

**GOVERNMENT OF INDIA**  
**MINISTRY OF JAL SHAKTI**  
**DEPARTMENT OF WATER RESOURCES, RD & GR**  
**CENTRAL GROUND WATER AUTHORITY**  
**18/11, JAMNAGAR HOUSE, MANSINGH ROAD, NEW DELHI — 110011**  
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**Minutes of Fifth Meeting of the Expert Appraisal Committee held on 08.10.2021 through video conferencing.**

Fifth meeting of the Expert Appraisal Committee was held on 18.10.2021 online through video conferencing to consider the applications for grant of No Objection Certificates for abstraction of groundwater as per the guidelines.

List of participants is enclosed.

Member, Central Ground Water Authority welcomed all the members of the committee.

**Agenda Item No. 5.1: Confirmation of the Minutes of fourth meeting of the Expert Appraisal Committee held on 17.09.2021**

As no comments were received from the members on the minutes of fourth meeting held on 17.09.2021, the same were confirmed.

**Agenda Item No. 5.2: Recommendation of proposals presented during 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> meetings of EAC.**

A presentation on responses received from the project proponents on the observations made by the EAC during its for 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> meetings was made by Dr. Uma Kapoor. The following proposals were approved:

**1<sup>st</sup> EAC**

<b>S.No.</b>	<b>Application Name</b>	<b>Application number</b>	<b>Quantum approved (m<sup>3</sup>/day)</b>
1.	M/s Varun Beverages	21-4/20/RJ/IND/2015	495
2.	M/s Torrent Power Ltd	21-4/3970/GJ/IND/2018	8020
3.	M/s Bridgestone India Pvt Ltd	21-4/793/MP/IND/2019	194 for 10 days

**2<sup>nd</sup> EAC**

<b>S.No.</b>	<b>Application Name</b>	<b>Application number</b>	<b>Quantum approved (m3/day)</b>
1.	M/S. SUREEL ENTERPRISE PRIVATE LTD	21-4/1739/GJ/IND/2017	129
2.	M/s DANOO TEXTILE PROCESSING CO	21-4/2797/GJ/IND/2017	310
3.	M/s KAJARIA CERAMICS LTD. (UNIT-I)	21-4/1255/RJ/IND/2017	574
4.	M/s KAJARIA CERAMICS LTD. (UNIT-II)	21-4/5395/RJ/IND/2017	130
5.	M/s TORRENT PHARMACEUTICALS LTD - RESEARCH AND DEVELOPMENT CENTRE	21-4/2291/GJ/IND/2017	305

**3<sup>rd</sup> EAC**

<b>S.No.</b>	<b>Application Name</b>	<b>Application number</b>	<b>Quantum approved (m3/day)</b>
1.	M/s . KJS Cement (I) Ltd	21-4/886-MP/MIN/2019	294
2.	M/s. Deedy Chemicals Pvt. Ltd	21-4/1947/GJ/IND/2017	127
3.	M/s. Gujarat Microwax Pvt. Ltd.	21-/3288/GJ/IND/2017	338

### **Agenda Item No. 5.3: Appraisal of Impact Assessment Reports by the committee**

The Agenda Items were then taken up for discussion and the agenda were presented by the Consultants of the respective Project Proponents of 9 projects.

#### **5.3.1 M/s Hindustan Coca- Cola Beverages Pvt. Ltd, Patliputra, Bihar. Application No. : 21-4/210/BR/IND/2016 (Renewal)**

This is an existing Industry located in E-1 Industrial Area, Patliputra, Bihar, which falls under Semi Critical category.

