DB Power Limited

CIN: U40109MP2006PLC019008
Business Office : Village – Badadarha, Post – Kanwali, Dist – Sakti, Chhattisgarh, PIN – 495695
Tel. : +91-7389912699

No. DBPL/ENV/433

Date: 25.05.2026

To,
Inspector General of Forests
Ministry of Environment, Forest and Climate Change,
Integrated Regional Office, AranyaBhawan,
North Block, Sector-19, Naya Raipur,
Atal Nagar, Chhattisgarh – 492002
iro.raipur-mefcc@gov.in

Subject: **Six Monthly Compliance Report for the period of October 2025 – March 2026**

Ref: Environment Clearance granted by MOEF vide letter no. J-13012/79/2008-IA. II (T) Dated 16/09/2010 to our 2X600 MW Thermal Power Plant located at village – Badadarha, Taluka- Dabhra, Dist –Sakti, Chhattisgarh, DB Power Limited.

Dear Sir,

We are pleased to enclose herewith six monthly Compliance Status Report for the conditions stipulated in subject EC granted to our Thermal power plant located at Village - Badadarha, Taluk - Dabhra, District-Sakti, Chhattisgarh. The report has following enclosures :

1. **CSR & Expenses Report - Annexure 1A & 1B**
2. **Fly Ash Utilization Report – Annexure -2**
3. **Heavy metal monitoring Report-Annexure-3**
4. **Environment Monitoring Report-Annexure -4**
5. **Hydrogeological Survey Report – Annexure -5**
6. **Social Audit Report-Annexure-6**

Thanking you,
Yours Faithfully

D.B. POWER LIMITED * BADADARHA *

Head-Environment

Enclosures: as above

Copy to:

The Member Secretary, Chhattisgarh Environment Conservation Board,
ParyavasBhavan, North Block Sector-19, Atal Nagar, Raipur (C.G.) 492002

Regional Officer, Chhattisgarh Environment Conservation Board
VyaparVihar, Near Pt. Dindayal Upadyay Garden, Dist: Bilaspur (C.G.)

Status of compliance of conditions of Environment Clearance granted by MOEF vide letter no. J-13012/79/2008-IA.II (T) dated 16.09.2010 to M/S DB Power limited.

2X600 MW Thermal Power Plant located at Baradarha, Sakti, Chhattisgarh

(Period : October 2025 – March 2026)

A. Specific Conditions

S. No.	Stipulation	Compliance Status
i.	Vision document specifying prospective plan for the site shall be formulated and submitted to the Ministry within six months.	Complied.
ii.	Sulphur and ash contents in the coal to be used in the project shall not exceed 0.5% and 34% respectively at any given time. In case of variation of coal quality at any point of time, fresh reference shall be made to MoEF for suitable amendments to environmental clearance condition wherever necessary.	Company is procuring coal from Coal India subsidiaries namely SECL & MCL. We are committed to comply MOEF&CC notification vide S.O. 1561(E) dated 21.05.2020.
iii.	A bi-flue stack of 275 m height shall be provided with continuous online monitoring equipment's for SOx, NOx and Particulate Matter. Exit velocity of flue gases shall not be less than 22 m/sec. Mercury emissions from stack may also monitored on periodic basis.	A 275 meter tall twin flue stack has been constructed for effective dispersion of fumes aimed at proper dilution. We have installed continuous online monitoring system each attached to stack for SOx, NOx and Particulate Matter. The exit velocity of flue gas > 22 m/s. However, after FGD commissioning, OCEMS is connected at the FGD stacks for monitoring SOx, NOx and Particulate Matter.
iv.	Source sustainability study of water requirement shall be carried out by an institute of repute. The study shall also specify the source of water for meeting the requirement during lean season. The Report shall be submitted to the Regional Office of the Ministry within six months.	Complied. Source sustainability study was carried out by ISM Dhanbad and same had been submitted along with compliance report vide our Letter No. DBPL/ENV/41 Dated 28.05.2018.
v.	Hydro-geological study of the area shall be reviewed annually and report submitted to the Ministry.	Hydro-geological study report for the FY 2025-26 is attached as **Annexure -5.**
vi.	No ground water shall be extracted for use in operation of the power plant even in Lean season. COC of 5.0 shall be adopted.	Ground water is not extracted for industrial & domestic use. COC of 6.5-7.0 is maintained in water circulated through the cooling tower during operation. This is aimed at water conservation.
vii.	No water bodies including natural drainage system in the area shall be disturbed due to activities associated with the setting up /operation of the power plant. Minimum required environmental flow suggested by the competent Authority of the state govt. shall be maintained in the channel / Rivers (as applicable) even in lean season.	Being complied.
viii.	Local employable youth shall be trained in skills relevant to the project for eventual employment in the project itself. The action taken report and details thereof to this effect shall be submitted to the Regional Office of the Ministry and the State Govt. Dept. concerned from time to time.	The local youths are being trained in skills such as Plumbing, Masonry, Hand pump repair etc. by DB Power CSR team. CSR Report indicating such initiatives during the reporting period is attached as **Annexure I A.**

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ix.	Additional soil for leveling of the proposed site shall be generated within the sites (to the extent possible) so that natural drainage system of the area is protected and improved.	Complied
x.	Provision for installation of FGD shall be provided for future use. High Efficiency Electrostatic Precipitators (ESPs) shall be installed to ensure that particulate emission does not exceed 50 mg/Nm3. Adequate dust extraction system such as cyclones / bag filters and water spray system in dusty areas such as in coal handling and ash handling points, transfer areas and other vulnerable dusty areas shall be provided.	1. DBPL is exempted from SO_2 compliance as per MoEF & CC notification July 2025; stack height is 275m 2. High Efficiency (99.94%) Electro-static precipitator having 80 fields has been installed. This has kept particulate emission from stack < 50 mg/Nm^3. However, particulate emission at the FGD outlet is well below 30 mg/Nm^3. 3. We have provided dust extraction system (DE) complete with filter bags, cage and hopper fitted to Crusher unit, transfer points (5, 6, 7 and 8) and bunkers. We have also provided dust suppression system (DS) at crusher house, TP-1,2,3 and 4 and also at MUH and ERH. The conveyors have been closed on all sides using color coated galvanized profile sheet (CCGP) to confine fugitive emissions. We have provided water cannons at strategic locations in coal handling. 4. At ash silo loading point of ash, water fogging and spraying system is installed for fugitive emission of ash. Similar system is also installed at wagon tippler zone. 5. All internal roads are made pucca. Road dust cleaning is done manually and with machine on road inside and outside premises. Ash transportation from generation point to silo and to ash pond is done using closed MS pipes. Above actions have immensely helped us contain fugitive emission and meet ambient air quality norms in the area.
xi.	Utilization of 100% Fly Ash generated shall be made from 4th year of operation of the plant. Status of implementation shall be reported to the Regional Office of the Ministry from time to time. Fly ash shall be collected in dry form and storage facility (silos) shall be provided. Unutilized fly ash shall be disposed off in the ash pond in the form of slurry form. Mercury and other heavy metals (As,Hg,Cr, Pb etc.) will be monitored in the bottom ash as also in the effluents emanating from the existing ash pond. No ash shall be disposed off in low lying area.	Fly ash generation & utilization report from April-2025 to March-2026 is attached as **Annexure -2.** Heavy metal monitoring is done periodically and analysis report for 2025-26 is attached as **Annexure 3**.

D.B. POWER LIMITED ★ BADADARHA ★

xii.	Ash pond shall be lined with HDPE / LDPE lining or any other suitable impermeable media such that no leaching takes place at any point of time. Adequate safety measures shall also be implemented to protect the ash dyke from getting breached. For disposal of Bottom Ash in abandoned mines (if proposed to be undertaken) it shall be ensured that the bottom and sides of the mined out areas are adequately lined with clay before Bottom Ash is tilled up. The project proponent shall inform the State Pollution Control Board well in advance before undertaking the activity.	Complied. LDPE liners used for lining of Ash pond.
xiii.	Green Belt consisting of 3 tiers of plantations of native species around plant and at least 100 m width shall be raised. Wherever 100 m width is not feasible a 50 m width shall be raised and adequate justification shall be submitted to the Ministry. Tree density shall not less than 2500 per ha with survival rate not less than 75 %.	The total plantation is done in the area of 211 acre with survival rate 80% as per survey 2025-26, details will be Submitted in next compliance report.
xiv.	Two nearest village shall be adopted and basic amenities like development of roads, drinking water supply, primary health center, primary school etc shall be developed in coordination with the District administration. For the tribal families (if any) affected directly or indirectly by the proposed project, specific schemes for upliftment of their sustainable livelihood shall be prepared with time bound implementation and in built monitoring program me. The status of implementation shall be submitted to the Regional Office of the Ministry from time to time.	We have adopted 2 villages Tundri and Badadarha located near the plant as required. We have made six bedded OPD based hospital to cover all nearby villages. Basic amenities like development of roads, drinking water supply, health camps, infrastructure and other support in schools, etc are being done. **Annexure I A.**
xv.	An action plan for R&R (as applicable) with package for the project affected persons be submitted and implemented as per prevalent R&R policy within three months from the date of issue of this letter.	Complied.
xvi.	An amount of Rs 26.0 Corers shall be earmarked as one time capital cost for CSR program. Subsequently a recurring expenditure of Rs 5.2 Corers per annum shall be earmarked as recurring expenditure for CSR activities. Details of the activities to be undertaken shall be submitted within one month along with road map for implementation.	Expenses incurred towards implementation of CSR program from October-25 to March-2026 is attached as **Annexure 1B.**
xvii.	While identifying CSR programme the company shall conduct need based assessment for the nearby villages to study economic measures with action plan which can help in upliftment of poor Section of society. Income generating projects consistent with the traditional skills of the people besides development of fodder farm, fruit bearing orchards, vocational training etc. can form a part of such program. Company shall provide separate budget for community development activities and income generating program. This will be in addition to vocational training for individuals imparted to take up self-employment and jobs.	CSR activities have been undertaken by DB Power Ltd. CSR activity detail is attached as **Annexure 1 A.**

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xviii.	It shall be ensured that in-built monitoring mechanism for the schemes identified is in place and annual social audit shall be got done from the nearest government institute of repute in the region. The project proponent shall also submit the status of implementation of the scheme from time to time.	Social Audit Report for FY 2025-26 is under process and will be submitted in the next compliance cycle. Social Audit Report for FY 2024-25 is attached as Annexure-6.

B. General Conditions

S. No.	Stipulation	Compliance Status
i.	The treated effluents conforming to the prescribed standards only shall be re-circulated and reused within the plant. There shall be no discharge outside the Plant boundary except during monsoon. Arrangements shall be made that effluents and storm water do not get mixed.	• Treated water of ETP is reused green belt irrigation beside in ash handling plant. • Ash Dyke decant water is treated and re-circulated to ash water sump for reuse as well as at the greenbelt areas. • The plant is designed for zero liquid discharge.
ii.	A sewage treatment plant shall be provided (as applicable) and the treated sewage shall be used for raising greenbelt / Plantation.	Sewage Treatment Plants (17 in number) have been installed and commissioned. The treated water from STPs is used for green belt nursing.
iii.	Rainwater harvesting should be adopted, Central Groundwater Authority / Board shall be consulted for finalization of appropriate rainwater harvesting technology within a period of three months from the date of issue of clearance and details shall be furnished to the Regional Office of the Ministry.	We have constructed 7 number of Rain water harvesting structures for run off water for the purpose. This is complete with a receiving pond, gravel/sand bed filter besides bore well. The collected water is subjected to ground water recharging.
iv.	Adequate safety measures shall be provided in the plant area to check / minimize spontaneous fires in coal yard, especially during summer season. Copy of these measures with full details along with plant layout shall be submitted to the Ministry as well as to the Regional Office of the Ministry.	Complied. We have provided a Fire Detection & Protection System (FDPS) including fire hydrants at all strategic points. The detail of same has already been submitted.
v.	Storage facilities for auxiliary liquid fuel such as LDO and HFO /LSHS shall be made in the plant area in consultation with Department of Explosives, Nagpur Sulphur content in the liquid fuel will not exceed 0. 5%, Disaster Management Plan shall be prepared to meet any eventuality in case of an accident taking place due to storage of oil.	A storage facility for LDO is in place after obtaining license from PESO. We also own onsite Disaster/emergency plan duly approved by Factory inspectorate for meeting emergencies.
vi.	Regular monitoring of ground water level shall be carried out by establishing a network of existing wells and constructing new piezometers. Monitoring around the ash pond area shall be carried out particularly for heavy metals (Hg, Cr, As, Pb) and records maintained and submitted to the Regional Office of this Ministry. The data so obtained should be compared with the baseline data so as to ensure that the ground water quality is not adversely affected due to the project.	The ground water monitoring is done at regular intervals and records are maintained.

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vii.	Monitoring surface water quantity and quality shall also be regularly conducted and records maintained. The monitored data shall be submitted to the Ministry regularly. Further, monitoring points shall be located between the plant and drainage in the direction of flow of ground water and records maintained. Monitoring for heavy metals in ground water shall be undertaken.	The monitoring surface water around the plant is done at regular intervals and records maintained. **Annexure-4**
viii.	First Aid and sanitation arrangements shall be made for the drivers and other contract workers during construction phase.	Complied
ix.	Noise levels emanating from turbines shall be so controlled such that the noise in the work zone shall be limited to 75 dBA. For people working in the high noise areas, requisite personal protective equipment like earplugs / ear muffs etc. shall be provided, Workers engaged in noisy areas such as turbine area, air compressors etc shall be periodically examined to maintain audiometric record and for treatment for any hearing loss including shifting to non-noisy / less noisy areas.	The ambient noise monitoring is conducted regularly with noise within the prescribed limit and records maintained. See **Annexure -4** • Turbine is housed in a specially designed acoustic insulated box. • Compressors are kept in isolated closed chambers. • Boiler safety valves are fitted with silencers to contain noise. • In high noise areas PPE like Ear plugs / Ear Muffs are provided to keep impact minimum. • High noise area kept unmanned as far as practical. • The periodical audiometry test of all employees is done and recorded at OHC with remedial action in case of any hearing loss reported. • Above arrangements have helped to keep noise level below 85 dB (A) as per Factory Act at plant equipment work zone and found impact negligible. However ambient noise levels at the boundary premises are within the limit as per Noise Pollution (Prevention and Control) Rules 2005
x.	Regular monitoring of ground level concentration of SO2, NOX, $PM_{2.5}$ & PM_{10} and Hg shall be carried out in the impact zone and records maintained. If at any stage these levels are found to exceed the prescribed limits, necessary control measures shall be provided immediately. The location of the monitoring stations and frequency of monitoring shall be decided in consultation with SPCB. Periodic reports shall be submitted to the Regional Office of this Ministry. The data shall also be put on the website of the company.	Regular monitoring for ambient air quality is carried in the impact zone (both core and buffer). Values are well within norms. The monitoring report is enclosed as **Annexure -4.** We have installed 4 nos. online CAAQMS for real time monitoring of ground level concentration and are integrated to the central server of CPCB. These are working fine.

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xi.	Provision shall be made for the housing of construction labor (as applicable) within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the Project.	Complied.
xii.	The project proponent shall advertise in at least two local newspapers widely circulated in the region around the project, one of which shall be in the vernacular language of the locality concerned within seven days from the date of this clearance letter, informs that the project has been accorded environmental clearance and copies of clearance letter are available with the State Pollution Control Board/Committee and may also be seen at Website of the Ministry of Environment and Forests.	Complied
xiii.	A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, ZilaParisad / Municipal Corporation, urban local Body and the Local NGO, if any, from whom suggestions/representations, if any, received while processing the proposal. The clearance letter shall also be put on the website of the Company by the proponent.	Complied
xiv.	An Environmental Cell shall be created at the project site itself and shall be headed by an officer of appropriate seniority and qualification. It shall be ensured that the head of the Cell shall directly report to the head of the organization.	Environmental Cell is in place and is suitably staffed. It is headed by a senior officer reporting directly to the head of the plant.
xv.	The proponent shall upload the status of compliance of the stipulated EC conditions, including results of monitored data on their website and shall update the same periodically, It shall simultaneously be sent to the Regional Office of MOEF, the respective Zonal Office of CPCB and the SPCB. The criteria pollutant levels namely; SPM, RSPM (PM2.5 & PM10), SO2, NOX (ambient levels as well as stack emissions) shall be displayed at a convenient location near the main gate of the company in the public domain.	Complied.
xvi.	The environment statement for each financial year ending 31st March in From –V as is mandated to be submitted by the project proponent to the concerned State pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of environmental clearance conditions and shall also be sent to the respective Regional Offices of the Ministry by e-mail.	Complied. Environment Statement submitted for FY 2024-25 vide letter dated 16.09.2025.

