infrastructure purposes. The total number of applications received was not available as separate records were not maintained to monitor the receipt and clearance of applications for renewal of registration. However, as on 31 March 2018, 11 applications for renewal of registration were pending to be processed by PGWA. The period of delay ranged from 341 to 365 days and PGWA attributed the delay to shortage of human resources.
6.	**West Bengal**	As per guidelines of CGWA, NOC can be issued in a notified area only for drinking water and only if there was no public water supply in the area. CGWA declared one notified area namely Haldia Industrial Complex in August 2000. There was no separate or special provision in the State Ground Water Act for management and regulation of ground water in the notified area, however, State Level Authority (SLA) decided (June 2009) to maintain the status of

[53] West District-4, South District-14, North West District-10, South West District – 31 and East District – 17 Meetings

[54] Karnataka Ground Water (Regulation and Control of Development and Management) Act 2011 and rules 2012 does not provide any specific condition or prescribed frequency to carry out any inspection. However, section 17 of the Act empowers the department to inspect the wells.

[55] The UT of Puducherry has four regions. Out of these four regions, Government of Puducherry declared Puducherry and Karaikal regions as notified areas. Yanam and Mahe regions are non-notified areas.

Sl. No.	State	Audit Observation
		Haldia as a notified area with necessary guidelines of CGWA for management and regulation of ground water. SLA had also proposed (June 2009) for amendment of the State Ground Water Act to maintain the status of the notified area but no amendment was made as of February 2019. Audit observed that during 2013-18, 17 permits were issued to 10 industry and infrastructure projects in Purba Midnapore in the notified area of Haldia for abstraction of ground water although public water supply was available in the area. Thus, the CGWA guidelines were not followed. It was further noticed that there was delay in issue of six permits in Purba Midnapore for periods ranging from 34 to 90 days due to non-conduct of meetings by the District Level Authority in time.

The revised guidelines (September 2020) stipulate that wherever States/ UTs have come out with their own ground water abstraction guidelines, which are inconsistent with the CGWA guidelines, the provisions of CGWA guidelines will prevail. Further, the process of grant of NOC has been made online through a web based application system.

3.9 Submission of quarterly progress reports by SGWA

As per the guidelines (2015) for ground water abstraction, SGWAs were required to send quarterly progress reports to CGWA for records. Audit observed that no such reports were obtained by CGWA. CGWA sought such (October 2018) reports from its regional offices at the instance of audit. However, CGWA stated (June 2019) that in spite of repeated requests and follow up, the said progress reports were received from only three States/UTs, namely Himachal Pradesh, Tamil Nadu and Puducherry. The remaining 10 States/UTs had not responded and no progress could be obtained from these States. In absence of these reports, CGWA was unaware of the status of regulation in these States.

DoWR,RD&GR stated (October 2019) that to address this problem of non-reporting by States, CGWA had proposed to develop a common platform for every State/ UT with a simple online system and that once a final decision on policy/guidelines for regulation of ground water was taken by the Hon'ble NGT, appropriate action to develop the common application system would be initiated.

The revised guidelines issued by CGWA (September 2020) stipulate that self-compliance of conditions laid down in the NOC shall be reported by the users online in the web portal of CGWA/SGWA. CGWA needs to ensure that project proponents duly submit their self-compliance on its portal.

3.10 Post NOC monitoring by CGWA and Authorised officers

3.10.1 Violation of conditions mentioned in NOCs

As per Section 15 of the Environment (Protection) Act, 1986, CGWA has been conferred with the powers to resort to penal provisions to those who failed to comply

with or contravened any of the provisions of this Act. CGWA appointed (October 2017) the District Magistrate/ Deputy Commissioner of each revenue area in 23[56] States/UTs as the 'Authorised Officer' for the purpose of enforcement of directions of CGWA and conditions laid down in the NOCs issued by the Authority for ground water withdrawal.

Audit conducted joint field visits along with CGWA, State Authorities and Authorised officers in Notified and Non-Notified Areas to the industries/project sites (other than individual households) in selected cases[57] for verification of compliance with conditions laid out in NOCs granted by CGWA and the Authorised officers. Audit observed that there was widespread non-compliance of conditions mentioned in the NOC, as discussed in the following paragraphs.