The area forms a part of the Gangetic plains underlain by thick alluvial deposits. The area is characterized by a monotonously flat relief. In general, the western part of the district is sloping due north and north-east, with elevation of the land surface varying from 68 m in the south to 48 m in the north, and from 67 m in the west to 45 m in the east. A notable geomorphic feature is the strong natural levee formation or upland all along the southern bank of the Ganga which acts as a natural barrier thereby causing many of the streams flowing from south to run parallel to the course of Ganga before finally joining it further east of the Patna district boundary

The available data indicates presence of two layer aquifer system up to 200m, bgl separated by lenticular beds of clay ranging in thickness from 3 to 20 m. The deeper aquifer is made up of medium to coarse grained sand often grading to gravelly sand at the bottom. Ground water occurs in unconfined to semi confined condition. General ground water flow is from north to south. However, at places due to local elevation and troughs of ground water table, flow is in the reverse direction towards river Ganga.

Overall depth to water level in the area is >20 mbgl. Decadal ground water level data shows declining trend in most of the observation wells located in urban parts. Ground water quality is potable.

Water audit has been conducted, wherein it has been suggested to increase condensate recovery from the boiler and for cleaning purposes loses, water air pressure guns have been recommended in place of hose pipes.

Industry has requested to grant NOC for withdrawal of 173 kld through 2 existing bore wells only.

The following observations were made by the Members:

- As per water balance chart, waste water flows to the drain it was suggested that revised water balance recycling or reuse of treated waste water be submitted.

**Decision: The NOC was approved. Proponent shall submit the revised report incorporating revised water balance chart within 15 days' time.**

**5.3.2. M/S Mahavir Coal Washeries Private Limited., village Belmundi – Sakkara, Block-Takhatpur, District-Bilaspur of Chhattisgarh. Application No. 21-4/429/CT/IND/2017 (Renew)**

M/s Mahavir Coal Washeries Private Limited is an existing mining and applied for the Renewal of NOC , located at village Belmundi – Sakkara, Block-Takhatpur, District-Bilaspur of Chhattisgarh State and commissioned the 0.95 MTPA wet process based coal washery in 19.8 acre Land.

The area falls in semi-critical category. Ground water occurs in both shallow and deep aquifer. The shallow aquifers of the study area occurs upto depth of 30 m. The configuration of water table in the shallow aquifer follows the topography due to which the ground water movement is generally towards valleys or topographic low. The recharging bodies such as tanks, canals and streams also influence the occurrence and movement of ground water in shallow aquifers. The shallow aquifers of the area are mostly developed by way of dug wells in the area whose depth varies from 7 to 16 m. In general the yield of dug wells ranges from 25 to 40 m<sup>3</sup> /day. Deep aquifer system in the area mainly formed by the Raipur group of rocks mainly Maniyari, Hirri and Tarenga formations which comprises of limestone and shale. The deep aquifers of the area are mostly developed by way of bore wells in the area whose depth varies from 40 to 120 m. In general the yield of bore wells ranges from 1 to 5lps. The potential fractures for boreholes up to 100mbgl depth in the area are recorded at various depths i.e. 40-45, 60-65, 75-80mbgl and are 3 to 4 in numbers. Major flow of ground water is from east to west. Pre-monsoon water level varies from 1.7 to 15.99 mg/l. Wells around the study area show declining trend from 2011-2017 due to poor rainfall and rise from 2017- 2020 due to increase in rainfall, as well as reduction in ground water abstraction.

Industry has requested to grant NOC for withdrawal of 250 m<sup>3</sup>/day groundwater for industrial use through 02 proposed BWs and 02 existing BWs only.

The following observations were made by the members:

- As there is no requirement of ground water modelling, revised IAR has to submitted without ground water modeling .

**Decision: The NOC was approved. Proponent shall submit the revised report within 15 days' time.**

**5.3.3 M/s. Kesla - II Limestone Mine (Auction Block) Of Dalmia Cement (Bharat) Limited, Villages: Kesla, Tehsil: Tilda, District: Raipur, Chhattisgarh Application No.: 21-4/2897/CT/MIN/2019**

This is a proposed mine located in Village: Kesla, Tehsil: Tilda, District: Raipur, Chhattisgarh which falls under Over-Exploited category. Ground water requirement of the mine is to 293.40m<sup>3</sup>/day or 88020.00m<sup>3</sup>/year through 4 proposed structures

out of which 100m<sup>3</sup>/day through 2 proposed BWs and rest 193.40m<sup>3</sup>/day through 2 proposed mining pits.