D.B. POWER LIMITED * BADADARHA *

<table>
<tr><td>xvii.</td><td>The project proponent shall submit six monthly reports on the status of the implementation of the stipulated environmental safeguards to the Ministry of Environment and Forests, its Regional Office, Central Pollution Control Board and State Pollution Control Board. The project proponent shall upload the status of compliance of the environment of the environmental clearance conditions on their website and update the same periodically and simultaneously send the same bye-mail to the Regional Office, Ministry of. Environment and Forests.</td><td>Complied. The last six monthly compliance reports to EC conditions were submitted to IRO, MoEF&CC, Raipur & SPCB (CECB) through our Email dated 19.11.2025. The same also uploaded in our company website.</td></tr>
<tr><td>xviii.</td><td>Regional Office of the Ministry of Environment & Forests will monitor the implementation of the stipulated conditions.
A complete set of documents including Environmental Impact Assessment Report and Environment Management Plan along with the additional information submitted from time to time shall be forwarded to the Regional Office for their use during monitoring. Project proponent 'will upload the compliance status in their website and up-date the same from time to time at least six monthly bases. Criteria pollutants levels including NOX (Stack & ambient air) shall be displayed at the main gate of the power plant.</td><td>Being Complied as and when required.</td></tr>
<tr><td>xix.</td><td>Separate funds shall be allocated for implementation of environmental protection measures along with item-wise break-up, These cost shall be included as part of the project cost. The funds earmarked for the environment protection measures shall not be diverted for other purposes and year-wise expenditure should be reported to the Ministry.</td><td>The Expenditure incurred in environmental protection measures are Recurring Expenditure :
<table>
<tr><th>Department</th><th>Expenses from October-25 to March-26 (in Crore)</th></tr>
<tr><td>Environment</td><td>0.45</td></tr>
<tr><td>Horticulture</td><td>0.71</td></tr>
<tr><td>Fly Ash Utilization</td><td>60.27</td></tr>
<tr><td>OHC</td><td>0.03</td></tr>
<tr><td>Total</td><td>61.46</td></tr>
</table></td></tr>
<tr><td>xx.</td><td>The project authorities shall inform the Regional Office as well as the Ministry regarding the date of financial closure and final approval of the project by the concerned authorities and the dates of start of land development work and commissioning of plant.</td><td>Complied.
Informed vide letter dated 06.06.2011.</td></tr>
<tr><td>xxi.</td><td>Full cooperation shall be extended to the Scientists / Officers from the Ministry / Regional Office of the Ministry at Bhopal / CPCB / SPCB who would be monitoring the compliance of environmental status.</td><td>Full cooperation will be extended to the Scientists / Officers from the Ministry / Regional Office of the Ministry at Raipur / CPCB / SPCB as and when required/visited.</td></tr>
</table>

D.B. POWER LIMITED * BADADARHA *

A GLIMPSE OF CSR ACTIVITIES FROM APRIL - 2025 TO FER - 2026

DB Power Ltd

RURAL INFRASTRUCTURE DEVELOPMENT

CSR Infrastructure Development: Community Center Construction at Badadarha :-

At Badadarha, a vision takes its form, A Community Center rising strong and warm. With steady hands and hopeful eyes, A space for togetherness slowly lies. Brick by brick the future grows, A place where unity and harmony flows. Work is in progress, dreams in sight, Building a hub of shared delight.

Safeguarding Community Spaces through DBPL's Infrastructure Support :-

In Badadarha, where rains would stay, A CC road now leads the way. Sixty-three meters, firm and strong, Guiding dry footsteps all along. Where water once gathered, slowing the pace, Now smoother paths bring ease and grace. A simple road, yet hope so wide, Improving village life with quiet pride.

Supporting Communities with Dignified and Accessible Cremation Facilities :-

At Badadarha, a promise flows, Where a new water tank now proudly shows. Ten thousand litres, strong and tall, Bringing relief and care to all. From Beech Basti to Sarthi Mohall's lane, Pipelines now carry life-sustaining rain. A stream of hope in every drop, Quenching needs that never stop.

RURAL INFRASTRUCTURE DEVELOPMENT

<u>CSR Initiative: Solar-Based Drinking Water Facility with Five Distribution Points:-</u>

In Mahant Mohalla, a brighter way, Solar waters now greet the day. At Badadarha, under the sun's warm light, Clean drinking water flows clear and bright. Five outlets spread hope far and wide, Carrying nature's gift with silent pride. Powered by rays that gently shine, A step towards living safe and fine.

<u>CSR Initiative: Sanitation Infrastructure Development in Village Schools :-</u>

At schools in Tundri and Rampur's care, New bathrooms and toilets now stand there. Built with purpose, neat and strong, Supporting young lives all day long. Villagers' hopes in bricks are seen, Creating spaces safe and clean. A simple change, yet deeply wise, Shaping brighter learning skies.

<u>CSR Initiative: Development of Cremation Infrastructure in Villages :-</u>

At Badadarha and Tundri's side, Cremation sheds now stand with quiet pride. Built with care in solemn grace, Offering shelter in a sacred space. In moments when hearts grow still and deep, These humble structures vigil keep. A final journey, dignified and sure, With compassion that will long endure.

RURAL INFRASTRUCTURE & HEALTH

CSR Initiative: Development of Kitchen Facility at Tundri School:-

At Tundri's school, a vision grows, Where steady work in progress shows. A kitchen room is taking shape, With hopeful plans it will soon drape. Brick by brick the effort stands, Built with care by many hands. Soon it will serve warm meals each day, Nurturing young dreams along the way.

CSR Health Initiative – Medical Cases Attended in Surrounding Villages :-

In nearby villages where needs arise, Care reached many under watchful skies. Day by day, with patience and grace, Helping hands met each hopeful face. Three thousand three hundred fifty-three cases seen, A journey of service, steady and keen. Through healing efforts, strong and true, Health and comfort quietly grew.

CSR Healthcare Initiative – Gynecological Health Camp for Women :-

At DBPL Hospital, care found a gentle way, Special health camps were held for women's well-being day by day. Twice the doors opened with warmth and light, Guiding many towards strength and renewed sight. Dr. Uma Agarwal, with healing grace, Met fifty-nine women face to face. With free medicines and thoughtful care, Hope and comfort quietly filled the air.

HEALTH CARE, EDUCATION AND SPIRITUAL TOUR

CSR Initiative: Medical Assistance to 309 Beneficiaries:-

In the villages around the plant we cared, Three hundred nine cases were gently shared. With healing hands and hearts so kind, Relief and hope were what they'd find. Through every path and dusty lane, We stood with people in their pain. Service and support became our call, Bringing wellness and smiles to one and all.

Distribution of Study Materials to Navodaya Aspirants under CSR Initiative (27 Students) :-

At the DBPL coaching centre, dreams take flight, Twenty-seven young minds prepare with all their might. Guides and practice books placed in their hands, Lighting the path to brighter lands. Whiteboards, chalk, and dusters too, Tools of learning, fresh and new. With hope and effort, step by step they strive, For a place in Navodaya, their ambitions come alive.

CSR Initiative: Pilgrimage Tour Benefitting 550 Villagers :-

From villages touched by the plant and railway line's rise, Devotion and joy were seen in many eyes. A sacred journey to Puri and Bhubaneswar was lovingly arranged, Bringing faith, peace, and moments beautifully changed. Step by step on holy ground they walked with prayer, Finding comfort, hope, and blessings everywhere. Till now, nearly five hundred fifty souls have shared this way, Carrying memories of a divine and grateful day.

EMPOWERMENT OF WOMEN &MAINTENANCE ACT

Financial Assistance Provided for Marriage of Girls from Plant Affected Villages (19 Families) :-

In villages touched by the plant's growing light, Nineteen daughters stepped into a future bright. On their wedding day, with blessings and care, Support was given to families to share. A helping hand from DBPL came their way, Bringing smiles on a joyful, sacred day. With gifts like a fridge, an Almirah standing tall, Dinner sets and gas stoves to comfort them all. Through this gesture of warmth and thoughtful grace, Hope and happiness found a lasting place.

Beauty Parlour (3rd Batch) and Tailoring (23rd Batch) Training in Progress (18 + 30) :- Empowerment of Women and Maintenance Activities

In Badadarha, a new beginning gently unfolds, Eighteen learners shaping dreams with hands so bold. Beauty and tailoring skills they carefully gain, Stitching bright futures with hope, not pain. At Tundri too, the journey proudly goes on, Thirty candidates train from dusk till dawn. In the twenty-third batch, with patience and art, They craft new confidence, stitch by stitch, from the heart.

Repair and Maintenance of Hand Pumps, Motor Pumps and Street Lights under CSR:-

In villages touched by the plant's embrace, Efforts were made to improve daily life's pace. Forty-three hand pumps and sixty motor pumps restored, Bringing flowing water that communities adored. At Badadarha and Rampur, when darkness would fall, Street lights were repaired, answering every call. Two hundred forty-two times they shone bright again, Lighting safe paths through night and rain.

Photographs

CSR ACTIVITIES (DEC - 2025 to MARCH – 2026)

DB Power Ltd

CSR - ACTIVITIES

(1) **<u>Construction of Community Center :-</u>** At Badadarha the work moves on, A Community Center slowly is drawn. Brick by brick and wall by wall, It rises strong to serve them all.	
(2) **<u>Construction of Kitchen Room – Tundri.</u>** At Government Higher Secondary School, Tundri, A new kitchen room now stands with dignity. The work is done, the task complete, A humble space made safe and neat.	
(3) **<u>Construction of Cremation Shed– Badadarha.</u>** At Badadarha, a solemn space now stands, A cremation shed built with caring hands. The work is done, the structure complete, Offering shelter in moments bittersweet.	

DB Power Ltd

CSR - ACTIVITIES

(4)

Provision of Marriage Assistance (₹20,000 each) to Beneficiary Families:-

Gifts of comfort — a fridge, Almirah, and more, A dinner set and gas stove for the new household's door. With ₹20,000 given to each family with care, Five homes found hope and joy to share. A gesture of trust, of warmth and grace, Strengthening bonds within the village space.

(5)

Organization of Spiritual Tour for Villagers (45 Beneficiaries):-

Before the sacred journey could begin, Villagers gathered with hope within. Towards Puri and Bhubaneswar they set their way, On a spiritual tour filled with faith's gentle ray.

CSR - ACTIVITIES

(6)

DBPL Aarogya Kendra – Tundri.

3505 lives touched, With kindness given and suffering hushed. A place where health and trust unite, Guiding many towards strength and light.

(7)

Ambulance Referral Services Availed by Villagers – CSR Initiative :-

Thirty-two lives were guided on their way, Towards better treatment without delay. A journey of hope through sirens' sound, Where help and humanity truly are found.

(8)

Sanitation Improvement Initiative – Drain Cleaning at Badadarha :-

Near Beech Basti and Patel Mohall's way, A cleaner drain now greets the day. With mindful effort and community care, Healthier surroundings now blossom there.

DB Power Ltd

CSR - ACTIVITIES

(9)

Maintenance and Repair Support under CSR Initiative :-

17 hand pumps were repaired at Badadarha and Tundri.
13 motor pumps were repaired at Badadarha, Rampur, and Tundri.
Street lights on 23 poles were repaired at Badadarha and Rampur.
Pipeline repair works were carried out 13 times at Badadarha and near DBPL Urja Bhawan.
Biogas units were repaired twice at Badadarha.

(10)

CSR Welfare Activity for Vulnerable Families :-

To Bhuneshwar Shrivas, Durpati Nishad, and Chanda Mahant's door, Support was given in times that asked for more. Through small provisions and helping hands, Hope and humanity together stand.

	DB POWER LTD.													
	CSR EXPENSES Apr-25 TO MAR-26													
S.No	Sector in which the project is covered	Apr-25	May-25	Jun-25	Jul-25	Aug-25	Sep-25	Oct-25	Nov-25	Dec-25	Jan-26	Feb-26	Mar-26	Grand Total
1	Cultural & Social Activity	76635.8	814707	391988.35	1331554.35	412596.3	551511.8	955,761.46	334,885.59	1,726,689.75	2,030,852.90	472,292.26	1,393,978.95	10,493,454.51
2	Education & Skill Development		48333	1257517	47223	58375	81875.54	45,913.00	108,019.00	54,797.00	98,129.00	48,771.00	95,047.00	1,943,999.54
3	Health activity		659277.76	608495.9	443358.11	322036.67	1181119.16	108,444.63	930,955.98	591,093.14	507,981.75	15,488,172.56	24,274,390.69	45,115,326.35
4	Infrastructure maintenance & development	65040	638593.72	8758752	1367200.56	727482.67	544615	3,585,483.48	1,127,939.70	493,309.98	753,698.22	7,682,333.80	8,428,045.64	34,172,494.77
5	Ongoing Project - Sharda Devi Trust Hospital												115,500,000.00	115,500,000.00
	Grand Total	**141,675.80**	**2,160,911.48**	**11,016,753.25**	**3,189,336.02**	**1,520,490.64**	**2,359,121.50**	**4,695,602.57**	**2,501,800.27**	**2,865,889.87**	**3,390,661.87**	**23,691,569.62**	**149,691,462.28**	**207,225,275.17**

Annexure-2

Ash Generation & Utilization Report
From April-25 to March-26

Sr.no	Month	Coal Cons. (MT)	Ash (%)	Total Ash Generation (MT)	In making of Fly Ash based/ Bricks/ Blocks/ Tiles etc.	In manufacture of Portland Pozzolana Cement	In construction of Highways & Roads including Flyovers	Part replacement of cement in concrete	In Hydro Power Sector in RCC Dam Construction	In Ash dyke raising	In reclamation of low lying Area	In Mine filling	In Agriculture/ Waste land Devlopment	Others	Total Ash Utilization	Ash Utilization (%)
1	Apr-25	471743.0	38.85	183272.2	7365.0	78.8	0.0	0.0	0.0	0.0	18563.0	127243.0	0.0	0.0	153249.8	**83.62**
2	May-25	491684.0	39.82	195775.6	0.0	94.4	0.0	0.0	0.0	0.0	11051.2	139651.3	0.0	0.0	150797.0	**77.03**
3	Jun-25	500500.0	40.55	202955.8	0.0	147.0	26.9	0.0	0.0	0.0	68077.1	156565.0	0.0	0.0	224816.0	**110.77**
4	Jul-25	479954	37.087	178000.5	0.0	69.3	0.0	0.0	0.0	0.0	31716.0	169706.0	0.0	0.0	201491.3	**113.20**
5	Aug-25	505483	40.61	205276.6	0.0	31.0	0.0	0.0	0.0	0.0	49116.5	194965.1	0.0	0.0	244112.6	**118.92**
6	Sep-25	520381.0	40.61	211323.5	0.0	5705.0	0.0	0.0	0.0	0.0	65793.3	161292.0	0.0	0.0	232790.3	**110.16**
7	Oct-25	534184.0	40.999	219010.2	0.0	10670.0	0.0	0.0	0.0	0.0	79346.7	196601.7	0.0	0.0	286618.3	**130.87**
8	Nov-25	300524.0	40.35	121269.6	0.0	9398.0	0.0	0.0	0.0	0.0	144678.0	197903.9	0.0	0.0	351979.8	**290.25**
9	Dec-25	411116.0	39.004	160353.3	450.9	10657.4	0.0	0.0	0.0	0.0	95115.6	198307.0	0.0	0.0	304530.9	**189.91**
10	Jan-26	516092.0	40.34	208180.7	625.8	12044.5	65.3	0.0	0.0	0.0	54014.4	192530.0	0.0	0.0	259280.1	**124.55**
11	Feb-26	479711.0	39.35	188766.3	550.0	11107.0	548.0	0.0	0.0	0.0	74517.8	190950.5	0.0	0.0	277673.3	**147.10**
12	Mar-26	524143.0	40.21	210769.39	634.02	11611.2	4073.9	0.0	0.0	0.0	53206.0	197624.2	0.0	0.0	267149.31	**126.75**
Total		**5735515**	**39.8387**	**2284954**	**9626**	**71614**	**4714**	**0**	**0**	**0**	**745196**	**2123340**	**0**	**0**	**2954489**	**129.30**

Annexure-3

सीएसआईआर - खनिज एवं पदार्थ प्रौद्योगिकी संस्थान
(वैज्ञानिक तथा औद्योगिक अनुसंधान परिषद)
भुवनेश्वर-751013, ओडिशा, भारत
CSIR - INSTITUTE OF MINERALS & MATERIALS TECHNOLOGY
Council of Scientific & Industrial Research
Bhubaneswar - 751013, Odisha, INDIA

TEST REPORT

Ref. No. LT02-MMC/25/84

Date: 20.11.2025

Name & Address of the Party of:	M/s. DB Power Limited Distt: Janjgir-Champa, CHHATTISGARH - 495695
Sample Details:	1. Fly ash (one) 2. Pond ash (one)
Date of Receiving:	23.09.2025
Date(s) of Conducting Test:	24.09.2025
Date of Completion of Test:	10.11.2025
Method Adopted/ Standard:	**(a) Compositional chemical analysis** by ICP-OES and AAS. **(b) Leaching study 1-** Toxicity Characteristic Leaching Procedure (TCLP) study as per US-EPA method 1311. **Leaching study 2-** Waste Extraction Test (WET) Procedure given in Appendix II of section 66261 of Title 22 of California Code Regulations (CCR) to compare with Soluble Threshold Limit Concentration (STLC). Analysis of leaching solutions by AAS, ICP-OES & Ionometry.

