

**GOVERNMENT OF INDIA
MINISTRY OF JAL SHAKTI
DEPARTMENT OF WATER RESOURCES, RD & GR
CENTRAL GROUND WATER AUTHORITY
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Date: 02.11.2021

Minutes of Sixth Meeting of the Expert Appraisal Committee held on 25.10.2021 through video conferencing.

Sixth meeting of the Expert Appraisal Committee was held on 25.10.2021 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. 6.1: Confirmation of the minutes of fifth meeting of the Expert Appraisal Committee held on 8.10.2021.

Minutes of fifth meeting of the Committee held on 08.10.2021 were circulated to Members vide letter dated 22.10.2021. Since no comments had been received from the Members, the same were confirmed.

Agenda Item No. 6.2: Recommendations on proposals of mining projects of Western Coalfields presented during 1st meeting of the EAC held on 13.4.2021 and 16.4.2021

It was informed that a comprehensive note on responses received from the project proponent on the observations made by EAC during its 1st meeting were circulated to the Committee Members for approval. Since no comments/ objections were received, the same were treated as approved. Details of such projects are given below:

S.No.	Proponent	Application No.	Quantum approved (KLD)
1.	Tawa III Underground Mine of Western Coalfields Ltd.	21-4/906/MP/MIN/2020	125
2.	Tawa II Underground Mine of Western Coalfields Ltd.	21-4/563/MP/MIN/2017	490.32
3.	Shobhapur Underground Mine expansion Project of Western Coalfields Ltd.	21-4/560/MP/MIN/2017	95
4.	Shivpuri Open Cast Mine Expansion Project of Western Coalfields Ltd.	21-4/536/MP/MIN/2017	324
5.	Ghoravari Open Cast Mine of Western Coalfields Ltd.	21-4/555/MP/MIN/2017	568

Agenda Item No. 6.3: Appraisal of Impact Assessment Reports by the committee

Presentations were made before the committee by the Consultants of the respective proponents of 07 projects.

6.3.1 M/s Shree Cement Ltd., Khuskhera, block Tijara, district Alwar Rajasthan, Application No. : 21-4/42/RJ/IND/2006 (2nd Renewal)

This is an existing Industry located Khuskhera, block Tijara, district Alwar Rajasthan, which falls under Over exploited category. The area is underlain by alluvium consisting of fine to medium grained and the weathered portion of the underlying quartzites with numerous joints and fractures, which act as water bearing formations. Depth to bed rock in the area varies between 40 and 60 mbgl. Ground water occurs under unconfined (shallow aquifers) and semi-confined conditions (deeper secondary aquifers). Ground water is tapped mainly through tube wells. The tube wells give moderate yield and extract water mainly from the aquifers located at depths ranging from 30 m (alluvium) to 50 m (weathered quartzites) below ground level on an average. Depth to water level in the area varies from 15 to 29 metres during pre-monsoon period. Analysis of decadal water level data shows declining trend, which is mainly due to withdrawal for agriculture. No industrial waste water is generated in the industrial process. STP treated water is used for green belt.

Industry has requested to grant NOC for withdrawal of 150 (m³/day) 54750 (m³/year) through 2 existing bore wells only.

The following observations were made by the Members:

- The water balance chart shows 60 KLD of water required for cooling which does not indicate the evaporation losses and blow down. How blow down is used was also not mentioned. PP was advised to submit revised water balance chart showing the above mentioned details.

Decision: The NOC was approved subject to submission of revised report incorporating modified water balance chart within 15 days' time.

6.3.2 M/s. A Infrastructure Ltd., Village Ojhada, Sub District Banera, District Bhilwara, Rajasthan, Application No.: 21-4/7137/RJ/IND/2017

This is an existing Industry located in Village Ojhada, Sub District Banera, District Bhilwara, Rajasthan, which falls under Over Exploited category. Ground water requirement of the industry is 280 (m³/day), 84000 (m³/year)] through 03 existing borewells.

Major water bearing formations in the area are gneiss and schist (Bhilwara Supergroup); gneiss, schist, phyllite, slate and limestone (Aravalli Supergroup); sandstone, shale and limestone (Vindhyan Supergroup) and alluvium. Ground water occurs under unconfined to semi-confined condition. Dugwells in Gangapur and Bhilwara areas tapping gneiss and mica schist yield between 25 & 50 m³ /day. Joints are well developed in amphibolites and in some porphyritic granites. Dug wells tapping amphibolite yield more (average yield 30 m³ /day) as compared to wells in granitic gneiss. Phyllites and schists are predominating in the eastern parts of the district near Shakargarh, Amalda and Kachola towards north of Great Boundary Fault. These formations are intercalated with dolomitic limestone, quartzite and basic intrusive. Depth of wells tapping these formations varies from 15 to 50 m. Yield of wells varies from 30 to 45 m³ /day. Pre-monsoon water level in the area varies from 21 to 24 mbgl. The industry has already implemented roof top rain water harvesting measures and has taken up area specific plantation programme.