(i) General conditions of NOC that were violated

The conditions of NOC that were violated and the extent of violations is shown in Table 3.7. The State-wise findings are given in ***Annexure 3.3***.

Table 3.7: Cases in which conditions in NOCs were violated

Sl. No.	Category	No. of projects in which condition was mentioned in NOC	No. of cases in which condition mentioned in NOC was violated	Percentage of cases in which condition mentioned in NOC was violated
1.	**Number of Tube Wells** Tube wells, bore wells and Dug wells are ground water abstraction structures. As per the conditions of NOC, the project proponent has to construct prescribed number of tube wells/bore wells as specified in NOC.	1,238	104	8
2.	**Installation of Water Meter** A water flow meter is an instrument capable of measuring the amount of water passing through a pipe. While issuing the NOC to various projects, there was a condition that water meter should be fitted with bore well/tube well by the firm at its own cost and ground water abstraction was to be monitored.	967	378	39
3.	**Installation of Piezometer** Piezometer is a bore well/tube well used only for measuring the water level by lowering the tape/sounder or automatic water level measuring	709	351	50

[56] Arunachal Pradesh, Assam, Bihar, Chhattisgarh, Gujrat, Haryana, Jharkhand, Madhya Pradesh, Maharashtra, Manipur, Meghalaya, Mizoram, Nagaland, Odisha, Punjab, Rajasthan, Tripura, Uttar Pradesh, Uttarakhand, Andaman & Nicobar, Dadra & Nagar Haveli, Daman & Diu and Lakshadweep Islands. The remaining States/UTs have their own mechanism for regulation of Ground Water.

[57] Non-notified Areas -595, Notified Areas – 221, Self-Regulated - 472

Sl. No.	Category	No. of projects in which condition was mentioned in NOC	No. of cases in which condition mentioned in NOC was violated	Percentage of cases in which condition mentioned in NOC was violated
	equipment. As per condition of NOCs, Piezometers were required to be installed in consultation with CGWB.			
4.	**Installation of Automatic Water Level Recorder** As per NOC condition, the piezometers installed were to be fitted with Automatic Water Level Recorder (AWLR) for real time monitoring of ground water level.	342	210	61
5.	**Monitoring of Pre and Post Monsoon ground water Quality** As per NOC condition, each water extraction unit had to monitor ground water quality twice in a year during pre-monsoon (in the month of May/June) and post-monsoon (in the month of October/November) periods.	659	285	43
6.	**Monitoring of water level data of wells** As per NOC condition, the firms had to install piezometer in the premises and monitoring ground water level data through it.	688	334	49
7.	**Construction of Rain Water Harvesting Structures** Units granted permission for extraction of ground water have to adopt artificial recharge of ground water by constructing rain water harvesting/recharge structures. The recharge should be implemented within the premises and/or same water shed/assessment unit.	987	429	43
8.	**Maintenance of rain water recharge structures** Artificial recharge efforts are aimed at augmentation of natural movement of surface water into ground reservoir through suitable civil construction techniques. These have to be properly maintained and desilting should be done periodically.	558	220	39
9.	**Submission of Compliance Reports** Compliance in respect of conditions specified in NOC was to be submitted to Regional Office of CGWA/ Regulatory agency.	776	438	56
10.	**Withdrawal of yearly ground water in excess of prescribed limit** NOC issued by CGWA prescribes the quantum of yearly ground water that can be withdrawn by a project proponent.	787	61	8
11.	**Installation of Sewage/Effluent Treatment Plants** The firm granted with NOC had to ensure proper recycling and reuse of waste water after adequate treatment. DoWR,RD&GR stated (October 2019) that functioning of Sewage/Effluent Treatment Plants	673	237	35

Sl. No.	Category	No. of projects in which condition was mentioned in NOC	No. of cases in which condition mentioned in NOC was violated	Percentage of cases in which condition mentioned in NOC was violated
	was under the purview of Pollution Control Boards. The reply is not acceptable as being one the conditions in the NOC, compliance to the same was to be monitored by CGWA also.			

(ii) Conditions specific to Notified areas

There are some conditions in the NOC granted to project proponents that are specific to notified areas. The authorised officers in consultation with the Advisory Committee would decide on standards for the area/ district under their jurisdiction. Such specific conditions that were violated by proponents are discussed below and the extent of violations is shown in Table 3.8. The State wise findings are given in ***Annexure 3.4***.