Detail Report:

Following data tables are enclosed:

Table-1. Compositional chemical analysis of Ash samples.

Table-2. Experimental variables for Toxicity Characteristic Leaching Procedure (TCLP) study of Ash samples conducted as per US-EPA method 1311.

Table-3. Trace element analysis of TCLP or WET Procedure solutions of Ash samples: Leaching studies conducted as per US-EPA method 1311 and Appendix II of section 66261 of Title 22 of California Code Regulations (CCR).

20/11/2025
(Dr. J. Das)
Pr. Technical Officer
MMC Deptt.

20/11/25
(Dr. B. Nayak)
Chief Scientist
Head, MMCD

N.B: The samples are not drawn by CSIR-IMMT. Liability, if any, for CSIR/IMMT arising in connection with the testing shall be subject to ceiling of amount received by the institute from the client. The report should not be interpreted in part.

TEST REPORT

Ref. No. LT02-MMC/25/84 Date: 20.11.2025

Table-1. Compositional chemical analysis of ash samples

Sl. No.	Component	Concentration in Ash Test Samples, %	
		Fly ash	Pond Ash
1	SiO_2	61.48	61.92
2	Al_2O_3	25.67	21.35
3	Fe_2O_3	4.52	7.85
4	TiO_2	1.56	1.25
5	CaO	0.66	1.42
6	MgO	0.45	0.64
7	Na_2O	0.52	0.41
8	K_2O	1.39	0.95
9	Cr	0.021	0.032
10	Mn	0.035	0.112
11	Ni	0.012	0.009
12	Co	0.005	0.003
13	Zn	0.015	0.006
14	Pb	0.008	0.004
15	P_2O_5	0.32	0.24
16	S as SO_3	0.09	0.12
17	LOI	0.45	1.41

20/11/2025
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Web site: www.immt.res.in

TEST REPORT

Ref. No. LT02-MMC/25/84 **Date: 20.11.2025**

Table-2. Experimental variables for Toxicity Characteristic Leaching Procedure (TCLP) study of Ash samples conducted as per US-EPA method 1311.

Sl. No.	TCLP study Variables	Variable Data	
		Fly Ash	**Pond Ash**
1	TCLP study method	US-EPA Method-1311	US-EPA Method-1311
2	Sample type	Dust, Particle size < 100 µm	Dust and Gravels, Particle size- < 8 mm
3	Sample particle size taken for leaching	Original sample	Original sample
4	Initial pH of samples	7.7	7.9
5	pH after HCl + heat	2.01	2.33
6	Extraction fluid used	Extraction fluid -1	Extraction fluid -1
7	pH of Extraction fluids	4.90	4.90
8	Sample taken for leaching, gm	50	50
9	Volume of extraction fluid used, ml	1000	1000
10	Liquid/solid ratio	20:1	20:1
11	Head space	10%	10%
12	Extraction Temperature °C	28	28
13	Extraction Time, hour	18	18
14	Filter	Glass micro fiber, Whatman GF/C	Glass micro fiber, Whatman GF/C
15	Washing of filters	With dil. HNO_3 and distilled water	With dil. HNO_3 and distilled water
16	pH of recovered extraction fluid	5.7	5.6

20/11/2025
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TEST REPORT

Ref. No. LT02-MMC/25/84 **Date: 20.11.2025**

Table-3. Trace element analysis of TCLP or WET Procedure solutions of Ash samples; leaching studies conducted as per US-EPA method 1311 and Appendix II of section 66261 of Title 22 of California Code Regulations (CCR).

Sl. No.	Component	Concentrations in TCLP or WET* leaching solutions of Ash test samples (mg/L)		*Waste constituents concentration limits of TCLP or STLC, US-EPA and California Code of Regulations (mg/L)*
		Fly Ash	Pond Ash	
1	As	0.069	0.004	5.0
2	Ba	0.12	0.09	100.0
3	Cd	BDL	BDL	1.0
4	Co*	0.017	0.026	80.0
5	Cr	0.02	0.01	5.0
6	Cu*	0.26	0.14	25.0
7	F^-	8.48	0.94	180.0
8	Fe	0.12	0.036	-
9	Hg	0.0008	0.0005	0.2
10	Mn	0.21	0.08	10.0
11	Ni*	0.46	0.31	20.0
12	Pb	0.006	0.014	5.0
13	Zn*	0.34	0.26	250

Remark: The TCLP and WET leaching solution analyses of fly ash and bed ash samples reveal that trace element concentrations are much below the Waste constituent concentration limits. Therefore, the ash samples are non-hazardous materials and their use as land filling or mine void dumping will not have any adverse effect on the ground water quality in respect of the analyzed parameters.

20/11/2025
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20/11/25
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Ultimate
ENVIROLYTICAL SOLUTIONS PVT. LTD.

LAB 1 : HDD-272, PHASE III - NEAR JP CHOWK, RING ROAD NO-2 KABIR NAGAR, RAIPUR (C.G.)-492099
LAB 2 : HIG-36 PHASE II, KABIR NAGAR, RAIPUR (C.G.)- 492099
PH- 0771-4523921 /Email - uespllab@gmail.com

Annexure-4

Name & Address of The Customer	Report No.	UESPL/TR/25-26/06105	
To,	Lab Ref No.	UESPL/25-26/AAQM/10899-10907	
M/s DB Power Limited	Date of Sampling	02/03/2026 to 30/03/2026	
Village- Badadhara	Date of Receipt	03/03/2026 to 31/03/2026	
Dist.-Sakti (C.G) 495695	Date of Report	01/04/2026	
	Date of Analysis	Start: 03/03/2026	End: 01/04/2026

SAMPLE DETAILS

Monitoring For	Ambient Air Quality Monitoring	Customer Ref. No. & Date	8200006833, Dated: 22.07.2025
Sampling Location	AAQMS Station - I		
Duration of Sampling	24 Hours	Sample Collected By	Laboratory Chemist
Sampling Procedure	As Per Method Reference		
Sample Quantity/Packing	Filter Paper (PM_{10}): 1X1 No., Filter Paper ($PM_{2.5}$): 1X1 No. SO_2: 30mlX1 No. PVC Bottle, NO_2: 30mlX1 No. PVC Bottle, Rubber Bladder: 1X1 No., C6H6: Charcoal Tube. Ozone: 10mlX1 No. Brown PVC Bottle, NH_3:10mlX1 No. Brown PVC Bottle		

Test Method and NAAQM Standard for Ambient Air Quality Monitoring

Parameter	Method Reference	NAAQM Standard
Particulate Matter size less than 10 microns (PM_{10})	IS:5182(Part-23):2006 RA 2022	100
Particulate Matter size less than 2.5 microns ($PM_{2.5}$)	IS:5182(Part-24):2019	60
Sulphur Dioxide (SO_2)	IS:5182(Part-2/Sec.1):2001 RA 2023	80
Nitrogen Dioxide (NO_2)	IS:5182(Part-6):2006 RA 2022	80
Carbon Monoxide (CO)*	IS:5182(Part-10):1999	4.0
Ozone (O_3)	CPCB Guidelines Vol-I	180
Ammonia (NH_3)	CPCB Guidelines Vol-I	400
Arsenic (As)	IS:11124: 1984 RA-2020	6.0
Nickel (Ni)	IS:5182(Part-26):2020	20
Lead (Pb)	IS:5182(Part-22):2004 RA 2019	1.0
Benzene (C_6H_6)	IS:5182(Part-11):2006	5.0
Benzo(a)Pyrene	IS:5182(Part-12):2014	1.0

TEST REPORT

Date of Sampling	PM_{10} µg/m³	$PM_{2.5}$ µg/m³	SO_2 µg/m³	NO_2 µg/m³	CO mg/m³	O_3 µg/m³	NH_3 µg/m³	As ng/m³	Ni ng/m³	Pb µg/m³	C_6H_6 µg/m³	B[a]p ng/m³
02.03.2026	60.87	30.54	19.51	27.07	0.77	12.18	9.79	N.D.	N.D.	N.D.	N.D.	N.D.
06.03.2026	61.15	31.14	19.56	27.75	0.79	12.50	10.24	N.D.	N.D.	N.D.	N.D.	N.D.
09.03.2026	60.44	30.45	19.08	26.25	0.76	11.33	9.73	N.D.	N.D.	N.D.	N.D.	N.D.
13.03.2026	59.57	28.23	18.69	24.94	0.72	10.29	9.03	N.D.	N.D.	N.D.	N.D.	N.D.
16.03.2026	62.10	31.55	20.09	27.81	0.81	12.82	10.65	N.D.	N.D.	N.D.	N.D.	N.D.
20.03.2026	62.69	31.56	21.93	28.40	0.82	12.84	10.76	N.D.	N.D.	N.D.	N.D.	N.D.
23.03.2026	59.75	29.78	18.78	25.51	0.72	10.52	9.49	N.D.	N.D.	N.D.	N.D.	N.D.
27.03.2026	59.52	28.00	18.21	24.80	0.69	10.01	8.21	N.D.	N.D.	N.D.	N.D.	N.D.
30.03.2026	57.30	27.23	18.01	24.21	0.66	9.75	8.09	N.D.	N.D.	N.D.	N.D.	N.D.

Remarks: * Duration of sampling for CO - 1 Hour, N.D. - Not Detected

Terms & conditions

- *The use of the report for publication, arbitration or as legal dispute is forbidden.*
- *Test sample will be retained for 15 days after issue of test report unless otherwise agreed with customer.*
- *This is for information as the party has asked for above test(s) only.*

		For ULTIMATE ENVIROLYTICAL SOLUTIONS PVT LTD
1/4/26		01/04/26
REVIEWED BY		AUTHORIZED SIGNATORY

---End of the test report---

Ultimate
ENVIROLYTICAL SOLUTIONS PVT. LTD.

LAB 1 : HDD-272, PHASE III - NEAR JP CHOWK, RING ROAD NO-2 KABIR NAGAR, RAIPUR (C.G.)-492099
LAB 2 : HIG-36 PHASE II, KABIR NAGAR, RAIPUR (C.G.)- 492099
PH- 0771-4523921 /Email - uespllab@gmail.com

Name & Address of The Customer			
To,	Report No.	UESPL/TR/25-26/06106	
M/s DB Power Limited	Lab Ref No.	UESPL/25-26/AAQM/10908-10916	
Village- Badadhara	Date of Sampling	02/03/2026 to 30/03/2026	
Dist.-Sakti (C.G) 495695	Date of Receipt	03/03/2026 to 31/03/2026	
	Date of Report	01/04/2026	
	Date of Analysis	Start: 03/03/2026	End: 01/04/2026

SAMPLE DETAILS			
Monitoring For	Ambient Air Quality Monitoring	Customer Ref. No. & Date	8200006833, Dated: 22.07.2025
Sampling Location	Urja AAQMS - II		
Duration of Sampling	24 Hours	Sample Collected By	Laboratory Chemist
Sampling Procedure	As Per Method Reference		
Sample Quantity/Packing	Filter Paper (PM_{10}): 1X1 No., Filter Paper ($PM_{2.5}$): 1X1 No. SO_2: 30mlX1 No. PVC Bottle, NO_2: 30mlX1 No. PVC Bottle, Rubber Bladder: 1X1 No., C6H6: Charcoal Tube. Ozone: 10mlX1 No. Brown PVC Bottle, NH_4:10mlX1 No. Brown PVC Bottle		

Test Method and NAAQM Standard for Ambient Air Quality Monitoring

Parameter	Method Reference	NAAQM Standard
Particulate Matter size less than 10 microns (PM_{10})	IS:5182(Part-23):2006 RA 2022	100
Particulate Matter size less than 2.5 microns ($PM_{2.5}$)	IS:5182(Part-24):2019	60
Sulphur Dioxide (SO_2)	IS:5182(Part-2/Sec.1):2001 RA 2023	80
Nitrogen Dioxide (NO_2)	IS:5182(Part-6):2006 RA 2022	80
Carbon Monoxide (CO)*	IS:5182(Part-10):1999	4.0
Ozone (O_3)	CPCB Guidelines Vol-I	180
Ammonia (NH_3)	CPCB Guidelines Vol-I	400
Arsenic (As)	IS:11124: 1984 RA-2020	6.0
Nickel (Ni)	IS:5182(Part-26):2020	20
Lead (Pb)	IS:5182(Part-22):2004 RA 2019	1.0
Benzene (C_6H_6)	IS:5182(Part-11):2006	5.0
Benzo(a)Pyrene	IS:5182(Part-12):2014	1.0

TEST REPORT

Date of Sampling	PM_{10} µg/m³	$PM_{2.5}$ µg/m³	SO_2 µg/m³	NO_2 µg/m³	CO mg/m³	O_3 µg/m³	NH_3 µg/m³	As ng/m³	Ni ng/m³	Pb µg/m³	C_6H_6 µg/m³	B[a]p ng/m³
02.03.2026	67.64	29.93	20.97	28.28	0.82	12.03	9.79	N.D.	N.D.	N.D.	N.D.	N.D.
06.03.2026	63.97	28.92	19.28	25.58	0.75	9.74	8.21	N.D.	N.D.	N.D.	N.D.	N.D.
09.03.2026	67.88	29.94	21.14	28.33	0.82	12.04	10.21	N.D.	N.D.	N.D.	N.D.	N.D.
13.03.2026	62.66	27.58	18.16	24.92	0.69	9.57	8.06	N.D.	N.D.	N.D.	N.D.	N.D.
16.03.2026	65.64	29.14	19.90	25.87	0.76	10.09	8.94	N.D.	N.D.	N.D.	N.D.	N.D.
20.03.2026	67.95	31.97	21.31	28.91	0.89	12.28	10.28	N.D.	N.D.	N.D.	N.D.	N.D.
23.03.2026	67.39	29.29	20.30	26.54	0.79	11.78	9.75	N.D.	N.D.	N.D.	N.D.	N.D.
27.03.2026	64.34	28.96	19.87	25.77	0.75	10.01	8.68	N.D.	N.D.	N.D.	N.D.	N.D.
30.03.2026	66.51	29.14	20.29	26.17	0.78	11.54	9.45	N.D.	N.D.	N.D.	N.D.	N.D.

Remarks: *Duration of sampling for CO - 1 Hour, N.D. - Not Detected

Terms & conditions

- *The use of the report for publication, arbitration or as legal dispute is forbidden.*
- *Test sample will be retained for 15 days after issue of test report unless otherwise agreed with customer.*
- *This is for information as the party has asked for above test(s) only.*

REVIEWED BY		For ULTIMATE ENVIROLYTICAL SOLUTIONS PVT LTD 01/04/26 AUTHORIZED SIGNATORY

1/4/26

---End of the test report---

Ultimate
ENVIROLYTICAL SOLUTIONS PVT. LTD.