Limestone and Dolomite of Chandi formation form the principal aquifers in the area having specific yield in the range of 50-100 KLD. Groundwater occurs at a relatively shallow depth. The survey has revealed that the conventional mode of tapping groundwater in the area is shaft well puncturing the weathered zone and penetrating the hard rock only up to very shallow depth. Consequently, only the subsoil water stored in weathered and jointed zones under water level conditions are tapped. This water is annually replenished by precipitation during the months of July to October, when the depth to water in wells is very near the surface. However, with the advance of summer water level descends rapidly and by April-May many of the shallow wells go dry to near dry creating water shortage even for domestic purposes. Ground water flow is generally towards south-east direction. Depth to water level in the area is generally 8 mbgl during pre-monsoon and 6 mbgl during post monsoon.

The following observations were made by the Members: firm has to submit following revised details;

- Specific yield doesn't have any units.
- Flow direction map may be revised.
- Water table contours and flow direction have to be marked in Hydrogeological map
- Depth to water level map- contours intervals may be revised (0-2, 2-5, 5-10, 10-20, 20-40 and >40)
- Background information in Water quality map
- Evaporation losses of 20% are on higher side
- Gradient map should be removed from the report
- Recalculate seepage based on revised water table contour map

**Decision: The NOC was approved. Proponent shall submit the revised report within 30 days' time.**

**5.3.4 M/s. Narmada Drinks Pvt. Ltd. Plot No. 1,2,5,6 And 7, Sector B,, Sirgitti Industrial Area, Bilaspur, Chhattisgarh ,Application No.: 21-4/318/CT/IND/2016.**

This is an existing Industry located on Plot No. 1,2,5,6 And 7, Sector B, Sirgitti Industrial Area, Bilaspur, Chhattisgarh which falls under Semi critical category. Ground water requirement of the mine is to 750m<sup>3</sup>/day [2,73,750m<sup>3</sup>/year] through 04 existing BWs only. The areas is characterized by presence of laterites which occur as capping over carbonate formations of Chhattisgarh super group.

The shallow aquifers of the study area occur within an average depth of 25 m. The configuration of water table in the shallow aquifer follows the topography due to which the ground water movement is generally towards valleys or topographic lows. The water bodies such as tanks, canals and streams act as recharging source and also influence occurrence and movement of ground water in shallow aquifers. The shallow aquifers in the area are mostly developed by dug wells of depths varying from 8 to 20 m. In general, yield of dug wells ranges from 40 to 100 m<sup>3</sup>/day. Deeper aquifer system in the study area comprises of limestone and shale of Tarenga and Hirri formations of Raipur group. The deeper aquifers of the area are mostly developed by way of bore wells of depths varying from 60 to 80 m below ground level. In general, the yield of bore wells ranges from 1 to 5 lps. Ground water flow is towards south-east. Overall depth to water level in the area varies from 1.2 to 10.4 mbgl. Water quality is generally portable.

The following observations were made by the Members:

- Kinks were noticed in depth to water level map Contours should be smooth without kinks. Map may be revised.
- Hydrographs should be revised based on decadal water level data.

**Decision: The NOC was approved. Proponent shall submit the revised report within 15 days' time.**

**5.3.5 M/s Chirimiri Underground Coal Mine Project, block KHADGAWANA, district KOREA CHHATTISGARH Application No. - 21-4/3812/CT/MIN/2020 (New).**

This is an existing mine located in Chirimiri (M.Corp), Block -Khadgawana, District Korea, Chhattisgarh, which falls under safe category.