The following observations were made by the Members:

- Depth to water level map be revised showing locations of monitoring wells.
- Water requirement of the firm is 280 KLD which must be reduced by 40%.
- There is a difference in water level data of project site and hydrograph. Groundwater levels as shown in the map vary from 20 to 25 mbgl but as per hydrograph it was 6 to 13 mbgl. Revised hydrographs and map need to be submitted.

Decision: The NOC was approved subject to submission of revised impact assessment report incorporating the suggested changes within 15 days' time.

6.3.3 M/S RSWM LTD, Sp 1, Industrial Area, Village Reengus, District Sikar, Rajasthan, Application No. 21-4/2316/RJ/IND/2017 (Renew)

M/S RSWM LTD is an existing Industry located at Sp 1, Industrial Area, Village Reengus, District Sikar, Rajasthan. The area falls in Over exploited category. The area is underlain by Older Alluvium, which forms the potential aquifer, which is followed by hard rock.

Depth to water level in the area during pre-monsoon varies from 58 to 63 mbgl. Analysis of pre-monsoon water level data indicates declining trend of 1.54 to 2.3 m/year. Major use of ground water in the buffer zone is for agriculture and domestic activity.

To negate the impact of industrial activity, waste water generated in the process and from domestic use is being treated in the STP and ETP and treated water is being used in the plant process and green belt development. Rainwater harvesting is also practiced in the plant area. Ground water recharge adopted by the plant is to the tune of 36389 Cum/annum. No waste water is discharged out of the plant premises.

Industry has requested to grant NOC for withdrawal of 459(m³/day) 165204 (m³/year) groundwater through 07 existing BWs only.

The following observations were made by the members:

- It was observed that the firm is using 80 KLD of fresh water for boiler which is on higher side. The same may be reduced and water balance may be revised.
- Water requirement for domestic purposes is 200 KLD. Water computation details with respect to population as per NBC 2016 be submitted.

Decision: The proposal was deferred. Proponent was advised to submit revised Impact Assessment Report incorporating the above suggestions within 15 days' time.

6.3.4 M/s. Industrial Guar Products P. Ltd , PLOT No. 144 A and 145A, RIICO Industrial Area, Village EPIP Neemrana (Ct), Block Neemrana, District: Alwar, Rajasthan, Application No.: 21-4/2957/RJ/IND/2017

This is an existing industry located in Neemrana Block, District: Alwar, Rajasthan which falls under Over-Exploited category. Industry has requested to grant NOC for withdrawal of 123.2KLD for 300 days 36,960KLY through 3 existing BWs only.

In the Nimrana block and study area, aquifers are formed primarily in Older alluvium and Quartzite. Weathered and fractured parts of the massive quartzite contribute to aquifer formation whereas the sandy, gravelly and other granular parts of alluvium constitute aquifers. Quartzite forms about 22% of the area and occurs along the fringes of hilly parts in the south western parts of the district. The alluvium is the principal aquifer in this area. Typical sandy horizons constitute aquifers in alluvial areas. Depth to water level in the area varies from 56 to 72 mbgl. Analysis of pre-monsoon water level data during the period 2011-2020, declining trend is observed in the project area.

To solve the above problem, rain water harvesting structures will be developed by the unit. It will be suggested to the farmers that drip irrigation should be practiced to minimize excessive usage of water. It will also be suggested to construct rain water storage tank in addition to rivulet so that storage water can be used in rainy season.

The following observations were made by the Members:

- It was observed that Water Table Contour maps should be depicted on ArcGIS using IDW command. Flow direction should be perpendicular to water table contours.
- The PP was advised to submit revised maps of hydrogeology, water quality, and Depth to Water Level Maps depicting location, regional geology, Hydrogeological parameters and other entities.
- It was observed that hydrographs are missing in the report.
- Seasonal fluctuation map was not correct and same needs to be revised. .
- The quantum of water losses through evaporation is 119 KLD which is very high. It can be managed and recalculated. Revised water balance may be submitted.

Decision: The NOC was approved subject to submission of revised report incorporating the suggested changes within 15 days' time.