LAB 1 : HDD-272, PHASE III - NEAR JP CHOWK, RING ROAD NO-2 KABIR NAGAR, RAIPUR (C.G.)-492099
LAB 2 : HIG-36 PHASE II, KABIR NAGAR, RAIPUR (C.G.)- 492099
PH- 0771-4523921 /Email - uespllab@gmail.com

Name & Address of The Customer	Report No.	UESPL/TR/25-26/06107	
To,	Lab Ref No.	UESPL/25-26/AAQM/10917-10925	
M/s DB Power Limited	Date of Sampling	02/03/2026 to 30/03/2026	
Village- Badadhara	Date of Receipt	03/03/2026 to 31/03/2026	
Dist.-Sakti (C.G) 495695	Date of Report	01/04/2026	
	Date of Analysis	Start: 03/03/2026	End: 01/04/2026

SAMPLE DETAILS

Monitoring For	Ambient Air Quality Monitoring	Customer Ref. No. & Date	8200006833, Dated: 22.07.2025
Sampling Location	Raw Water Area AAQMS - III		
Duration of Sampling	24 Hours	Sample Collected By	Laboratory Chemist
Sampling Procedure	As Per Method Reference		
Sample Quantity/Packing	Filter Paper (PM_{10}): 1X1 No., Filter Paper ($PM_{2.5}$): 1X1 No. SO_2: 30mlX1 No. PVC Bottle, NO_2: 30mlX1 No. PVC Bottle, Rubber Bladder: 1X1 No., C6H6: Charcoal Tube. Ozone: 10mlX1 No. Brown PVC Bottle, NH_4:10mlX1 No. Brown PVC Bottle		

Test Method and NAAQM Standard for Ambient Air Quality Monitoring

Parameter	Method Reference	NAAQM Standard
Particulate Matter size less than 10 microns (PM_{10})	IS:5182(Part-23):2006 RA 2022	100
Particulate Matter size less than 2.5 microns ($PM_{2.5}$)	IS:5182(Part-24):2019	60
Sulphur Dioxide (SO_2)	IS:5182(Part-2/Sec.1):2001 RA 2023	80
Nitrogen Dioxide (NO_2)	IS:5182(Part-6):2006 RA 2022	80
Carbon Monoxide (CO)*	IS:5182(Part-10):1999	4.0
Ozone (O_3)	CPCB Guidelines Vol-I	180
Ammonia (NH_3)	CPCB Guidelines Vol-I	400
Arsenic (As)	IS:11124; 1984 RA-2020	6.0
Nickel (Ni)	IS:5182(Part-26):2020	20
Lead (Pb)	IS:5182(Part-22):2004 RA 2019	1.0
Benzene (C_6H_6)	IS:5182(Part-11):2006	5.0
Benzo(a)Pyrene	IS:5182(Part-12):2014	1.0

TEST REPORT

Date of Sampling	PM_{10} µg/m³	$PM_{2.5}$ µg/m³	SO_2 µg/m³	NO_2 µg/m³	CO mg/m³	O_3 µg/m³	NH_3 µg/m³	As ng/m³	Ni ng/m³	Pb µg/m³	C_6H_6 µg/m³	B[a]p ng/m³
02.03.2026	63.00	28.32	18.93	24.88	0.77	9.41	8.68	N.D.	N.D.	N.D.	N.D.	N.D.
06.03.2026	63.12	28.83	19.13	25.72	0.78	9.41	9.63	N.D.	N.D.	N.D.	N.D.	N.D.
09.03.2026	64.01	30.59	19.93	26.94	0.79	10.33	10.06	N.D.	N.D.	N.D.	N.D.	N.D.
13.03.2026	67.78	31.17	21.24	28.24	0.86	12.05	10.42	N.D.	N.D.	N.D.	N.D.	N.D.
16.03.2026	62.45	28.10	18.79	24.33	0.75	9.38	8.13	N.D.	N.D.	N.D.	N.D.	N.D.
20.03.2026	63.83	29.65	19.41	26.50	0.79	9.41	10.01	N.D.	N.D.	N.D.	N.D.	N.D.
23.03.2026	61.97	27.97	18.10	24.25	0.72	9.22	8.11	N.D.	N.D.	N.D.	N.D.	N.D.
27.03.2026	65.60	30.74	21.14	27.46	0.82	10.83	10.23	N.D.	N.D.	N.D.	N.D.	N.D.
30.03.2026	67.83	31.60	21.94	28.65	0.91	12.71	10.72	N.D.	N.D.	N.D.	N.D.	N.D.

Remarks: * Duration of sampling for CO - 1 Hour, N.D. - Not Detected

Terms & conditions

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- *Test sample will be retained for 15 days after issue of test report unless otherwise agreed with customer.*
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1/4/26 REVIEWED BY		For ULTIMATE ENVIROLYTICAL SOLUTIONS PVT LTD 01/04/26 AUTHORIZED SIGNATORY

End of the test report

Ultimate
ENVIROLYTICAL SOLUTIONS PVT. LTD.

LAB 1 : HDD-272, PHASE III - NEAR JP CHOWK, RING ROAD NO-2
KABIR NAGAR, RAIPUR (C.G.)-492099
LAB 2 : HIG-36 PHASE II, KABIR NAGAR, RAIPUR (C.G.)- 492099
PH- 0771-4523921 /Email - uespllab@gmail.com

Name & Address of The Customer	Report No.	UESPL/TR/25-26/06108	
To,	Lab Ref No.	UESPL/25-26/AAQM/10926-10934	
M/s DB Power Limited	Date of Sampling	02/03/2026 to 30/03/2026	
Village- Badadhara	Date of Receipt	03/03/2026 to 31/03/2026	
Dist.-Sakti (C.G) 495695	Date of Report	01/04/2026	
	Date of Analysis	Start: 03/03/2026	End: 01/04/2026

SAMPLE DETAILS			
Monitoring For	Ambient Air Quality Monitoring	Customer Ref. No. & Date	8200006833, Dated: 22.07.2025
Sampling Location	Coal Yard AAQMS - IV		
Duration of Sampling	24 Hours	Sample Collected By	Laboratory Chemist
Sampling Procedure	As Per Method Reference		
Sample Quantity/Packing	Filter Paper (PM_{10}): 1X1 No., Filter Paper ($PM_{2.5}$): 1X1 No. SO_2: 30mlX1 No. PVC Bottle, NO_2: 30mlX1 No. PVC Bottle, Rubber Bladder: 1X1 No., C6H6: Charcoal Tube. Ozone: 10mlX1 No. Brown PVC Bottle, NH_4:10mlX1 No. Brown PVC Bottle		

Test Method and NAAQM Standard for Ambient Air Quality Monitoring

Parameter	Method Reference	NAAQM Standard
Particulate Matter size less than 10 microns (PM_{10})	IS:5182(Part-23):2006 RA 2022	100
Particulate Matter size less than 2.5 microns ($PM_{2.5}$)	IS:5182(Part-24):2019	60
Sulphur Dioxide (SO_2)	IS:5182(Part-2/Sec.1):2001 RA 2023	80
Nitrogen Dioxide (NO_2)	IS:5182(Part-6):2006 RA 2022	80
Carbon Monoxide (CO)*	IS:5182(Part-10):1999	4.0
Ozone (O_3)	CPCB Guidelines Vol-I	180
Ammonia (NH_3)	CPCB Guidelines Vol-I	400
Arsenic (As)	IS:11124; 1984 RA-2020	6.0
Nickel (Ni)	IS:5182(Part-26):2020	20
Lead (Pb)	IS:5182(Part-22):2004 RA 2019	1.0
Benzene (C_6H_6)	IS:5182(Part-11):2006	5.0
Benzo(a)Pyrene	IS:5182(Part-12):2014	1.0

TEST REPORT

Date of Sampling	PM_{10} µg/m³	$PM_{2.5}$ µg/m³	SO_2 µg/m³	NO_2 µg/m³	CO mg/m³	O_3 µg/m³	NH_3 µg/m³	As ng/m³	Ni ng/m³	Pb µg/m³	C_6H_6 µg/m³	B[a]p ng/m³
02.03.2026	59.01	28.04	18.34	24.52	0.75	9.24	8.55	N.D.	N.D.	N.D.	N.D.	N.D.
06.03.2026	58.52	27.97	18.10	24.11	0.72	9.12	8.22	N.D.	N.D.	N.D.	N.D.	N.D.
09.03.2026	65.41	30.80	21.52	27.70	0.86	12.27	10.51	N.D.	N.D.	N.D.	N.D.	N.D.
13.03.2026	64.98	28.94	20.87	25.73	0.82	11.37	10.34	N.D.	N.D.	N.D.	N.D.	N.D.
16.03.2026	65.37	29.31	21.23	26.49	0.83	11.63	10.50	N.D.	N.D.	N.D.	N.D.	N.D.
20.03.2026	65.76	31.83	21.93	28.87	0.88	12.69	10.98	N.D.	N.D.	N.D.	N.D.	N.D.
23.03.2026	60.49	28.38	18.68	25.26	0.79	9.50	9.68	N.D.	N.D.	N.D.	N.D.	N.D.
27.03.2026	64.07	28.87	20.35	25.66	0.82	10.37	10.31	N.D.	N.D.	N.D.	N.D.	N.D.
30.03.2026	63.04	28.75	19.73	25.31	0.79	10.08	10.15	N.D.	N.D.	N.D.	N.D.	N.D.

Remarks: * Duration of sampling for CO - 1 Hour, N.D. - Not Detected

Terms & conditions

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REVIEWED BY		For ULTIMATE ENVIROLYTICAL SOLUTIONS PVT LTD
1/4/26		01/04/26 AUTHORIZED SIGNATORY

----------End of the test report----------

Ultimate
ENVIROLYTICAL SOLUTIONS PVT. LTD.

LAB 1 : HDD-272, PHASE III - NEAR JP CHOWK, RING ROAD NO-2 KABIR NAGAR, RAIPUR (C.G.)-492099
LAB 2 : HIG-36 PHASE II, KABIR NAGAR, RAIPUR (C.G.)- 492099
PH- 0771-4523921 /Email - uespllab@gmail.com

Name & Address of The Customer			
To, **M/s DB Power Limited** **Village - Badadhara** **Dist. - Sakti (C.G) 495695**	Report No.	UESPL/TR/25-26/06109	
	Lab Ref No.	UESPL/25-26/AAQM/10935-10943	
	Date of Sampling	02/03/2026 to 30/03/2026	
	Date of Receipt	03/03/2026 to 31/03/2026	
	Date of Report	01/04/2026	
	Date of Analysis	Start: 03/03/2026	End: 01/04/2026

SAMPLE DETAILS

Monitoring For	Ambient Air Quality Monitoring	Customer Ref. No. & Date	8200006833, Dated: 22.07.2025
Sampling Location	Near – Dhurkot Village		
Duration of Sampling	24 Hours	Sample Collected By	Laboratory Chemist
Sampling Procedure	As Per Method Reference		
Sample Quantity/Packing	Filter Paper (PM_{10}): 1X1 No., Filter Paper ($PM_{2.5}$): 1X1 No. SO_2: 30mlX1 No. PVC Bottle, NO_2: 30mlX1 No. PVC Bottle, Rubber Bladder: 1X1 No., C6H6: Charcoal Tube. Ozone: 10mlX1 No. Brown PVC Bottle, NH_4:10mlX1 No. Brown PVC Bottle		

Test Method and NAAQM Standard for Ambient Air Quality Monitoring

Parameter	Method Reference	NAAQM Standard
Particulate Matter size less than 10 microns (PM_{10})	IS:5182(Part-23):2006 RA 2022	100
Particulate Matter size less than 2.5 microns ($PM_{2.5}$)	IS:5182(Part-24):2019	60
Sulphur Dioxide (SO_2)	IS:5182(Part-2/Sec.1):2001 RA 2023	80
Nitrogen Dioxide (NO_2)	IS:5182(Part-6):2006 RA 2022	80
Carbon Monoxide (CO)*	IS:5182(Part-10):1999	4.0
Ozone (O_3)	CPCB Guidelines Vol-I	180
Ammonia (NH_3)	CPCB Guidelines Vol-I	400
Arsenic (As)	IS:11124; 1984 RA-2020	6.0
Nickel (Ni)	IS:5182(Part-26):2020	20
Lead (Pb)	IS:5182(Part-22):2004 RA 2019	1.0
Benzene (C_6H_6)	IS:5182(Part-11):2006	5.0
Benzo(a)Pyrene	IS:5182(Part-12):2014	1.0

TEST REPORT

Date of Sampling	PM_{10} µg/m³	$PM_{2.5}$ µg/m³	SO_2 µg/m³	NO_2 µg/m³	CO mg/m³	O_3 µg/m³	NH_3 µg/m³	As ng/m³	Ni ng/m³	Pb µg/m³	C_6H_6 µg/m³	B[a]p ng/m³
02.03.2026	54.50	28.00	19.85	25.90	0.74	14.66	10.75	N.D.	N.D.	N.D.	N.D.	N.D.
06.03.2026	51.63	26.78	19.36	24.17	0.69	13.34	9.60	N.D.	N.D.	N.D.	N.D.	N.D.
09.03.2026	49.56	24.11	16.01	22.11	0.52	11.14	8.04	N.D.	N.D.	N.D.	N.D.	N.D.
13.03.2026	52.67	27.04	19.36	24.22	0.69	13.47	9.61	N.D.	N.D.	N.D.	N.D.	N.D.
16.03.2026	49.74	25.46	17.51	23.42	0.62	11.55	8.54	N.D.	N.D.	N.D.	N.D.	N.D.
20.03.2026	49.95	25.87	17.66	23.66	0.62	11.58	9.07	N.D.	N.D.	N.D.	N.D.	N.D.
23.03.2026	50.60	26.54	18.45	23.69	0.65	11.66	9.11	N.D.	N.D.	N.D.	N.D.	N.D.
27.03.2026	49.69	24.36	17.06	22.68	0.59	11.17	8.50	N.D.	N.D.	N.D.	N.D.	N.D.
30.03.2026	54.11	27.38	19.56	25.66	0.72	14.00	9.71	N.D.	N.D.	N.D.	N.D.	N.D.

Remarks: * Duration of sampling for CO - 1 Hour, N.D. - Not Detected

Terms & conditions

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1/4/26 REVIEWED BY		For ULTIMATE ENVIROLYTICAL SOLUTIONS PVT LTD 01/04/26 AUTHORIZED SIGNATORY

-----------------------------------*End of the test report*-----------------------------------

Ultimate
ENVIROLYTICAL SOLUTIONS PVT. LTD.