Table 3.8: Specific conditions violated in notified areas

Condition	Number of Sampled project	Number of Sampled Projects where condition was specified	Out of projects where such condition was specified, number of projects in which			Percentage of projects in which the condition was violated
			condition was complied with	compliance could not be ascertained in Audit	condition was violated	
Diameter of Tube well/Bore well The maximum diameter of ground water abstraction structures is restricted to 150 mm by CGWA. In case of Government water supply agencies, housing societies, the specifications (size, diameter) of the tube well can be higher depending on the ground water availability and requirement.	281	152	102	10	40	26
Capacity of pump The maximum capacity of the pump for ground water abstraction structures is restricted to five HP by CGWA. In case of Government water supply agencies, housing societies, tube well, this can be higher depending on the ground water availability and requirement.	221	130	57	16	57	44
Formation encountered to be sent to CGWB As per CGWA guidelines, details of the drilling done by	279	85	3	7	75	88

Condition	Number of Sampled project	Number of Sampled Projects where condition was specified	Out of projects where such condition was specified, number of projects in which			Percentage of projects in which the condition was violated
			condition was complied with	compliance could not be ascertained in Audit	condition was violated	
the proponent had to be furnished to the nodal agency authorised and to CGWB, Regional office within 15 days of the completion of the construction.						

Significant percentage of cases in which conditions stipulated in the NOCs were violated defeated the purpose of imposing such regulation of monitoring the quantity and quality of ground water and ensuring water conservation measures. Further, despite the widespread violations, CGWA issued (2013-18) show cause notices to only 99 project proponents. This indicated that CGWA was unable to strictly and effectively impose the conditions subject to which NOCs were granted.

DoWR,RD&GR stated (September 2020) that CGWA had initiated taking action with effect from November 2019 to impose penalty on the proponents who failed to comply with the conditions specified in the NOC.

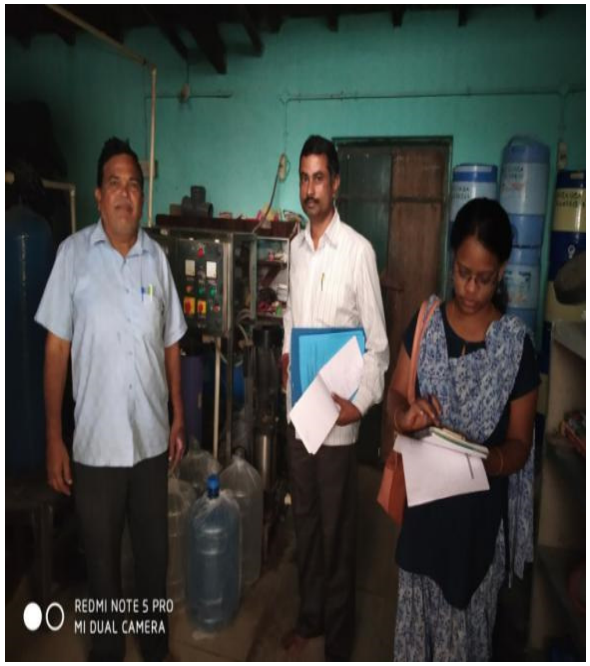
3.10.2 Specific cases observed by Audit

A few specific cases are discussed below.

3.10.2.1 Andhra Pradesh

The Ground Water and Water Audit Department rejected (February 2016) the application of Sai Ganga Water Care R.O. Plant, Guntur for permission to extract ground water on the ground that the proposed plant was located in a residential area and that ground water extraction for sale was not permitted. However, during field visit, Audit observed that the unit was operating and extracting ground water illegally in violation of APWALTA Rules. This is due to lack of an effective mechanism to detect such activities.