**6.3.5 M/s Sintex BAPL Ltd., Plot No. Sr.No. 345, 346, 348, 349, 355, 358
Near Seven Garnala, Kalol (N.G.), Sub District Kalol, District
Gandhinagar, Gujarat, Application No. 21-4/3523/GJ/IND/2018 (New)**

This is an existing Industry located at Kalol, District Gandhinagar, Gujarat, which falls under Semi Critical category as per resource assessment of 2020. The area forms a part of multilayer aquifer system of Cambay Basin of Western India. Within alluvial plains of Ahmedabad - Gandhinagar – Mehsana region, two major aquifers have been identified down to explored depth of about 600 m. The upper unit is mainly phreatic, but at places becomes semi-confined to confined. The lower unit comprises

a few hundred meters of alternating arenaceous (sandy) and argillaceous beds and forms the confined aquifer system.

Unconfined aquifer zones occur from 40 to 80 m. Quality of water in the unconfined aquifer is mostly brackish to saline. The unit is drawing water from deeper aquifer system which is semi-confined to confined and yields fresh water. Cement Sealing is done against clay horizons to avoid contamination of water. Piezometric Surface ranges from 80 to 100 m.

Most of the domestic water requirement of this part of Kadi –Kalol – both urban & rural clusters is now met through surface water based source. Agricultural draft has reduced drastically over the period as more areas are getting converted into non-agricultural land. Industries are dependent on groundwater sources. With revised regulatory guidelines, industries are opting for conserving water resources to confirm permissible norm of CETP for effluent quantity / quality disposal.

The ground water requirement of the unit is 110 (m³/day) 34100 (m³/year) through 1 existing well.

The following observations were made by the Members:

- It was observed that the PP has submitted hydrogeological map of district. It was advised to submit hydrogeological map of the study area within 5km radius.
- In the water table contour map (Fig. 8a) legend needs correction.
- It was observed that in the submitted water balance, the blow down from cooling tower had not been taken into account. Detailed breakup of water use in boiler be furnished.

Decision : The proposal was approved subject to submission of revised report incorporating the suggested changes within 15 days' time.

6.3.6 M/s Cadila Pharmaceuticals Limited. 342, Nani Kadi OG area of Kadi Municipal Town, Kadi Taluka, District Mahesana, Gujarat, Application No.: 21-4/4923/GJ/IND/2019 (New)

This is an existing industry located in Kadi Taluka, District Mahesana, Gujarat which falls under semi critical category as per GW Resource assessment of 2020. Earlier it was under Over-exploited category. The ground water requirement of the industry as per NOC application is 147 KLD through 2 existing tube wells only. The area forms a part of multilayer Alluvial Aquifer System of Cambay Basin of Western

India. Basement rock of Cambay basin is Deccan trap, which is overlain by fluvial and marine rock assemblage consisting of shale, sandstones, limestone etc. oil bearing horizons of Tertiary age, which in turn are followed by multilayer alluvium system of Quaternary age.

The fluvial landforms consist of terrace deposits, abandoned channels, cutoff meanders, and swampy lands while aeolian landforms consist of relict dunes, inter dunes and sandy flats etc. of Quaternary period. The granular zones, mostly predominated by the sand along with admixture of kankas, silt etc. in various proportion, as distinct horizons separated by predominant layers of clay, which are relatively less permeable than the former one, constitute the aquifers whereas latter one, the predominant clay zones and admixed horizons, are termed aquitard or aquifuge depending on its extent of permeability for the groundwater. In 5 –10 km radius area of proposed site of CPL unit, piezometric surface ranges from 0 m to -40m AMSL, with flow direction from northeast to southwest with gradient of 1: 250. In this parts of Kadi taluka, in general, regional groundwater flow direction is from recharge zone of Northeast / East to southwest / west discharge area.

Most of the domestic water requirement in the area is now met through surface water-based source. Parts of area gets Narmada based Surface Water Irrigation. Agricultural draft has reduced drastically over the period as more areas are getting converted into non-agricultural land. Industries are dependent on groundwater. With revised regulatory guidelines, Industries are opting for conserving water resources to conform to permissible norm of CETP for effluent quantity / quality disposal.

The following observations were made by the Members:

- It was advised to submit hydrogeological map of the study area within 5km radius.
- It was observed that the PP has submitted Water level, Water Quality maps in district profile. Hence the PP was advised to submit all the maps with location details of the study area within 5km radius only.

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

5.2.7 M/S Archean Chemical Industries Pvt Ltd., Revenue Survey No. 252, Village Nara Lakhpat, Kachchh Gujarat, Application No. : 21-4/1167/GJ/IND/2014 (Renewal)

This is an existing Industry located at, Village Nara Lakhpat, Kachchh Gujarat, which falls under Safe category as per GWR assessment of 2020. The ground water requirement is 14657.00 (m³/day) 4862955.00 (m³/year) through 20 existing TWs only. Due to high salinity groundwater is not being used for any purpose in the area. Irrigation water requirement for agriculture is being met by canal coming from Nara dam.