LAB 1 : HDD-272, PHASE III - NEAR JP CHOWK, RING ROAD NO-2
KABIR NAGAR, RAIPUR (C.G.)-492099
LAB 2 : HIG-36 PHASE II, KABIR NAGAR, RAIPUR (C.G.)- 492099
PH- 0771-4523921 /Email - uespllab@gmail.com

Name & Address of The Customer		Report No.	UESPL/TR/25-26/09110	
To,		Lab Ref No.	UESPL/25-26/AAQM/10944-10952	
M/s DB Power Limited		Date of Sampling	02/03/2026 to 30/03/2026	
Village- Badadhara		Date of Receipt	03/03/2026 to 31/03/2026	
Dist.-Sakti (C.G) 495695		Date of Report	01/04/2026	
		Date of Analysis	Start: 03/03/2026	End: 01/04/2026
SAMPLE DETAILS				
Monitoring For	Ambient Air Quality Monitoring	Customer Ref. No. & Date	8200006833, Dated: 22.07.2025	
Sampling Location	Near – Fulbandhiya Village			
Duration of Sampling	24 Hours	Sample Collected By	Laboratory Chemist	
Sampling Procedure	As Per Method Reference			
Sample Quantity/Packing	Filter Paper (PM_{10}): 1X1 No., Filter Paper ($PM_{2.5}$): 1X1 No. SO_2: 30mlX1 No. PVC Bottle, NO_2: 30mlX1 No. PVC Bottle, Rubber Bladder: 1X1 No., C6H6: Charcoal Tube. Ozone: 10mlX1 No. Brown PVC Bottle, NH_4:10mlX1 No. Brown PVC Bottle			

Test Method and NAAQM Standard for Ambient Air Quality Monitoring

Parameter	Method Reference	NAAQM Standard
Particulate Matter size less than 10 microns (PM_{10})	IS:5182(Part-23):2006 RA 2022	100
Particulate Matter size less than 2.5 microns ($PM_{2.5}$)	IS:5182(Part-24):2019	60
Sulphur Dioxide (SO_2)	IS:5182(Part-2/Sec.1):2001 RA 2023	80
Nitrogen Dioxide (NO_2)	IS:5182(Part-6):2006 RA 2022	80
Carbon Monoxide (CO)*	IS:5182(Part-10):1999	4.0
Ozone (O_3)	CPCB Guidelines Vol-I	180
Ammonia (NH_3)	CPCB Guidelines Vol-I	400
Arsenic (As)	IS:11124; 1984 RA-2020	6.0
Nickel (Ni)	IS:5182(Part-26):2020	20
Lead (Pb)	IS:5182(Part-22):2004 RA 2019	1.0
Benzene (C_6H_6)	IS:5182(Part-11):2006	5.0
Benzo(a)Pyrene	IS:5182(Part-12):2014	1.0

TEST REPORT

Date of Sampling	PM_{10} µg/m³	$PM_{2.5}$ µg/m³	SO_2 µg/m³	NO_2 µg/m³	CO mg/m³	O_3 µg/m³	NH_3 µg/m³	As ng/m³	Ni ng/m³	Pb µg/m³	C_6H_6 µg/m³	B[a]p ng/m³
02.03.2026	49.82	25.40	16.83	22.74	0.72	11.24	8.06	N.D.	N.D.	N.D.	N.D.	N.D.
06.03.2026	50.92	26.73	18.10	23.64	0.75	12.28	8.60	N.D.	N.D.	N.D.	N.D.	N.D.
09.03.2026	50.73	25.52	17.25	22.96	0.72	11.75	8.13	N.D.	N.D.	N.D.	N.D.	N.D.
13.03.2026	54.34	27.72	19.70	25.12	0.79	13.52	10.39	N.D.	N.D.	N.D.	N.D.	N.D.
16.03.2026	53.98	27.30	19.13	24.95	0.77	13.43	9.15	N.D.	N.D.	N.D.	N.D.	N.D.
20.03.2026	49.68	25.03	16.34	22.41	0.69	11.02	8.02	N.D.	N.D.	N.D.	N.D.	N.D.
23.03.2026	51.92	27.15	18.79	23.66	0.76	13.09	9.03	N.D.	N.D.	N.D.	N.D.	N.D.
27.03.2026	54.52	27.74	19.71	25.93	0.81	14.88	10.95	N.D.	N.D.	N.D.	N.D.	N.D.
30.03.2026	50.75	25.67	17.53	23.10	0.74	12.09	8.14	N.D.	N.D.	N.D.	N.D.	N.D.

Remarks: * Duration of sampling for CO - 1 Hour, N.D. - Not Detected

Terms & conditions

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1/4/26 **REVIEWED BY**		For **ULTIMATE ENVIROLYTICAL SOLUTIONS PVT LTD** 01/04/26 **AUTHORIZED SIGNATORY**

---End of the test report---

Ultimate
ENVIROLYTICAL SOLUTIONS PVT. LTD.

LAB 1 : HDD-272, PHASE III - NEAR JP CHOWK, RING ROAD NO-2
KABIR NAGAR, RAIPUR (C.G.)-492099
LAB 2 : HIG-36 PHASE II, KABIR NAGAR, RAIPUR (C.G.)- 492099
PH- 0771-4523921 /Email - uespllab@gmail.com

Name & Address of The Customer	Report No.	UESPL/TR/25-26/06111	
To,	Lab Ref No.	UESPL/25-26/AAQM/10953-10961	
M/s DB Power Limited	Date of Sampling	02/03/2026 to 30/03/2026	
Village- Badadhara	Date of Receipt	03/03/2026 to 31/03/2026	
Dist.-Sakti (C.G) 495695	Date of Report	01/04/2026	
	Date of Analysis	Start: 03/03/2026	End: 01/04/2026

SAMPLE DETAILS

Monitoring For	Ambient Air Quality Monitoring	Customer Ref. No. & Date	8200006833, Dated: 22.07.2025
Sampling Location	Near – Nandeli Village		
Duration of Sampling	24 Hours	Sample Collected By	Laboratory Chemist
Sampling Procedure	As Per Method Reference		
Sample Quantity/Packing	Filter Paper (PM_{10}): 1X1 No., Filter Paper ($PM_{2.5}$): 1X1 No. SO_2: 30mlX1 No. PVC Bottle, NO_2: 30mlX1 No. PVC Bottle, Rubber Bladder: 1X1 No., C6H6: Charcoal Tube. Ozone: 10mlX1 No. Brown PVC Bottle, NH_4:10mlX1 No. Brown PVC Bottle		

Test Method and NAAQM Standard for Ambient Air Quality Monitoring

Parameter	Method Reference	NAAQM Standard
Particulate Matter size less than 10 microns (PM_{10})	IS:5182(Part-23):2006 RA 2022	100
Particulate Matter size less than 2.5 microns ($PM_{2.5}$)	IS:5182(Part-24):2019	60
Sulphur Dioxide (SO_2)	IS:5182(Part-2/Sec.1):2001 RA 2023	80
Nitrogen Dioxide (NO_2)	IS:5182(Part-6):2006 RA 2022	80
Carbon Monoxide (CO)*	IS:5182(Part-10):1999	4.0
Ozone (O_3)	CPCB Guidelines Vol-I	180
Ammonia (NH_3)	CPCB Guidelines Vol-I	400
Arsenic (As)	IS:11124; 1984 RA-2020	6.0
Nickel (Ni)	IS:5182(Part-26):2020	20
Lead (Pb)	IS:5182(Part-22):2004 RA 2019	1.0
Benzene (C_6H_6)	IS:5182(Part-11):2006	5.0
Benzo(a)Pyrene	IS:5182(Part-12):2014	1.0

TEST REPORT

Date of Sampling	PM_{10} µg/m³	$PM_{2.5}$ µg/m³	SO_2 µg/m³	NO_2 µg/m³	CO mg/m³	O_3 µg/m³	NH_3 µg/m³	As ng/m³	Ni ng/m³	Pb µg/m³	C_6H_6 µg/m³	B[a]p ng/m³
02.03.2026	53.90	26.42	19.17	23.43	0.74	12.51	9.63	N.D.	N.D.	N.D.	N.D.	N.D.
06.03.2026	52.39	26.18	18.78	23.08	0.71	12.02	9.30	N.D.	N.D.	N.D.	N.D.	N.D.
09.03.2026	49.02	24.48	16.40	22.17	0.62	11.37	8.15	N.D.	N.D.	N.D.	N.D.	N.D.
13.03.2026	54.39	27.83	19.98	25.97	0.77	14.38	10.20	N.D.	N.D.	N.D.	N.D.	N.D.
16.03.2026	49.73	25.30	17.15	22.19	0.63	11.47	8.24	N.D.	N.D.	N.D.	N.D.	N.D.
20.03.2026	51.83	25.31	18.08	22.57	0.68	11.79	8.50	N.D.	N.D.	N.D.	N.D.	N.D.
23.03.2026	53.91	26.72	19.35	25.25	0.75	13.31	9.90	N.D.	N.D.	N.D.	N.D.	N.D.
27.03.2026	54.24	27.06	19.86	25.57	0.76	14.04	10.02	N.D.	N.D.	N.D.	N.D.	N.D.
30.03.2026	52.35	26.12	18.63	22.73	0.69	12.01	8.54	N.D.	N.D.	N.D.	N.D.	N.D.

Remarks: * Duration of sampling for CO - 1 Hour, N.D. - Not Detected

Terms & conditions

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		For ULTIMATE ENVIROLYTICAL SOLUTIONS PVT LTD
1/4/26		01/04/26
REVIEWED BY		AUTHORIZED SIGNATORY

------------------------------*End of the test report*------------------------------

Ultimate
ENVIROLYTICAL SOLUTIONS PVT. LTD.

LAB 1 : HDD-272, PHASE III - NEAR JP CHOWK, RING ROAD NO-2
KABIR NAGAR, RAIPUR (C.G.)-492099
LAB 2 : HIG-36 PHASE II, KABIR NAGAR, RAIPUR (C.G.)- 492099
PH- 0771-4523921 /Email - uespllab@gmail.com

Name & Address of The Customer	Report No.	UESPL/TR/25-26/06112	
To,	Lab Ref No.	UESPL/25-26/AAQM/10962-10970	
M/s DB Power Limited	Date of Sampling	02/03/2026 to 30/03/2026	
Village- Badadhara	Date of Receipt	03/03/2026 to 31/03/2026	
Dist.-Sakti (C.G) 495695	Date of Report	01/04/2026	
	Date of Analysis	Start: 03/03/2026	End: 01/04/2026

SAMPLE DETAILS

Monitoring For	Ambient Air Quality Monitoring	Customer Ref. No. & Date	8200006833, Dated: 22.07.2025
Sampling Location	Near – Komo Village		
Duration of Sampling	24 Hours	Sample Collected By	Laboratory Chemist
Sampling Procedure	As Per Method Reference		
Sample Quantity/Packing	Filter Paper (PM_{10}): 1X1 No., Filter Paper ($PM_{2.5}$): 1X1 No. SO_2: 30mlX1 No. PVC Bottle, NO_2: 30mlX1 No. PVC Bottle, Rubber Bladder: 1X1 No., C6H6: Charcoal Tube. Ozone: 10mlX1 No. Brown PVC Bottle, NH_4:10mlX1 No. Brown PVC Bottle		

Test Method and NAAQM Standard for Ambient Air Quality Monitoring

Parameter	Method Reference	NAAQM Standard
Particulate Matter size less than 10 microns (PM_{10})	IS:5182(Part-23):2006 RA 2022	100
Particulate Matter size less than 2.5 microns ($PM_{2.5}$)	IS:5182(Part-24):2019	60
Sulphur Dioxide (SO_2)	IS:5182(Part-2/Sec.1):2001 RA 2023	80
Nitrogen Dioxide (NO_2)	IS:5182(Part-6):2006 RA 2022	80
Carbon Monoxide (CO)*	IS:5182(Part-10):1999	4.0
Ozone (O_3)	CPCB Guidelines Vol-I	180
Ammonia (NH_3)	CPCB Guidelines Vol-I	400
Arsenic (As)	IS:11124: 1984 RA-2020	6.0
Nickel (Ni)	IS:5182(Part-26):2020	20
Lead (Pb)	IS:5182(Part-22):2004 RA 2019	1.0
Benzene (C_6H_6)	IS:5182(Part-11):2006	5.0
Benzo(a)Pyrene	IS:5182(Part-12):2014	1.0

TEST REPORT

Date of Sampling	PM_{10} µg/m³	$PM_{2.5}$ µg/m³	SO_2 µg/m³	NO_2 µg/m³	CO mg/m³	O_3 µg/m³	NH_3 µg/m³	As ng/m³	Ni ng/m³	Pb µg/m³	C_6H_6 µg/m³	B[a]p ng/m³
02.03.2026	50.16	24.19	16.87	22.72	0.64	12.06	8.56	N.D.	N.D.	N.D.	N.D.	N.D.
06.03.2026	54.70	26.61	19.50	25.62	0.79	14.35	9.99	N.D.	N.D.	N.D.	N.D.	N.D.
09.03.2026	54.88	27.43	19.77	25.88	0.85	14.84	10.42	N.D.	N.D.	N.D.	N.D.	N.D.
13.03.2026	51.24	24.73	17.19	23.05	0.71	12.54	9.57	N.D.	N.D.	N.D.	N.D.	N.D.
16.03.2026	52.53	24.95	17.69	23.43	0.77	13.45	9.84	N.D.	N.D.	N.D.	N.D.	N.D.
20.03.2026	49.78	24.04	16.83	22.48	0.62	11.26	8.26	N.D.	N.D.	N.D.	N.D.	N.D.
23.03.2026	51.90	24.89	17.39	23.33	0.76	12.69	9.74	N.D.	N.D.	N.D.	N.D.	N.D.
27.03.2026	50.98	24.59	17.15	22.96	0.68	12.22	9.38	N.D.	N.D.	N.D.	N.D.	N.D.
30.03.2026	54.02	25.17	18.41	25.20	0.79	13.86	9.85	N.D.	N.D.	N.D.	N.D.	N.D.

Remarks: * Duration of sampling for CO - 1 Hour, N.D. - Not Detected

Terms & conditions

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1/4/26 REVIEWED BY		For ULTIMATE ENVIROLYTICAL SOLUTIONS PVT LTD 01/04/26 AUTHORIZED SIGNATORY

-----End of the test report-----

Ultimate
ENVIROLYTICAL SOLUTIONS PVT. LTD.

LAB 1 : HDD-272, PHASE III - NEAR JP CHOWK, RING ROAD NO-2
KABIR NAGAR, RAIPUR (C.G.)-492099
LAB 2 : HIG-36 PHASE II, KABIR NAGAR, RAIPUR (C.G.)- 492099
PH- 0771-4523921 /Email - uespllab@gmail.com

Name & Address of The Customer			
To, M/s DB Power Limited Village- Badadhara Dist.-Sakti (C.G) 495695		Report No.	UESPL/TR/25-26/06113
		Lab Ref No.	UESPL/25-26/N/10971-10988
		Date of Report	23/03/2026
		Date of Sampling	19/03/2026
SAMPLE DETAILS			
Monitoring For	Noise Level Monitoring	Customer Ref. No. & Date	8200006833, Dated: 22.07.2025
Sampling Location	Inside Plant &Outside Plant (As Described Below)		
Sample Received On	Monitoring At	Sample Collected By	Laboratory Chemist
Sampling Procedure	Manufacturer's Instruction		
Sample Quantity/Packing	Not Applicable		

TEST REPORT

LOCATION	UNIT	RESULT 19.03.2026	MAXIMUM EXPOSURE DURATION PER DAY 8 HRS. LIMIT
Near - TG Unit 01 Area	dB(A)	83.1	85 dB (Max)
Near - TG Unit 02 Area	dB(A)	83.0	
Near – NR Silo Plant	dB(A)	68.9	
Near – MUH CHP	dB(A)	80.9	
Crusher CHP Area	dB(A)	60.8	
Near – DM Plant	dB(A)	70.1	
Near – BFP 01	dB(A)	82.4	
Near – BFP 02	dB(A)	82.5	
Near – Compressor House	dB(A)	83.1	
Near – TAC Building	dB(A)	82.6	

LOCATION	UNIT	RESULT 19.03.2026		LIMIT (INDUSTRIAL ZONE)	
		DAY TIME	NIGHT TIME		
Inside Plant					
AAQM Station - I	dB(A)	71.5	63.2	75	70
Urja AAQMS - II	dB(A)	72.8	64.5		
Raw Water AAQMS- III	dB(A)	70.7	63.9		
Coal Yard AAQMS - IV	dB(A)	70.9	64.8		
Outside Plant					
Near - Dhurkot Village	dB(A)	51.6	40.9	55	45
Near - Fulbandhiya Village	dB(A)	52.5	41.8		
Near - Nandeli Village	dB(A)	50.3	41.1		
Near Komo Village	dB(A)	50.3	40.6		

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		For ULTIMATE ENVIROLYTICAL SOLUTIONS PVT LTD
23/3/26 REVIEWED BY		23/03/26 AUTHORIZED SIGNATORY

-------------------------------*End of the test report*-------------------------------

Ultimate
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LAB 1 : HDD-272, PHASE III - NEAR JP CHOWK, RING ROAD NO-2
KABIR NAGAR, RAIPUR (C.G.)-492099
LAB 2 : HIG-36 PHASE II, KABIR NAGAR, RAIPUR (C.G.)- 492099
PH- 0771-4523921 /Email - uespllab@gmail.com

Name & Address of The Customer		
To, **M/s DB Power Limited** **Village- Badadhara** **Dist.-Sakti (C.G) 495695**	Report No.	UESPL/TR/25-26/06114
	Lab Ref No.	UESPL/25-26/FE/10989-10992
	Date of Sampling	16/03/2026 to 17/03/2026
	Date of Receipt	18/03/2026
	Date of Report	21/03/2026
	Date of Analysis	Start: 18/03/2026 End: 21/03/2026

SAMPLE DETAILS	
Monitoring For	Fugitive Emission
Customer Ref. No. &Date	8200006833, Dated: 22.07.2025
Sampling Location	1. Manual Unloading Hopper 2. CHP Crusher 3. Silo Area 4. ESP Area
Duration of Sampling	8 Hours
Sample Collected By	Laboratory Chemist
Sampling Procedure	As Per Method Reference
Sample Quantity/Packing	GMF Filter Paper (8 X 10 inch): 1X1 No.