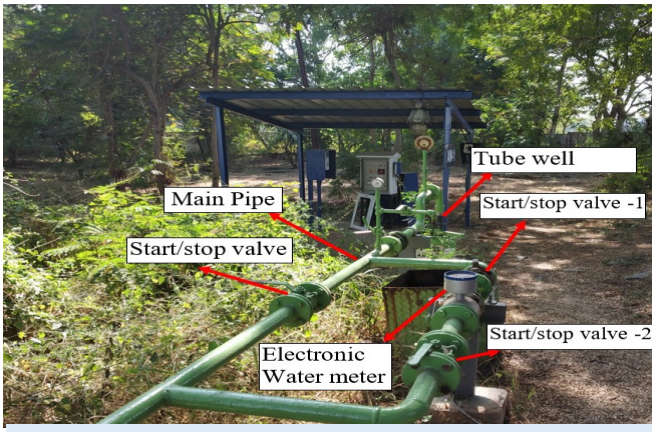
Andhra Pradesh Ground Water and Water Department stated that this violation was to be regulated by Tahasildar of concerned Mandal.



Illegal extraction of ground water by Sai Ganga Water Care R.O. Plant, Guntur

3.10.2.2 Gujarat

(i) Violation of multiple conditions of NOC by water intensive unit



Operation of Tube well by-passing water flow meter

NOC was granted (October 2016) to M/s Huntsman International (I) Pvt. Ltd., a manufacturer of dyes (water intensive unit) situated in Vadodara district for abstracting ground water of 2,000 cubic meter/day (and not exceeding 7,30,000 cubic meter/year) through seven shallow tube wells (in depth range of 40 to 70 m). Two existing tube wells were to be converted to piezometers for deeper ground water aquifer monitoring. In all, the firm was to install four to five piezometers to measure ground water levels on monthly basis.

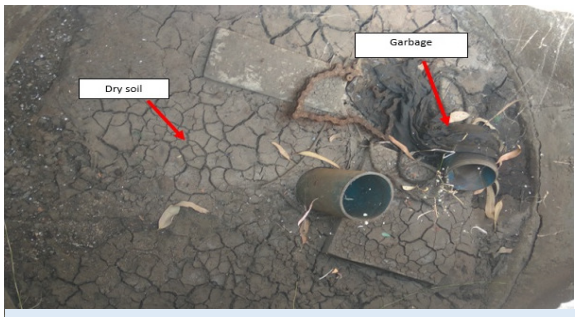
During joint site visit (December 2018) Audit observed that the unit had constructed seven tube wells within the factory premises in such a way that ground water was being extracted without metering. Further, the firm did not convert the two existing tube wells into piezometers for deeper ground water aquifer monitoring, as required in the conditions of the NOC but was instead extracting ground water from them without installing water flow meter. Also, the firm had installed only three piezometers within the factory premises against the required four to five piezometers and did not monitor ground water level data on monthly basis.

Tube wells being operated without installing water flow meter

The firm was also required to construct water recharge structures and adopt two to three villages for Water Security Plan in Vadodara District as mandated in the NOC. The firm neither took initiatives for implementing Water Security Plan nor constructed water recharge structures. The firm had constructed only one rain water harvesting structure in the premises of a primary school in one village in July 2018. Thus, the firm violated most of the conditions stipulated in the NOC.

(ii) Non maintenance of rain water recharge structures

NOC was granted (November 2014) by CGWA to M/s Rohan Dyes & Intermediates Ltd., a manufacturer of chemical products situated in Anand district for extraction of ground water of 666 cubic meter/day (and not exceeding 2,29,770 cubic meter/year). The unit was required to implement rain water harvesting and ground water recharge measures of 1,18,057 cubic meter/year.



Water Recharge pit

The unit had proposed to install four recharge tube wells of 100 meter depth in its premises for recharging by rain water. As per design of recharge structure, the upper layer of recharge pit would be covered with coarse sand layer and the second layer would be gravel pack filter.

During joint visit (January 2019) of the unit premises, Audit found that the firm had constructed only two number of recharge tube wells. The recharge pits were also not being maintained properly as vegetation, dry soil, garbage and mud layer was seen on the upper layer instead of coarse sand layer.

Due to non-maintenance of proper recharge structures the extent of fresh water recharge, if any, and compliance with the condition in the NOC could not be ascertained.

3.10.2.3 Haryana

As per terms and conditions of NOC, units were required to undertake artificial recharge of ground water through Roof Water Harvesting System (RWHS) in the premises within 45 days of issuance of NOCs and confirm the construction of RWHS to the Authorised Officer for verification. During physical verification of the sites of 10 units, Audit found that these units had not constructed RWHS as required. In another six units inspected during February to May 2018, RWHS were found to be not maintained properly.