The area is marked by high hills with steep scarp faces and deep gorges along the course of streams. The ground has a general slope towards south. The Project area is situated on Barakars Formation comprising sandstone of different grain sizes with shale beds and coal seams .The sandstone is saturated and behaves as aquifers, whereas Shale and coal seams act as aquicludes. The permeable sandstone beds intercalated with shale and coal seams behave as individual hydro-geological units and form a multi-layered aquifer system. The formation, comprising mainly alluvium, loosely cemented and poorly consolidated sandstone, with a maximum thickness of

about 40 m, lying above the top-working seam (Seam I) behaves as unconfined aquifer. Whereas, the aquifer units lying between lower seams (i.e. Seam-I and II) and below behave as semi-confined to confined aquifers. These lower formations, consisting of compact and medium to coarse-grained sandstone with secondary porosity, behave as semi confined to confine in nature. In the unconfined aquifer ground water moves laterally through the intergranular pore spaces in the sandstone. Whereas, in lower aquifers the groundwater movement is restricted mainly through joints and fractures (i.e. secondary porosity). With intercalation of shales and carbonaceous shale beds permeability reduces with depth in the lower aquifers which are very poor in potential

The ground water requirement is 131.00 (m<sup>3</sup>/day) through 1 existing well for 0.01 cum per day demand from abstraction structure , 2 existing mine dewatering structure and 1 proposed mine dewatering.

The following observations were made by the Members:

1. T and K values are too low. These values may be checked from CGWB data and seepage may be re-estimated. Data of CGWB may be used for long term trend analysis.
2. Map has to be shown for 10 Km. radius.
3. Ranges of water level contour maps were not proper.

**Decision: The NOC was approved. Proponent shall submit the revised report within 30 days' time.**

**5.3.6 M/s Hopewell Tableware Pvt. Ltd., Village-Balekhan, Gram Panchayat-Anantpura Chimanpura, Tehsil-Chomu, District-Jaipur, Rajasthan, Application No.: 21-4/5594/RJ/IND/2017 (New)**

This is an existing industry located in Village-Balekhan, Gram Panchayat-Anantpura Chimanpura, Tehsil-Chomu, District-Jaipur, Rajasthan which falls under Over Exploited category as per GWRE 2017. The ground water requirement of the industry as per NOC application is 120m<sup>3</sup>/day for 365 days 43,800m<sup>3</sup>/year through 01 existing and 01 proposed BWs only.

The area is underlain by alluvial formation comprising of mainly sand, silt and clay. Ground water in the area occurs under unconfined conditions in phraetic zones and under semi confined conditions in the deeper zones in Quaternary sediments as well as hard rocks which are major water bearing formations. Yield of the wells ranges between 40 to 300 m<sup>3</sup> /day with a drawdown of 2 to 6 m. Yields of the wells are mainly dependent upon the depth of the wells and total thickness of zone tapped. The areas occupied by residuum in pockets have good to moderate yield up to a depth of 90 to 100m. In general, yield of well tapping fine to medium alluvial sand is more, as compared to wells tapping silt and kankars. Cavity tube wells usually

tapping top alluvial sand are also common ground water structures being used in the study area for irrigation purposes. Discharge of these wells varies from 80 to 400 m<sup>3</sup>/day. Ground water flow is from east to west.

The following observations were made by the Members:

- Water use efficiency has to be enhanced which can reduce water requirement by 20-30%.
- Revised water balance chart giving details of consumptive use may be submitted.
- The proponent should come up with plan for reducing evaporation losses at the time of renewal.

**Decision: The NOC was approved. Proponent shall submit the revised report within 15 days' time.**

**5.3.7 M/S Ultra Tech Cement Ltd.(Unit Birla White), in Village-Mandiyana, sub district- Khamnor , District: Rajsamand Rajasthan Application No. : 21-4/13529/RJ/IND/2019**

This is a new Industry located in Village-Mandiyana, sub district- Khamnor , District: Rajsamand Rajasthan, which falls under Critical category. The ground water requirement is 150 kld for 330 days (48750 kly) from 3 existing BW and 1 proposed BW.