TEST REPORT

SR. NO.	PARAMETER	UNIT	RESULT				MOEF & CC NOTIFICATION	METHOD REFERENCE
			MANUAL UNLOADING HOPPER	CHP CRUSHER	SILO AREA	ESP AREA		
1	Total Suspended Particulate Matter (as SPM)	µg/m³	362	410	359	352	500	EPA Method IO-2.1

Note: All results are on the basis of 8-hour sampling.

REMARKS: RESULTS ARE AS ABOVE

Terms & conditions

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		For ULTIMATE ENVIROLYTICAL SOLUTIONS PVT LTD
21/3/26 REVIEWED BY		21/03/26 AUTHORIZED SIGNATORY

----------End of the test report----------

Ultimate
ENVIROLYTICAL SOLUTIONS PVT. LTD.

LAB 1 : HDD-272, PHASE III - NEAR JP CHOWK, RING ROAD NO-2
KABIR NAGAR, RAIPUR (C.G.)-492099
LAB 2 : HIG-36 PHASE II, KABIR NAGAR, RAIPUR (C.G.)- 492099
PH- 0771-4523921 /Email - uespllab@gmail.com

Name & Address of the Customer	Report No.	UESPL/TR/25-26/06115	
To,	Lab Ref No.	UESPL/25-26/ST/10993	
M/s DB Power Limited	Date of Sampling	25/03/2026	
Village- Badadhara	Date of Receipt	26/03/2026	
Dist. - Sakti (C.G) 495695	Date of Report	30/03/2026	
	Date of Analysis	Start: 26/03/2026	End: 30/03/2026

SAMPLE DETAILS

Monitoring For	FGD_Absorber1 _Stack
Customer Ref. No. &Date	8200006833, Dated: 22.07.2025
Sampling Location	Unit - I
Sample Collected By	Laboratory Chemist
Sampling Procedure	IS 11255 Part 1,2:1985 Reaffirmed 2009; Part 3:2008, Part 7:2005 Reaffirmed 2012, IS 5182 (Part 10) :2003
Sample Quantity/Packing	Thimble: 1 X 1 No., SO_2: 30 ml X 1 No. PVC Bottle, NO_X: 25 ml X 1 No. PVC Bottle, Rubber Bladder: 1 X 1 No., Hg: 500ml X 1 No. Glass Bottle & 500ml X 3 No.PVC Bottle.

TEST REPORT

Stack details

Stack Identity	UNIT -I
Stack Attached To	ESP-BOILER
Material of Construction	MS / RCC
Stack Height Above Ground Level (Mtr.)	120
Stack Diameter (Mtr.)	7.5
Stack Shape at Top	CIRCULAR
Type of Fuel	COAL

Parameter	Unit	Result	Limit	Method Reference
Flue Gas Temperature	°C	90	-	IS:11255:(Part-3):2008
Flue Gas Velocity	M/s	21.46	-	IS:11255:(Part-3):2008
Total Gas Quantity	Nm^3/h	2800490	-	IS:11255:(Part-3):2008
Particulate Matter (PM)	mg/Nm^3	27.3	50	IS:11255:(Part-1):1985 RA 2019
Sulphur Dioxide (SO_2)	mg/Nm^3	108.6	200	IS:11255:(Part-2):1985 RA 2019
Oxide Of Nitrogen (NO_x)	mg/Nm^3	310.2	450	IS:11255:(Part-7):2005 RA 2022
Carbon Monoxide (CO)	mg/ Nm^3	0.26	-	IS 13270 RA 2019
Mercury (Hg)	mg/Nm^3	N.D.	0.03	USEPA Method No. 29

REMARKS: Results Are as Above

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30/3/26 REVIEWED BY		For ULTIMATE ENVIROLYTICAL SOLUTIONS PVT LTD 30/03/26 AUTHORIZED SIGNATORY

-----End of the test report-----

Ultimate
ENVIROLYTICAL SOLUTIONS PVT. LTD.

LAB 1 : HDD-272, PHASE III - NEAR JP CHOWK, RING ROAD NO-2
KABIR NAGAR, RAIPUR (C.G.)-492099
LAB 2 : HIG-36 PHASE II, KABIR NAGAR, RAIPUR (C.G.)- 492099
PH- 0771-4523921 /Email - uespllab@gmail.com

Name & Address of The Customer	Report No.	UESPL/TR/25-26/06116	
To, M/s DB Power Limited Village- Badadhara Dist. - Sakti (C.G) 495695	Lab Ref No.	UESPL/25-26/ST/10994	
	Date of Sampling	25/03/2026	
	Date of Receipt	26/03/2026	
	Date of Report	30/03/2026	
	Date of Analysis	Start: 26/03/2026	End: 30/03/2026

SAMPLE DETAILS	
Monitoring For	FGD_Stack
Customer Ref. No. &Date	8200006833, Dated: 22.07.2025
Sampling Location	Unit - II
Sample Collected By	Laboratory Chemist
Sampling Procedure	IS 11255 Part 1,2:1985 Reaffirmed 2009; Part 3:2008, Part 7:2005 Reaffirmed 2012, IS 5182 (Part 10) :2003
Sample Quantity/Packing	Thimble: 1 X 1 No., SO_2: 30 ml X 1 No. PVC Bottle, NO_x: 25 ml X 1 No. PVC Bottle, Rubber Bladder: 1 X 1 No., Hg: 500ml X 1 No. Glass Bottle & 500ml X 3 No. PVC Bottle.

TEST REPORT

Stack details

Stack Identity	UNIT -II
Stack Attached To	ESP-BOILER
Material of Construction	MS / RCC
Stack Height Above Ground Level (Mtr.)	275
Stack Diameter (Mtr.)	7.5
Stack Shape at Top	CIRCULAR
Type of Fuel	COAL

Parameter	Unit	Result	Limit	Method Reference
Flue Gas Temperature	°C	125	-	IS:11255:(Part-3):2008
Flue Gas Velocity	M/s	20.74	-	IS:11255:(Part-3):2008
Total Gas Quantity	Nm^3/h	2791111	-	IS:11255:(Part-3):2008
Particulate Matter (PM)	mg/Nm^3	45.31	50	IS:11255:(Part-1):1985 RA 2019
Sulphur Dioxide (SO_2)	mg/Nm^3	1210	200	IS:11255:(Part-2):1985 RA 2019
Oxide of Nitrogen (NO_x)	mg/Nm^3	255	450	IS:11255:(Part-7):2005 RA 2022
Carbon Monoxide (CO)	mg/ Nm^3	0.28	-	IS 13270 RA 2019
Mercury (Hg)	mg/Nm^3	N.D.	0.03	USEPA Method No. 29

REMARKS: Results Are as Above

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REVIEWED BY		For ULTIMATE ENVIROLYTICAL SOLUTIONS PVT LTD AUTHORIZED SIGNATORY
30/3/26		30/03/26

---------End of the test report---------

Ultimate
ENVIROLYTICAL SOLUTIONS PVT. LTD.

LAB 1 : HDD-272, PHASE III - NEAR JP CHOWK, RING ROAD NO-2
KABIR NAGAR, RAIPUR (C.G.)-492099
LAB 2 : HIG-36 PHASE II, KABIR NAGAR, RAIPUR (C.G.)- 492099
PH- 0771-4523921 /Email - uespllab@gmail.com

Name & Address Of The Customer			
To, M/s DB Power Limited Village- Badadhara Dist.-Sakti (C.G) 495695	Report No.	UESPL/TR/25-26/06117	
	Lab Ref No.	UESPL/25-26/W/10995	
	Date of Sampling	07/03/2026	
	Date of Receipt	09/03/2026	
	Date of Report	13/03/2026	
	Date of analysis	Start: 09/03/2026	End: 13/03/2026

SAMPLE DETAILS	
Customer Sample Id /Sampling Location	Aditya Canteen
Customer Ref. No. & Date	8200006833, Dated: 22.07.2025
Sample Type	Drinking Water
Packing of Sample	Plastic Bottle (5.0 Ltr.) Glass Bottle (1.0 Ltr.)
Sample Collected By	Laboratory Chemist
Sample Condition at Receipt	Ok

REPORT NO.: 06117

TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012 Acceptable Limit	Permissible limit	RESULT
A.	Organoleptic & Physical Parameters					
1	Colour	Hazen	IS:3025(Part-4):2021	5	15	<1.0
2	Odour	-	IS:3025(Part-5):1983	Agreeable	Agreeable	Agreeable
3	pH Value at 25.2°C	-	IS:3025(Part-11):2022	6.5-8.5	No Relaxation	7.29
4	Taste	-	IS:3025(Part-8):2017	Agreeable	Agreeable	Agreeable
5	Turbidity	NTU	IS:3025(Part-10):2023	1	5	0.54
6	Total Dissolved Solids	mg/L	IS:3025(Part-16):2023	500	2000	98
B.	General Parameters Concerning Substances undesirable in excessive amounts					
1	Aluminium (as Al)	mg/L	IS:3025(Part-55):2003 RA 2019	0.03	0.2	N.D.
2	Ammonia (as total ammonia-N)	mg/L	APHA 24th Ed.2023, 4500-NH_3-B&C, 424-425	0.5	No Relaxation	N.D.
3	Anionic Detergent (as MBAS)	mg/L	APHA 24th Ed.2023, 5540-MBAS-C, 585	0.2	1.0	N.D.
4	Barium (as Ba)	mg/L	APHA 24th Ed.2023,3500-Ba, 252	0.7	No Relaxation	N.D.
5	Boron (as B)	mg/L	APHA 24th Ed.2023,4500-B-B, 328	0.5	1.0	N.D.
6	Calcium (as Ca)	mg/L	IS:3025(Part-40):1991 RA 2019	75	200	13.62
7	Chloramines (as Cl_2)	mg/L	IS:3025(Part-26)	4.0	No Relaxation	N.D.
8	Chloride (as Cl)	mg/L	IS:3025(Part-32):1988 RA 2019	250	1000	9.9
9	Copper (as Cu)	mg/L	IS:3025(Part-42):1992 RA 2019	0.05	1.5	N.D.
10	Fluoride (as F)	mg/L	IS:3025(Part-60):2008 RA 2019	1	1.5	0.1
11	Free Residual Chlorine	mg/L	IS:3025(Part-26):2021	0.2	1	N.D.
12	Iron (as Fe)	mg/L	IS:3025(Part-53):2003 RA 2019	0.3	No Relaxation	N.D.
13	Magnesium (as Mg)	mg/L	APHA 24th Ed.2023,3500-Mg-B, 274	30	100	7.77
14	Manganese (as Mn)	mg/L	USEPA - SW - 846 : Method -7000B	0.1	0.3	N.D.
15	Mineral Oil	mg/L	Clause 6 of IS 3025 (Part-39) Infrared partition method	0.5	No Relaxation	N.D.

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LAB 2 : HIG-36 PHASE II, KABIR NAGAR, RAIPUR (C.G.)- 492099
PH- 0771-4523921 /Email - uespllab@gmail.com

REPORT NO.: 06117

TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012 Acceptable Limit	AS PER IS 10500:2012 Permissible limit	RESULT
16	Nitrate (as NO_3)	mg/L	APHA 24th Ed.2023,4500-NO3-B, 434-435	45	No Relaxation	0.74
17	Phenolic Compound (as C_6H_5OH)	mg/L	APHA 24th Ed.2023, 6420-P-OH-C, 702	0.001	0.002	N.D.
18	Selenium (as Se)	mg/L	IS:3025(Part-56):2003	0.01	No Relaxation	N.D.
19	Silver (as Ag)	mg/L	APHA 24th Ed.2023,3500-Ag, 289	0.1	No Relaxation	N.D.
20	Sulphate (as SO_4)	mg/L	IS:3025(Part-24/Sec.1):2022	200	400	4.12
21	Sulphide (as H_2S)	mg/L	IS:3025(Part 29):2023	0.05	No Relaxation	N.D.
22	Total Alkalinity (as $CaCO_3$)	mg/L	IS:3025 (Part-23)-2023	200	600	44
23	Total Hardness (as $CaCO_3$)	mg/L	IS:3025(Part-21):2009 RA 2019	200	600	66
24	Zinc (as Zn)	mg/L	IS:3025(Part-49):1994 RA 2019	5	15	N.D.
C.	Parameters concerning toxic substances:-					
1	Cadmium (as Cd)	mg/L	IS:3025(Part-41):2023	0.003	No Relaxation	N.D.
2	Cyanide (as CN)	mg/L	APHA 24th Ed.2023, 4500-CN--F, 374	0.05	No Relaxation	N.D.
3	Lead (as Pb)	mg/L	IS:3025(Part-47):1994 RA 2019	0.01	No Relaxation	N.D.
4	Mercury (as Hg)	mg/L	IS:3025(Part-48):1994 RA 2019	0.001	No Relaxation	N.D.
5	Molybdenum (as Mo)	mg/L	IS:3025(Part-2)	0.07	No Relaxation	N.D.
6	Nickel (as Ni)	mg/L	IS:3025(Part-54):2003 RA 2019	0.02	No Relaxation	N.D.
7	Polychlorinated biphenyls	mg/L	APHA 24th Ed. 6431-PCB-B, 702	0.0005	No Relaxation	N.D.
8	Polynuclear aromatic hydrocarbons (as PAH)	mg/L	APHA 24th Ed. 6440-PAH-B, 703	0.0001	No Relaxation	N.D.
9	Arsenic (as As)	mg/L	IS:3025(Part-37):2022	0.01	0.05	N.D.
10	Chromium (as Cr)	mg/L	IS:3025(Part-52):2003 RA 2019	0.05	No Relaxation	N.D.
11	Trihalomethanes:					
a)	Bromoform	mg/L	APHA 6232	0.1	No Relaxation	N.D.
b)	Dibromochloromethane	mg/L	APHA 6232	0.1	No Relaxation	N.D.
c)	Bromodichloromethane	mg/L	APHA 6232	0.06	No Relaxation	N.D.
d)	Chloroform	mg/L	APHA 6232	0.2	No Relaxation	N.D.
D.	Pesticides:-					
1	Alpha HCH	µg/l	USEPA 508	0.01		N.D.
2	Beta HCH	µg/l	USEPA 508	0.04		N.D.
3	Delta HCH	µg/l	USEPA 508	0.04		N.D.
4	Alachlor	µg/l	USEPA 525.2, 507	20		N.D.
5	Aldrin / Dieldrin	µg/l	USEPA 508	0.03		N.D.
6	Atrazine	µg/l	USEPA 525.2,8141 A	2		N.D.
7	Butachlor	µg/l	USEPA 525.2,8141 A	125		N.D.