Muddy structure at R.C. Sood and Co. Private Limited, Faridabad

Water logged structure at RPS Infrastructure, Faridabad

Bushes/grass at M/s Continental Devices, Faridabad

Leaves and mud in RWH structure at Food Corporation of India, Faridabad

Muddy and water logged RWH structure at Apparel Export Promotion Council, Faridabad

Bushes at BKN Government Polytechnic, Mahendergarh

3.10.2.4 Karnataka

The District Ground Water Authority granted permission (October 2017) to M/s Embassy One Developers Private Limited, Bengaluru for drilling 10 bore wells. The firm had constructed two 30 storey towers on a 6.5 acre plot in Bengaluru. The bottom of the lower basement under both the blocks was below ground water level due to which the lower basement floor was subjected to water pressure and subsequent seepage.

As per the Consultant report[58] (January 2017), total ground water desired to be pumped out per day was stated to be 1,213 cubic metre per day. Water accumulated around the building structure was collected at the collection sumps and 500 cubic metre per day was being dewatered through the process of comprehensive sub-soil drain system.

It was specified in the NOC that the water coming out of de-watering should be put to productive/effective use. However, joint inspection by Audit revealed that the collected water was pumped and lifted to the water storage tanks and after the tanks were filled, the water from the collection sumps overflowed to the drain. This was contrary to the condition specified in the NOC and resulted in improper utilisation and wastage of water in a notified/over-exploited area.


Water over-flowing from storage tanks

3.10.2.5 Madhya Pradesh

In 10 sampled infrastructure projects, Audit observed that four of these infrastructure projects had not obtained CTO from Madhya Pradesh Pollution Control Board (MPPCB).

After being pointed out by Audit, MPPCB stated (December 2018) that court cases had been filed against three project proponents and in one case pertaining to M/s Sukhsagar Medical College and Hospital Jabalpur, the Regional Officer, Jabalpur had been directed to initiate court proceedings for operating the projects without obtaining CTO from MPPCB.

3.10.2.6 Odisha

CGWA accorded (July 2017) NOC to M/s Jai Laxmi Agro Foods Pvt. Ltd, Cuttack, a proposed Agro Based Food Products manufacturing unit, for abstraction of ground water. As per condition in the NOC, the firm was permitted to extract ground water of 90 cubic metre per day and 28,300 cubic metre per year through two bore wells. No

[58] The bottom of the lower basement was below Ground Water level. Because of this it was subjected to water pressure and hence seepage. Therefore, the Company had engaged consultant to undertake studies and to derive a comprehensive dewatering system so as to keep the Ground Water level below the lower basement system.

additional ground water abstraction structures were to be constructed for this purpose without prior approval of CGWA.

During site inspection by the Audit Team (February 2019) it was found that the firm had also constructed one dug well for which approval of CGWA was not taken. The bore wells and dug well were not fitted with water meter and log books were also not maintained. As such, quantity of ground water extracted by the unit could not be ascertained. The firm had also not installed any piezometer and also not been monitoring quality data both for pre-monsoon and post-monsoon periods as per condition of the NOC. Action taken report in respect of implementation of NOC conditions was to be submitted to CGWA within one year but the firm had not submitted any action taken report to CGWA. In its proposal for NOC, the firm had proposed for construction of one infiltration basin (pond) for rain water harvesting and to use it for plant work. However, the firm did not construct such infiltration pond for rain water harvesting. Further, the project also did not adopt any nearby villages for implementation of water conservation measures.

Dug well constructed without permission of CGWA

Bore wells without piezometer and water meter in Odisha

Regional Director, Bhubaneshwar stated that appropriate action as per the existing guidelines would be initiated at the earliest.

3.10.2.7 West Bengal

Tube well at Haldia Petrochemicals

The State Ground Water Authority (SWID) issued four permits (April 2017) to M/s Haldia Petrochemicals situated in a notified area in Purba Midnapore district to install four tube wells for abstraction of groundwater at the rate of 100 cubic meter per day per tube well. Ground water abstraction was permitted only for the period from 15th March to 15th July every year. There were conditions for installation of water meter, implementation of rooftop rain water harvesting structure, submission of water quality reports to SWID annually. However, there was no provision for installation of Piezometer, AWLR, water quality monitoring of pre monsoon and post monsoon, renewal of permits, installation of Sewage/Effluent Treatment Plants, submission of drilling details to SWID, etc.