The district has generally undulating topography with hills of Aravalli Ranges unevenly scattered all over the area. The eastern part of the district covering Railmagra and part of Amet Tehsils are mostly plain with few isolated hillocks. The district has a well developed drainage system with ephemeral rivers viz. Banas, Khari, Gomti, Chandra-Bhaga and Kothari. Rajsamand district is covered mainly by the rocks belonging to Archaean Bhilwara Super Group and Proterozoic Aravalli and Delhi Super Groups consisting mostly of the Schists and Gneisses. Yield of wells varies from 30-50 m<sup>3</sup>/day. Ground water movement mainly takes place through fractures and joints of crystallines. Ground water flow is from north-west to south-east. Depth to water level varies from 2.42 to 21.6m.

The following observations were made by the Members:

- Report to be submitted with revised hydro geological maps.
- Formation contact should not be on straight line.

**Decision: The NOC was approved. Proponent shall submit the revised report within 15 days' time.**



**5.3.8 M/S Panasonic Life Solutions India Pvt. Ltd, in SIDCUL, Salempur Mahdood, Block Bahadrabad, Haridwar Uttrakhand. Application No. : 21-4/723/UT/IND/2017 (Renewal)**

This is an existing industry (proposal is for expansion program), located on Plot no. 4, Sector 11 in Sidcul, Salempur Mahdood, Block Bahadrabad, Haridwar (Uttrakhand) which falls under Semi-critical category . Ground water requirement of the industry is 149.75 kld through 3 existing tube wells only.

The ground water conditions in alluvial parts of study area are considerably influenced by the varying lithology of the subsurface formations. The fluvial deposits of Gangetic Plains exhibit significant variations, both laterally and vertically. The main source of water, which sustains groundwater in the area, is rainfall. The other sources of groundwater replenishment are infiltration from canals and irrigation return flow. The common ground water abstraction structures in area are shallow and deep tubewells. The ground water levels in the area vary from 16.00 mbgl to 55.60 mbgl. The ground water flow direction varies widely in the area due to presence of drains and ground water draft in the adjoining area. In general ground water movement is from north to south. In the western part of study area hydraulic gradient is steep while in northern and southern parts, it is gentle which follows the general topography of the area. The analysis of data indicates that the water levels after year 2014 are erratic which may be due to change in observation well or any other reason. Therefore trend of year 2004 to year 2013 has been considered for interpretation of long term trend. The declining trend has been recorded in the observation well at Bahadrabad village which is 0.045 m/year in pre-monsoon and 0.003 m/year in post-monsoon which is not significant. This declining water level trend can be attributed to annual fluctuation in rainfall.

The following observations were made by the Members:

- Surface elevation map to be revised showing elevation of Siwalik's.
- Location of prominent places, major drainage and transport network to be incorporated in geological map.
- Hydrograph has to be modified. Major locations may be shown in the depth to water level map.
- Fluoride –Nitrate have to be shown as point values.

**Decision: Proposal was approved subject to submission of revised report within 15 days' time.**

**5.3.9 M/S Panasonic Life Solutions India Pvt. Ltd. SECTOR 8B, SIDCUL, Haridwar, Uttarakhand. Application No. : 21-4/724/UT/IND/2017 (Renewal)**

Project is located at Plot No. 1a/1b,, Sector 8b, Sidcul, Haridwar, Uttarakhand. Ground water requirement of the industry is 308.60 kld through 5 existing bore wells only.

The ground water conditions in alluvial parts of study area are considerably influenced by the varying lithology of the subsurface formations. The fluvial deposits of Gangetic Plains exhibit significant variations, both laterally and vertically. The main source of water, which sustains groundwater in the area, is rainfall. The other sources of groundwater replenishment are infiltration from canals and irrigation return flow. The common ground water abstraction structures in area are shallow and deep tubewells. The ground water levels in the area vary from 16.00 mbgl to 55.60 mbgl. The ground water flow direction varies widely in the area due to presence of drains and ground water draft in the adjoining area. In general ground water movement is from north to south. In the western part of study area hydraulic gradient is steep while in northern and southern parts it is gentle which follows the general topography of the area.