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LAB 2 : HIG-36 PHASE II, KABIR NAGAR, RAIPUR (C.G.)- 492099
PH- 0771-4523921 /Email - uespllab@gmail.com

REPORT NO.: 06117

TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012 Acceptable Limit	AS PER IS 10500:2012 Permissible limit	RESULT
8	Chlorpyriphos	µg/l	USEPA 525.2,8141 A	30		N.D.
9	DDT (o,p and p, p-Isomers of DDT, DDE and DDD)	µg/l	USEPA 508	1		N.D.
10	Gamma HCH	µg/l	USEPA 508	2		N.D.
11	2,4-Dichlorophenoxyacetic Acid	µg/l	USEPA 515.1	30		N.D.
12	Endosulphan (alpha, beta and sulphate)	µg/l	USEPA 508	0.4		N.D.
13	Ethion	µg/l	USEPA 1657 A	3		N.D.
14	Isoproturon	µg/l	USEPA 532	9		N.D.
15	Malathion	µg/l	USEPA 8141 A	190		N.D.
16	Methyl Parathion	µg/l	USEPA 8141 A	0.3		N.D.
17	Monocrotophos	µg/l	USEPA 8141 A	1		N.D.
18	Phorate	µg/l	USEPA 8141 A	2		N.D.
E.	Microbial Parameters					
1	Total Coliform	CFU/ 100ml	IS:15185:2016:RA:2021	Shall not be detectable in any 100ml sample		Absent
2	E. Coli	CFU/ 100ml	IS:15185:2016:RA:2021	Shall not be detectable in any 100ml sample		Absent

Note: mg/lit.: milligram per liter, N.D. - Not Detected

REMARKS: RESULTS ARE AS ABOVE

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REVIEWED BY		For ULTIMATE ENVIROLYTICAL SOLUTIONS PVT LTD
13/3/26		13/03/26
REVIEWED BY		**AUTHORIZED SIGNATORY**

-----------------------------------*End of the test report*-----------------------------------

Ultimate
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LAB 1 : HDD-272, PHASE III - NEAR JP CHOWK, RING ROAD NO-2
KABIR NAGAR, RAIPUR (C.G.)-492099
LAB 2 : HIG-36 PHASE II, KABIR NAGAR, RAIPUR (C.G.)- 492099
PH- 0771-4523921 /Email - uespllab@gmail.com

Name & Address of The Customer	Report No.	UESPL/TR/25-26/06118	
To,	Lab Ref No.	UESPL/25-26/W/10996	
M/s DB Power Limited	Date of Sampling	07/03/2026	
Village- Badadhara	Date of Receipt	09/03/2026	
Dist.-Sakti (C.G) 495695	Date of Report	13/03/2026	
	Date of analysis	Start: 09/03/2026	End: 13/03/2026

SAMPLE DETAILS	
Customer Sample Id /Sampling Location	DM Plant
Customer Ref. No. & Date	8200006833, Dated: 22.07.2025
Sample Type	Drinking Water
Packing of Sample	Plastic Bottle (5.0 Ltr.) Glass Bottle (1.0 Ltr.)
Sample Collected By	Laboratory Chemist
Sample Condition at Receipt	Ok

REPORT NO.: 06118

TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012 Acceptable Limit	Permissible limit	RESULT
A.	Organoleptic & Physical Parameters					
1	Colour	Hazen	IS:3025(Part-4):2021	5	15	<1.0
2	Odour	–	IS:3025(Part-5):1983	Agreeable	Agreeable	Agreeable
3	pH Value at 25.2°C	–	IS:3025(Part-11):2022	6.5-8.5	No Relaxation	7.34
4	Taste	–	IS:3025(Part-8):2017	Agreeable	Agreeable	Agreeable
5	Turbidity	NTU	IS:3025(Part-10):2023	1	5	0.68
6	Total Dissolved Solids	mg/L	IS:3025(Part-16):2023	500	2000	90
B.	General Parameters Concerning Substances undesirable in excessive amounts					
1	Aluminium (as Al)	mg/L	IS:3025(Part-55):2003 RA 2019	0.03	0.2	N.D.
2	Ammonia (as total ammonia-N)	mg/L	APHA 24th Ed.2023, 4500-NH_3-B&C, 424-425	0.5	No Relaxation	N.D.
3	Anionic Detergent (as MBAS)	mg/L	APHA 24th Ed.2023, 5540-MBAS-C, 585	0.2	1.0	N.D.
4	Barium (as Ba)	mg/L	APHA 24th Ed.2023,3500-Ba, 252	0.7	No Relaxation	N.D.
5	Boron (as B)	mg/L	APHA 24th Ed.2023,4500-B-B, 328	0.5	1.0	N.D.
6	Calcium (as Ca)	mg/L	IS:3025(Part-40):1991 RA 2019	75	200	16.83
7	Chloramines (as Cl_2)	mg/L	IS:3025(Part-26)	4.0	No Relaxation	N.D.
8	Chloride (as Cl)	mg/L	IS:3025(Part-32):1988 RA 2019	250	1000	5.9
9	Copper (as Cu)	mg/L	IS:3025(Part-42):1992 RA 2019	0.05	1.5	N.D.
10	Fluoride (as F)	mg/L	IS:3025(Part-60):2008 RA 2019	1	1.5	0.09
11	Free Residual Chlorine	mg/L	IS:3025(Part-26):2021	0.2	1	N.D.
12	Iron (as Fe)	mg/L	IS:3025(Part-53):2003 RA 2019	0.3	No Relaxation	N.D.
13	Magnesium (as Mg)	mg/L	APHA 24th Ed.2023,3500-Mg-B, 274	30	100	6.81
14	Manganese (as Mn)	mg/L	USEPA - SW - 846 : Method -7000B	0.1	0.3	N.D.
15	Mineral Oil	mg/L	Clause 6 of IS 3025 (Part-39) Infrared partition method	0.5	No Relaxation	N.D.

Ultimate
ENVIROLYTICAL SOLUTIONS PVT. LTD.

LAB 1 : HDD-272, PHASE III - NEAR JP CHOWK, RING ROAD NO-2
KABIR NAGAR, RAIPUR (C.G.)-492099
LAB 2 : HIG-36 PHASE II, KABIR NAGAR, RAIPUR (C.G.)- 492099
PH- 0771-4523921 /Email - uespllab@gmail.com

REPORT NO.: 06118

TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012 Acceptable Limit	Permissible limit	RESULT
16	Nitrate (as NO_3)	mg/L	APHA 24th Ed.2023,4500-NO3-B, 434-435	45	No Relaxation	0.92
17	Phenolic Compound (as C_6H_5OH)	mg/L	APHA 24th Ed.2023, 6420-P-OH-C, 702	0.001	0.002	N.D.
18	Selenium (as Se)	mg/L	IS:3025(Part-56):2003	0.01	No Relaxation	N.D.
19	Silver (as Ag)	mg/L	APHA 24th Ed.2023,3500-Ag, 289	0.1	No Relaxation	N.D.
20	Sulphate (as SO_4)	mg/L	IS:3025(Part-24/Sec.1):2022	200	400	3.72
21	Sulphide (as H_2S)	mg/L	IS:3025(Part 29):2023	0.05	No Relaxation	N.D.
22	Total Alkalinity (as $CaCO_3$)	mg/L	IS:3025 (Part-23)-2023	200	600	48
23	Total Hardness (as $CaCO_3$)	mg/L	IS:3025(Part-21):2009 RA 2019	200	600	70
24	Zinc (as Zn)	mg/L	IS:3025(Part-49):1994 RA 2019	5	15	N.D.
C.	Parameters concerning toxic substances:-					
1	Cadmium (as Cd)	mg/L	IS:3025(Part-41):2023	0.003	No Relaxation	N.D.
2	Cyanide (as CN)	mg/L	APHA 24th Ed.2023, 4500-CN--F, 374	0.05	No Relaxation	N.D.
3	Lead (as Pb)	mg/L	IS:3025(Part-47):1994 RA 2019	0.01	No Relaxation	N.D.
4	Mercury (as Hg)	mg/L	IS:3025(Part-48):1994 RA 2019	0.001	No Relaxation	N.D.
5	Molybdenum (as Mo)	mg/L	IS:3025(Part-2)	0.07	No Relaxation	N.D.
6	Nickel (as Ni)	mg/L	IS:3025(Part-54):2003 RA 2019	0.02	No Relaxation	N.D.
7	Polychlorinated biphenyls	mg/L	APHA 24th Ed. 6431-PCB-B, 702	0.0005	No Relaxation	N.D.
8	Polynuclear aromatic hydrocarbons (as PAH)	mg/L	APHA 24th Ed. 6440-PAH-B, 703	0.0001	No Relaxation	N.D.
9	Arsenic (as As)	mg/L	IS:3025(Part-37):2022	0.01	0.05	N.D.
10	Chromium (as Cr)	mg/L	IS:3025(Part-52):2003 RA 2019	0.05	No Relaxation	N.D.
11	Trihalomethanes:					
a)	Bromoform	mg/L	APHA 6232	0.1	No Relaxation	N.D.
b)	Dibromochloromethane	mg/L	APHA 6232	0.1	No Relaxation	N.D.
c)	Bromodichloromethane	mg/L	APHA 6232	0.06	No Relaxation	N.D.
d)	Chloroform	mg/L	APHA 6232	0.2	No Relaxation	N.D.
D.	Pesticides:-					
1	Alpha HCH	µg/l	USEPA 508	0.01		N.D.
2	Beta HCH	µg/l	USEPA 508	0.04		N.D.
3	Delta HCH	µg/l	USEPA 508	0.04		N.D.
4	Alachlor	µg/l	USEPA 525.2, 507	20		N.D.
5	Aldrin / Dieldrin	µg/l	USEPA 508	0.03		N.D.
6	Atrazine	µg/l	USEPA 525.2,8141 A	2		N.D.
7	Butachlor	µg/l	USEPA 525.2,8141 A	125		N.D.

Ultimate
ENVIROLYTICAL SOLUTIONS PVT. LTD.

LAB 1 : HDD-272, PHASE III - NEAR JP CHOWK, RING ROAD NO-2
KABIR NAGAR, RAIPUR (C.G.)-492099
LAB 2 : HIG-36 PHASE II, KABIR NAGAR, RAIPUR (C.G.)- 492099
PH- 0771-4523921 /Email - uespllab@gmail.com

REPORT NO.: 06118

TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012 Acceptable Limit	Permissible limit	RESULT
8	Chlorpyriphos	µg/l	USEPA 525.2,8141 A	30		N.D.
9	DDT (o,p and p, p-Isomers of DDT, DDE and DDD)	µg/l	USEPA 508	1		N.D.
10	Gamma HCH	µg/l	USEPA 508	2		N.D.
11	2,4-Dichlorophenoxyacetic Acid	µg/l	USEPA 515.1	30		N.D.
12	Endosulphan (alpha, beta and sulphate)	µg/l	USEPA 508	0.4		N.D.
13	Ethion	µg/l	USEPA 1657 A	3		N.D.
14	Isoproturon	µg/l	USEPA 532	9		N.D.
15	Malathion	µg/l	USEPA 8141 A	190		N.D.
16	Methyl Parathion	µg/l	USEPA 8141 A	0.3		N.D.
17	Monocrotophos	µg/l	USEPA 8141 A	1		N.D.
18	Phorate	µg/l	USEPA 8141 A	2		N.D.
E.	Microbial Parameters					
1	Total Coliform	CFU/ 100ml	IS:15185:2016:RA:2021	Shall not be detectable in any 100ml sample		Absent
2	E. Coli	CFU/ 100ml	IS:15185:2016:RA:2021	Shall not be detectable in any 100ml sample		Absent

Note: mg/lit.: milligram per liter, N.D. – Not Detected

REMARKS: RESULTS ARE AS ABOVE

Terms & conditions

- *The use of the report for publication, arbitration or as legal dispute is forbidden.*
- *Test sample will be retained for 15 days after issue of test report unless otherwise agreed with customer.*
- *This is for information as the party has asked for above test(s) only.*

REVIEWED BY		For ULTIMATE ENVIROLYTICAL SOLUTIONS PVT LTD
13/3/26		13/03/26
REVIEWED BY		**AUTHORIZED SIGNATORY**

-----------------End of the test report-----------------

Ultimate
ENVIROLYTICAL SOLUTIONS PVT. LTD.

LAB 1 : HDD-272, PHASE III - NEAR JP CHOWK, RING ROAD NO-2
KABIR NAGAR, RAIPUR (C.G.)-492099
LAB 2 : HIG-36 PHASE II, KABIR NAGAR, RAIPUR (C.G.)- 492099
PH- 0771-4523921 /Email - uespllab@gmail.com

Name & Address of The Customer	Report No.	UESPL/TR/25-26/06119	
To,	Lab Ref No.	UESPL/25-26/W/10997	
M/s DB Power Limited	Date of Sampling	07/03/2026	
Village- Badadhara	Date of Receipt	09/03/2026	
Dist.-Sakti (C.G) 495695	Date of Report	13/03/2026	
	Date of analysis	Start: 09/03/2026	End: 13/03/2026

SAMPLE DETAILS	
Customer Sample Id /Sampling Location	Service Building
Customer Ref. No. & Date	8200006833, Dated: 22.07.2025
Sample Type	Drinking Water
Packing of Sample	Plastic Bottle (5.0 Ltr.) Glass Bottle (1.0 Ltr.)
Sample Collected By	Laboratory Chemist
Sample Condition at Receipt	Ok

REPORT NO.: 06119

TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012 Acceptable Limit	AS PER IS 10500:2012 Permissible limit	RESULT
A.	Organoleptic & Physical Parameters					
1	Colour	Hazen	IS:3025(Part-4):2021	5	15	<1.0
2	Odour	-	IS:3025(Part-5):1983	Agreeable	Agreeable	Agreeable
3	pH Value at 25.2°C	-	IS:3025(Part-11):2022	6.5-8.5	No Relaxation	7.39
4	Taste	-	IS:3025(Part-8):2017	Agreeable	Agreeable	Agreeable
5	Turbidity	NTU	IS:3025(Part-10):2023	1	5	0.58
6	Total Dissolved Solids	mg/L	IS:3025(Part-16):2023	500	2000	96
B.	General Parameters Concerning Substances undesirable in excessive amounts					
1	Aluminium (as Al)	mg/L	IS:3025(Part-55):2003 RA 2019	0.03	0.2	N.D.
2	Ammonia (as total ammonia-N)	mg/L	APHA 24th Ed.2023, 4500-NH_3-B&C, 424-425	0.5	No Relaxation	N.D.
3	Anionic Detergent (as MBAS)	mg/L	APHA 24th Ed.2023, 5540-MBAS-C, 585	0.2	1.0	N.D.
4	Barium (as Ba)	mg/L	APHA 24th Ed.2023,3500-Ba, 252	0.7	No Relaxation	N.D.
5	Boron (as B)	mg/L	APHA 24th Ed.2023,4500-B-B, 328	0.5	1.0	N.D.
6	Calcium (as Ca)	mg/L	IS:3025(Part-40):1991 RA 2019	75	200	12.02
7	Chloramines (as Cl_2)	mg/L	IS:3025(Part-26)	4.0	No Relaxation	N.D.
8	Chloride (as Cl)	mg/L	IS:3025(Part-32):1988 RA 2019	250	1000	6.9
9	Copper (as Cu)	mg/L	IS:3025(Part-42):1992 RA 2019	0.05	1.5	N.D.
10	Fluoride (as F)	mg/L	IS:3025(Part-60):2008 RA 2019	1	1.5	0.12
11	Free Residual Chlorine	mg/L	IS:3025(Part-26):2021	0.2	1	N.D.
12	Iron (as Fe)	mg/L	IS:3025(Part-53):2003 RA 2019	0.3	No Relaxation	N.D.
13	Magnesium (as Mg)	mg/L	APHA 24th Ed.2023,3500-Mg-B, 274	30	100	5.83
14	Manganese (as Mn)	mg/L	USEPA - SW - 846 : Method -7000B	0.1	0.3	N.D.
15	Mineral Oil	mg/L	Clause 6 of IS 3025 (Part-39) Infrared	0.5	No Relaxation	N.D.

Ultimate
ENVIROLYTICAL SOLUTIONS PVT. LTD.