During the joint site visit (June 2018), it was noticed that the firm had constructed four tube wells but had not installed water meters and also did not maintain log books. As such, the quantity of ground water abstracted by the firm per day and the period when extracted could not be ascertained. The firm did not submit any water quality report to SWID. No rain water harvesting structure was implemented; rooftop rain water was being stored in an existing reservoir. In absence of Piezometer, season-wise fluctuation of ground water level also could not be ascertained.

DoWR,RD&GR stated (October 2019) that human resource constraints had affected CGWA from putting in place a mechanism for monitoring of NOC conditions by proponents in general, except in cases for renewal, where site inspections were being carried out.

Audit also noticed good practices being followed by some of the project proponents, which are highlighted in Box 3.4.

Box 3.4: Good practices by project proponents

Andhra Pradesh
During physical verification in mining unit M/s RBSSD & FN Das, it was found that the unit had maintained a green belt in the form of plantation of trees covering an area of 40,000 sq. m and planted about 4.50 lakh grass seeds. In addition, the unit also maintained 1,250 m of garland drains and 1,375 m of retaining wall to prevent soil erosion from over-burdened dump.
Assam
During physical verification of M/s Ajanta Pharma Limited, which was granted NOC by CGWA in November 2016, it was seen that the industry had complied with all the conditions specified in the NOC viz., abstraction of ground water as per the NOC, maintenance of log book indicating abstraction of ground water, fitting of water meter with tube well, installation of piezometers for water level

monitoring, construction of rain water harvesting structure, STP/ETP treatment plant for reuse of waste water. Besides, the industry also submitted compliance report to the Regional Director, CGWB, NER as per the NOC.

ETP at M/s Ajanta Pharma Limited

Rainwater harvesting structure

Madhya Pradesh

During joint site inspection of M/s Udaypur Beverages, Ltd, Jabalpur, a water-intensive industry, the unit was found to comply with all the conditions mentioned in the NOC. The plant is equipped with ETP and STP facility and is reusing and recycling the treated effluent water for in-house gardening, irrigation, cleaning and for use in utilities like boiler, cooling towers and washers. All the wells were found to be fitted with water meters and piezometers with ALWR to ensure monitoring of ground water abstraction. The unit had also implemented ground water recharge measures. Sixteen rainwater harvesting structures were found to have been constructed and properly maintained with zero discharge of water outside the premises. The project proponent had carried out de-silting and rejuvenation of Bilpura Pond located in the vicinity of the Project, resulting in augmentation of ground water resources of the area. The project proponent had taken environmental initiatives by planting more than four thousand plants and trees in the surrounding area of the project and maintained the green belt. Result-oriented efforts of the industry to preserve sustainable development and promote water conservation measures have been duly recognised by Government of Madhya Pradesh through award of *Paryavaran Puruskar* for the year 2014-15 and various appreciation awards.

Well maintained structures at M/s Udaypur Beverages, Ltd, Jabalpur

3.11 Other issues -Registration of drilling rigs and bore wells

10 States/UTs[59] had established a mechanism for registration of drilling rigs and boring wells used for extraction of ground water. This is a good practice, as it serves to keep a record of the number of drilling rigs or boring wells deployed and the extent of drilling activities undertaken in the State. Audit however, observed deficiencies in five States/UTs in implementation of this mechanism as mentioned in Table 3.9 below.