The Project area falls on the periphery of the bunny lands of the Rann of Kachchh which are predominantly highly saline. There are no wells within 5 Km and 10 Km radius of the Project area of Village-Nara of Lakhpat taluka. The ground water conditions in the Rann of Kachchh are largely unavailable since the area is uninhabited and devoid of population. Absence of population in the area leads to lack of developmental activities. After obtaining approval for pumping ground water from CGWA, 2 piezometers have been drilled and monitored by the industry within the premises. Depth to water level varies from 6 to 16 mbgl. Analysis of long term water level data from secondary sources shows that there is a decline/rise in depth to water levels between 0.65 to-3.47mts averaging -2.08mts during pre-monsoon period for the last 10years, average decline in depth to water level is 0.208 mts per year in the area.

Predictive modeling has been carried out for the year 2022 assuming same groundwater draft continues. Comparison of predicted water levels during increased pumping to previous model-simulated results indicates that the maximum head decline in the Alluvium aquifer will be approximately 8 to 10 meters. This provides water levels representative of large volumes of aquifer. The model was built to determine how regional water levels will respond in future.

The following observations were made by the Members:

- Major locations may be marked in Geological map.
- Hydrogeological map was not correct. It should include water table contours and major locations.
- Land use and drainage maps may also be incorporated in the report.
- Ground Water Modeling should be revised on regional level preferably watershed so that the impact of the abstraction of such huge quantum of water can be assessed. Modeling should include water budget, calibration, and boundary conditions.

Decision: The NOC was approved subject to submission of revised report incorporating the suggested changes within three months' 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. Rajesh Chandra, Scientist 'D', CGWA
4. Dr. Rakesh Kushwaha, Scientist 'D', CGWA
5. Shri Ashok Patre, Scientist 'D', CGWA
6. Shri Anmol Sharma, Scientist 'C', CGWA
7. Ms Khushboo Anand, Scientist 'B', CGWA
8. Ms. Aditi Bhatt, Scientist 'B', CGWA.
9. Shri. Lalatendu Behara, Scientist 'B', CGWA
10. Shri M. S. Goutham, Scientist 'B', CGWA.
11. Ms. Anita Bisht, Young professional (GW), CGWA.
12. Shri Ankush Sarange, Young professional (GW), CGWA.

S.No	Name of project with application No.	Name of the project proponent	Name of the consultant
1.	INDUSTRIAL GUAR PRODUCTS PVT LTD 21-4/2957/RJ/IND/2017	MUTYA VENKATA SURYA SUBHRAMANYAM, DIRECTOR	Sunita Mantri CMD
2.	M/s. RAJASTHAN SPINNING AND WEAVING MILLS LTD. (RSWM LTD.) (Unit – Reengus Textile Unit) [Address - Village- Reengus, Tehsil – Sri Madhopur, District: Sikar, Rajasthan] Application no. – 21-4/2316/RJ/IND/2017	Name - Pawan Gupta Designation – Senior General Manager	Name – Pavan Kumar Gupta (Associate Engineers & Consultants) Global Water Recharge Management Consultants Mr. Ramesh Malkani
3.	Khushkhera Clinker Grinding Unit-Shree Cement Limited [Address - Plot No. SP3- II/A1 RIICO Industrial Area, Khushkhera - Bhiwadi, Block - Tijara, District - Alwar, Rajasthan] App no. – 21-4/42/RJ/IND/2006	Name – Anil Kumar Trivedi Designation – Senior General Manager	Name – Pavan Kumar Gupta (Associate Engineers & Consultants)
4.	Archean Chemical Industries Private Limited Renewal Application No. 21- 4/1167/GJ/IND/2014	RR Sorathia, Senior Technical advisor, Subash Kashinathan - Project Head	NCVN Chakravarthy, Ground Water Consultant B.B. Soni, Modeller
5.	M/s A INFRASTRUCTURE LIMITED (21-4/7137/RJ/IND/2017)	Name_ Mr. S. K. Soni Designation_ AGM	Vardan Environet
6.	M/s. Sintex BAPL Ltd. 21-4/3523/GJ/IND/2018	KHATSURIA JAYESH G.M.-Development &Maintenance	Prakash Gupte
7.	M/s Cadila Pharmaceuticals Limited Kadi	Mr Shailesh Patel – Cadila Pharmaceuticals Limited Kadi Pranav j Patwa – Cadila Pharmaceuticals Ltd	Mr Prakash Gupte – consultant