The analysis of data indicates that the water levels after year 2014 are erratic which may be due to change in observation well or any other reason. Therefore trend of year 2004 to year 2013 has been considered for interpretation of long term trend. The trends of ground water levels for 10 (ten) years from this observation well is given in fig. 2-4. The declining trend has been recorded in the observation well at Bahadrad village which is 0.045 m/year in pre-monsoon and 0.003 m/year in post-monsoon which is not significant. This trend of declining water level can be attributed to annual fluctuation in rainfall. The ground water levels in the area vary from 16.00 mbgl to 55.60 mbgl. The ground water flow direction varies widely in the area due to presence of drain and ground water draft in the adjoining area. In general Ground water movement is from north to south. In the western part of study area hydraulic gradient is steep while in north, south & and east it is gentle which follows the general topography of the area.

The following observations were made by the Members:

- Surface elevation map to be revised showing elevation of Siwalik's.
- Location of prominent places, major drainage and transport network to be incorporated in geological map.
- Hydrograph has to be modified. Major locations may be shown in the depth to water level map.
- Fluoride –Nitrate have to be shown as point values.
- Report to be submitted with revised water balance chart. STP/ETP should be installed to recycle and reuse treated waste water.

**Decision: Proposal was approved subject to submission of revised report within 15 days' time.**

The meeting ended with vote of thanks to the Chair.

## **LIST OF PARTICIPANTS**

### **MEMBERS OF THE COMMITTEE:**

1. Shri P. Nandakumaran, Chairman, CGWB
2. Shri A. Sudhakar, Divisional Head, WQM I Division, CPCB.
3. Shri KD Bhardwaj, Regional Director, NPC.
4. Shri Motipalli Ramesh, Scientist 'E', Wetland Division, MoEF&CC.

### **Other Officers**

1. Shri Sunil Kumar, Member, CGWA.
2. Dr. Uma Kapoor, Consultant, CGWA
3. Dr. P. K. Naik, Scientist 'D', CGWA
4. Dr. Rajesh Chandra, Scientist 'D', CGWA
5. Dr. Rakesh Kushwaha, Scientist 'D', CGWA
6. Shri Ashok Patre, Scientist 'D', CGWA
7. Shri Anmol Sharma, Scientist 'C', CGWA
8. Mrs. Khushboo Anand, Scientist 'B', CGWA
9. Mrs. Aditi Bhatt, Scientist 'B', CGWA.
10. Shri. Lalatendu Behara, Scientist 'B', CGWA
11. Shri M. Goutham, Scientist 'B', CGWA.

**List of Project Proponents:**

Sl.No	Application No.	Name Of Industry
1	21-4/429/CT/IND/2017	M/S Mahavir Coal Washeries Private Limited
2	21-4/2897/CT/MIN/2019	M/s Kesla - II Limestone Mine (Auction Block) Of Dalmia Cement (Bharat) Limited
3	21-4/5594/RJ/IND/2017	M/s Hopewell Tableware Pvt. Ltd.
4	21-4/318/CT/IND/2016	M/s Narmada Drinks Pvt. Ltd. Bilaspur
5	21-4/3812/CT/MIN/2020	M/s Chirimiri Underground Coal Mine Project
6	21-4/724/UT/IND/2017	M/s Anchor Electricals Pvt.Ltd.
7	21-4/210/BR/IND/2016	M/s Hindustan Coca- Cola Beverages Pvt. Ltd
8	21-4/723/UT/IND/2017	M/S Panasonic Life Solutions India Pvt. Ltd
9	21-4/13529/RJ/IND/2019	M/s Ultra Tech Cement Ltd.(Unit Birla White)