Table 3.9: Deficiencies in mechanism for registration of drilling rigs

Sl. No.	State	Remarks
1.	**Chandigarh**	As per Guidelines issued by the Hon'ble Supreme Court in August 2010, registration of all drilling agencies with the District Administration/Statutory Authority was mandatory. However, the UT Administration had not registered any drilling agency.
2.	**Delhi**	The National Capital Territory (NCT) of Delhi regulates ground water through notification of July 2010, issued by the Environment Department with the approval of the Honourable Lt. Governor, which was amended in January 2014. The terms and conditions of the amended notification of January 2014 provided for mandatory registration of all the drilling machines/rigs utilised for boring purposes with the office of Divisional Commissioner/ Deputy Commissioner (Revenue). Amended notification further provided that the movement of drilling machines/rigs should be allowed for specified purpose/ place and duration by the concerned Deputy Commissioner (Revenue) offices. However, no drilling agency was registered with Deputy Commissioner's offices and there was no check on the movement of drilling machines as required under the notification of January 2014.
3.	**Karnataka**	As per Rule 10 (2) of Ground Water Rules 2012 of the State, the drilling agencies are required to furnish monthly information regarding location, date and number of bore wells drilled with depth, casing and yield of each bore well. However, only 55 out of 131 drilling agencies had submitted this information.
4.	**Maharashtra**	Maharashtra Ground Water (Development and Management) Act, 2009, stipulated registration of drilling rig owners and operators in the State. However, in the absence of rules, these provisions in the Act were not implemented.
5.	**Telangana**	The rig owners/operators were instructed to submit monthly progress reports containing details of drilling works taken-up, to the Ground Water Department. However, all the 153 registered rig operators in test checked districts (i.e. Rangareddy, Warangal (Urban), Gadwal and Nizamabad) did not submit these reports.

In the above States/UTs, due to lack of registration of the drilling agencies and non-receipt of periodic reports on drilling activities, the extent of drilling work undertaken for abstraction of ground water could not be ascertained which defeated the purpose of establishing such mechanism to regulate drilling activities.

[59] Chandigarh, Delhi, Goa, Himachal Pradesh, Karnataka, Kerala, Maharashtra, Puducherry, Rajasthan and Telangana.

In 12 States/UTs[60], there was no mechanism for registration of drilling rigs[61] or boring wells used for extraction of ground water. In the absence of such mechanism, there was scope for unregulated extraction of ground water. No information was available in respect of the remaining 11 States/UTs.

In the revised guidelines (September 2020), CGWA has introduced a provision whereby State/UT Governments shall be responsible for registering drilling rigs operating within their jurisdiction and for maintaining the database of wells drilled by them.

3.12 Conclusion

CGWA has been granted the powers to regulate and control ground water in the country but consents for operation of various projects are granted by multiple agencies such as Pollution Control Boards, Bureau of Indian Standards, Food Standard and Safety Assessment of India, etc. A linkage between the consents granted by these agencies and CGWA for those projects requiring ground water abstraction was missing, due to which many of the units granted consents by these other agencies were operating without obtaining NOC from CGWA.

There were delays in issuing of new NOCs and renewal of existing NOCs by CGWA. A total of 10,758 applications for grant of NOC were pending for periods ranging between 90 days to three years. Similarly, 144 applications for renewal of NOCs were pending with CGWA for periods exceeding three years.

Though CGWA has issued comprehensive guidelines for evaluation of proposals for grant of No Objection Certificate (NOC) for abstraction of ground water, prescribed conditions to be followed by the project proponents after receipt of NOC, sustainable utilisation of ground water, recharge measures, etc., these guidelines were not implemented effectively.

CGWA has also been conferred with the powers to resort to penal provisions to those who failed to comply with its directions. However, this was not implemented strictly, as widespread violations of the conditions mentioned in the NOCs were found during site inspection of the project proponents, such as illegal extraction of ground water, non-installation of water flow meters, improper maintenance of rainwater recharge structures, absence of monitoring of water quality data, etc. During 2013-18, CGWA had issued show cause notices to only 99 project proponents.

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[60] Assam, Bihar, Chhattisgarh, Gujarat, Jharkhand, Lakshadweep, Madhya Pradesh, Manipur, Meghalaya, Punjab, Tamil Nadu and Tripura.

[61] Drilling rigs are structures housing equipment used to drill water wells, oil wells, or natural gas extraction wells.

3.13 Recommendations

1. Central Ground Water Authority and State agencies need to develop effective coordination with various other agencies granting consents to projects to ensure that the requisite permissions to extract ground water are also obtained.
2. Central Ground Water Authority and State agencies may develop a mechanism to ensure timely processing of requests for ground water extraction.
3. Central Ground Water Authority and State agencies need to establish a system for periodic inspections and review of the projects to ensure compliance to the conditions mentioned in the No Objection Certificates.
4. Central Ground Water Authority and State agencies need to enforce penal provisions strictly as per the Environment Protection Act/State Acts/Rules against the cases of violation of conditions mentioned in the No Objection Certificates for effective ground water regulation.