LAB 1 : HDD-272, PHASE III - NEAR JP CHOWK, RING ROAD NO-2
KABIR NAGAR, RAIPUR (C.G.)-492099
LAB 2 : HIG-36 PHASE II, KABIR NAGAR, RAIPUR (C.G.)- 492099
PH- 0771-4523921 /Email - uespllab@gmail.com

REPORT NO.: 06119

TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012 Acceptable Limit	Permissible limit	RESULT
16	Nitrate (as NO_3)	mg/L	APHA 24th Ed.2023,4500-NO3-B, 434-435	45	No Relaxation	0.78
17	Phenolic Compound (as C_6H_5OH)	mg/L	APHA 24th Ed.2023, 6420-P-OH-C, 702	0.001	0.002	N.D.
18	Selenium (as Se)	mg/L	IS:3025(Part-56):2003	0.01	No Relaxation	N.D.
19	Silver (as Ag)	mg/L	APHA 24th Ed.2023,3500-Ag, 289	0.1	No Relaxation	N.D.
20	Sulphate (as SO_4)	mg/L	IS:3025(Part-24/Sec.1):2022	200	400	3.22
21	Sulphide (as H_2S)	mg/L	IS:3025(Part 29):2023	0.05	No Relaxation	N.D.
22	Total Alkalinity (as $CaCO_3$)	mg/L	IS:3025 (Part-23)-2023	200	600	42
23	Total Hardness (as $CaCO_3$)	mg/L	IS:3025(Part-21):2009 RA 2019	200	600	54
24	Zinc (as Zn)	mg/L	IS:3025(Part-49):1994 RA 2019	5	15	N.D.
C.	Parameters concerning toxic substances:-					
1	Cadmium (as Cd)	mg/L	IS:3025(Part-41):2023	0.003	No Relaxation	N.D.
2	Cyanide (as CN)	mg/L	APHA 24th Ed.2023, 4500-CN--F, 374	0.05	No Relaxation	N.D.
3	Lead (as Pb)	mg/L	IS:3025(Part-47):1994 RA 2019	0.01	No Relaxation	N.D.
4	Mercury (as Hg)	mg/L	IS:3025(Part-48):1994 RA 2019	0.001	No Relaxation	N.D.
5	Molybdenum (as Mo)	mg/L	IS:3025(Part-2)	0.07	No Relaxation	N.D.
6	Nickel (as Ni)	mg/L	IS:3025(Part-54):2003 RA 2019	0.02	No Relaxation	N.D.
7	Polychlorinated biphenyls	mg/L	APHA 24th Ed. 6431-PCB-B, 702	0.0005	No Relaxation	N.D.
8	Polynuclear aromatic hydrocarbons (as PAH)	mg/L	APHA 24th Ed. 6440-PAH-B, 703	0.0001	No Relaxation	N.D.
9	Arsenic (as As)	mg/L	IS:3025(Part-37):2022	0.01	0.05	N.D.
10	Chromium (as Cr)	mg/L	IS:3025(Part-52):2003 RA 2019	0.05	No Relaxation	N.D.
11	Trihalomethanes:					
a)	Bromoform	mg/L	APHA 6232	0.1	No Relaxation	N.D.
b)	Dibromochloromethane	mg/L	APHA 6232	0.1	No Relaxation	N.D.
c)	Bromodichloromethane	mg/L	APHA 6232	0.06	No Relaxation	N.D.
d)	Chloroform	mg/L	APHA 6232	0.2	No Relaxation	N.D.
D.	Pesticides:-					
1	Alpha HCH	µg/l	USEPA 508	0.01		N.D.
2	Beta HCH	µg/l	USEPA 508	0.04		N.D.
3	Delta HCH	µg/l	USEPA 508	0.04		N.D.
4	Alachlor	µg/l	USEPA 525.2, 507	20		N.D.
5	Aldrin / Dieldrin	µg/l	USEPA 508	0.03		N.D.
6	Atrazine	µg/l	USEPA 525.2,8141 A	2		N.D.
7	Butachlor	µg/l	USEPA 525.2,8141 A	125		N.D.

Ultimate
ENVIROLYTICAL SOLUTIONS PVT. LTD.

LAB 1 : HDD-272, PHASE III - NEAR JP CHOWK, RING ROAD NO-2
KABIR NAGAR, RAIPUR (C.G.)-492099
LAB 2 : HIG-36 PHASE II, KABIR NAGAR, RAIPUR (C.G.)- 492099
PH- 0771-4523921 /Email - uespllab@gmail.com

REPORT NO.: 06119

TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012 Acceptable Limit	AS PER IS 10500:2012 Permissible limit	RESULT
8	Chlorpyriphos	µg/l	USEPA 525.2,8141 A	30		N.D.
9	DDT (o,p and p, p-Isomers of DDT, DDE and DDD)	µg/l	USEPA 508	1		N.D.
10	Gamma HCH	µg/l	USEPA 508	2		N.D.
11	2,4-Dichlorophenoxyacetic Acid	µg/l	USEPA 515.1	30		N.D.
12	Endosulphan (alpha, beta and sulphate)	µg/l	USEPA 508	0.4		N.D.
13	Ethion	µg/l	USEPA 1657 A	3		N.D.
14	Isoproturon	µg/l	USEPA 532	9		N.D.
15	Malathion	µg/l	USEPA 8141 A	190		N.D.
16	Methyl Parathion	µg/l	USEPA 8141 A	0.3		N.D.
17	Monocrotophos	µg/l	USEPA 8141 A	1		N.D.
18	Phorate	µg/l	USEPA 8141 A	2		N.D.
E.	Microbial Parameters					
1	Total Coliform	CFU/ 100ml	IS:15185:2016:RA:2021	Shall not be detectable in any 100ml sample		Absent
2	E. Coli	CFU/ 100ml	IS:15185:2016:RA:2021	Shall not be detectable in any 100ml sample		Absent

Note: mg/lit.: milligram per liter, N.D. – Not Detected

REMARKS: RESULTS ARE AS ABOVE

Terms & conditions

- *The use of the report for publication, arbitration or as legal dispute is forbidden.*
- *Test sample will be retained for 15 days after issue of test report unless otherwise agreed with customer.*
- *This is for information as the party has asked for above test(s) only.*

13/3/26 REVIEWED BY		For ULTIMATE ENVIROLYTICAL SOLUTIONS PVT LTD 13/03/26 AUTHORIZED SIGNATORY

-------------------------------End of the test report-------------------------------

Ultimate
ENVIROLYTICAL SOLUTIONS PVT. LTD.

LAB 1 : HDD-272, PHASE III - NEAR JP CHOWK, RING ROAD NO-2
KABIR NAGAR, RAIPUR (C.G.)-492099
LAB 2 : HIG-36 PHASE II, KABIR NAGAR, RAIPUR (C.G.)- 492099
PH- 0771-4523921 /Email - uesplab@gmail.com

Name & Address of The Customer			
To, M/s DB Power Limited Village- Badadhara Dist.-Sakti (C.G) 495695	Report No.	UESPL/TR/25-26/06120	
	Lab Ref No.	UESPL/25-26/W/10998	
	Date of Sampling	07/03/2026	
	Date of Receipt	09/03/2026	
	Date of Report	13/03/2026	
	Date of analysis	Start: 09/03/2026	End: 13/03/2026

SAMPLE DETAILS	
Customer Sample Id /Sampling Location	Mine Water Tank
Customer Ref. No. & Date	8200006833, Dated: 22.07.2025
Sample Type	Drinking Water
Packing of Sample	Plastic Bottle (5.0 Ltr.) Glass Bottle (1.0 Ltr.)
Sample Collected By	Laboratory Chemist
Sample Condition at Receipt	Ok

REPORT NO.: 06120

TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
A.	Organoleptic & Physical Parameters					
1	Colour	Hazen	IS:3025(Part-4):2021	5	15	<1.0
2	Odour	-	IS:3025(Part-5):1983	Agreeable	Agreeable	Agreeable
3	pH Value at 25.2°C	-	IS:3025(Part-11):2022	6.5-8.5	No Relaxation	7.48
4	Taste	-	IS:3025(Part-8):2017	Agreeable	Agreeable	Agreeable
5	Turbidity	NTU	IS:3025(Part-10):2023	1	5	0.72
6	Total Dissolved Solids	mg/L	IS:3025(Part-16):2023	500	2000	104
B.	General Parameters Concerning Substances undesirable in excessive amounts					
1	Aluminium (as Al)	mg/L	IS:3025(Part-55):2003 RA 2019	0.03	0.2	N.D.
2	Ammonia (as total ammonia-N)	mg/L	APHA 24th Ed.2023, 4500-NH_3-B&C, 424-425	0.5	No Relaxation	N.D.
3	Anionic Detergent (as MBAS)	mg/L	APHA 24th Ed.2023, 5540-MBAS-C, 585	0.2	1.0	N.D.
4	Barium (as Ba)	mg/L	APHA 24th Ed.2023,3500-Ba, 252	0.7	No Relaxation	N.D.
5	Boron (as B)	mg/L	APHA 24th Ed.2023,4500-B-B, 328	0.5	1.0	N.D.
6	Calcium (as Ca)	mg/L	IS:3025(Part-40):1991 RA 2019	75	200	14.42
7	Chloramines (as Cl_2)	mg/L	IS:3025(Part-26)	4.0	No Relaxation	N.D.
8	Chloride (as Cl)	mg/L	IS:3025(Part-32):1988 RA 2019	250	1000	8.9
9	Copper (as Cu)	mg/L	IS:3025(Part-42):1992 RA 2019	0.05	1.5	N.D.
10	Fluoride (as F)	mg/L	IS:3025(Part-60):2008 RA 2019	1	1.5	0.1
11	Free Residual Chlorine	mg/L	IS:3025(Part-26):2021	0.2	1	N.D.
12	Iron (as Fe)	mg/L	IS:3025(Part-53):2003 RA 2019	0.3	No Relaxation	N.D.
13	Magnesium (as Mg)	mg/L	APHA 24th Ed.2023,3500-Mg-B, 274	30	100	5.83
14	Manganese (as Mn)	mg/L	USEPA - SW - 846 : Method -7000B	0.1	0.3	N.D.
15	Mineral Oil	mg/L	Clause 6 of IS 3025 (Part-39) Infrared partition method	0.5	No Relaxation	N.D.

Ultimate
ENVIROLYTICAL SOLUTIONS PVT. LTD.

LAB 1 : HDD-272, PHASE III - NEAR JP CHOWK, RING ROAD NO-2
KABIR NAGAR, RAIPUR (C.G.)-492099
LAB 2 : HIG-36 PHASE II, KABIR NAGAR, RAIPUR (C.G.)- 492099
PH- 0771-4523921 /Email - uespllab@gmail.com

REPORT NO.: 06120

TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012 Acceptable Limit	AS PER IS 10500:2012 Permissible limit	RESULT
16	Nitrate (as NO_3)	mg/L	APHA 24th Ed.2023,4500-NO3-B, 434-435	45	No Relaxation	0.84
17	Phenolic Compound (as C_6H_5OH)	mg/L	APHA 24th Ed.2023, 6420-P-OH-C, 702	0.001	0.002	N.D.
18	Selenium (as Se)	mg/L	IS:3025(Part-56):2003	0.01	No Relaxation	N.D.
19	Silver (as Ag)	mg/L	APHA 24th Ed.2023,3500-Ag, 289	0.1	No Relaxation	N.D.
20	Sulphate (as SO_4)	mg/L	IS:3025(Part-24/Sec.1):2022	200	400	4.68
21	Sulphide (as H_2S)	mg/L	IS:3025(Part 29):2023	0.05	No Relaxation	N.D.
22	Total Alkalinity (as $CaCO_3$)	mg/L	IS:3025 (Part-23)-2023	200	600	50
23	Total Hardness (as $CaCO_3$)	mg/L	IS:3025(Part-21):2009 RA 2019	200	600	60
24	Zinc (as Zn)	mg/L	IS:3025(Part-49):1994 RA 2019	5	15	N.D.
C.	Parameters concerning toxic substances:-					
1	Cadmium (as Cd)	mg/L	IS:3025(Part-41):2023	0.003	No Relaxation	N.D.
2	Cyanide (as CN)	mg/L	APHA 24th Ed.2023, 4500-CN--F, 374	0.05	No Relaxation	N.D.
3	Lead (as Pb)	mg/L	IS:3025(Part-47):1994 RA 2019	0.01	No Relaxation	N.D.
4	Mercury (as Hg)	mg/L	IS:3025(Part-48):1994 RA 2019	0.001	No Relaxation	N.D.
5	Molybdenum (as Mo)	mg/L	IS:3025(Part-2)	0.07	No Relaxation	N.D.
6	Nickel (as Ni)	mg/L	IS:3025(Part-54):2003 RA 2019	0.02	No Relaxation	N.D.
7	Polychlorinated biphenyls	mg/L	APHA 24th Ed. 6431-PCB-B, 702	0.0005	No Relaxation	N.D.
8	Polynuclear aromatic hydrocarbons (as PAH)	mg/L	APHA 24th Ed. 6440-PAH-B, 703	0.0001	No Relaxation	N.D.
9	Arsenic (as As)	mg/L	IS:3025(Part-37):2022	0.01	0.05	N.D.
10	Chromium (as Cr)	mg/L	IS:3025(Part-52):2003 RA 2019	0.05	No Relaxation	N.D.
11	Trihalomethanes:					
a)	Bromoform	mg/L	APHA 6232	0.1	No Relaxation	N.D.
b)	Dibromochlorometha ne	mg/L	APHA 6232	0.1	No Relaxation	N.D.
c)	Bromodichlorometha ne	mg/L	APHA 6232	0.06	No Relaxation	N.D.
d)	Chloroform	mg/L	APHA 6232	0.2	No Relaxation	N.D.
D.	Pesticides:-					
1	Alpha HCH	µg/l	USEPA 508	0.01		N.D.
2	Beta HCH	µg/l	USEPA 508	0.04		N.D.
3	Delta HCH	µg/l	USEPA 508	0.04		N.D.
4	Alachlor	µg/l	USEPA 525.2, 507	20		N.D.
5	Aldrin / Dieldrin	µg/l	USEPA 508	0.03		N.D.
6	Atrazine	µg/l	USEPA 525.2,8141 A	2		N.D.
7	Butachlor	µg/l	USEPA 525.2,8141 A	125		N.D.

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ENVIROLYTICAL SOLUTIONS PVT. LTD.

LAB 1 : HDD-272, PHASE III - NEAR JP CHOWK, RING ROAD NO-2
KABIR NAGAR, RAIPUR (C.G.)-492099
LAB 2 : HIG-36 PHASE II, KABIR NAGAR, RAIPUR (C.G.)- 492099
PH- 0771-4523921 /Email - uespllab@gmail.com

REPORT NO.: 06120

TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012 Acceptable Limit	AS PER IS 10500:2012 Permissible limit	RESULT
8	Chlorpyriphos	µg/l	USEPA 525.2,8141 A	30		N.D.
9	DDT (o,p and p, p-Isomers of DDT, DDE and DDD)	µg/l	USEPA 508	1		N.D.
10	Gamma HCH	µg/l	USEPA 508	2		N.D.
11	2,4-Dichlorophenoxyacetic Acid	µg/l	USEPA 515.1	30		N.D.
12	Endosulphan (alpha, beta and sulphate)	µg/l	USEPA 508	0.4		N.D.
13	Ethion	µg/l	USEPA 1657 A	3		N.D.
14	Isoproturon	µg/l	USEPA 532	9		N.D.
15	Malathion	µg/l	USEPA 8141 A	190		N.D.
16	Methyl Parathion	µg/l	USEPA 8141 A	0.3		N.D.
17	Monocrotophos	µg/l	USEPA 8141 A	1		N.D.
18	Phorate	µg/l	USEPA 8141 A	2		N.D.
E.	Microbial Parameters					
1	Total Coliform	CFU/ 100ml	IS:15185:2016:RA:2021	Shall not be detectable in any 100ml sample		Absent
2	E. Coli	CFU/ 100ml	IS:15185:2016:RA:2021	Shall not be detectable in any 100ml sample		Absent

Note: mg/lit.: milligram per liter, N.D. – Not Detected

REMARKS: RESULTS ARE AS ABOVE

Terms & conditions

- *The use of the report for publication, arbitration or as legal dispute is forbidden.*
- *Test sample will be retained for 15 days after issue of test report unless otherwise agreed with customer.*
- *This is for information as the party has asked for above test(s) only.*

REVIEWED BY		For ULTIMATE ENVIROLYTICAL SOLUTIONS PVT LTD
13/3/26		13/03/26
REVIEWED BY		AUTHORIZED SIGNATORY

-----End of the test report-----

Ultimate
ENVIROLYTICAL SOLUTIONS PVT. LTD.

LAB 1 : HOD-272, PHASE III - NEAR JP CHOWK, RING ROAD NO-2 KABIR NAGAR, RAIPUR (C.G.)-492099
LAB 2 : HIG-36 PHASE II, KABIR NAGAR, RAIPUR (C.G.)- 492099
PH- 0771-4523921 /Email - uespllab@gmail.com

Name & Address Of The Customer	Report No.	UESPL/TR/25-26/06121	
To,	Lab Ref No.	UESPL/25-26/W/10999	
M/s DB Power Limited	Date of Sampling	07/03/2026	
Village- Badadhara	Date of Receipt	09/03/2026	
Dist.-Sakti (C.G) 495695	Date of Report	13/03/2026	
	Date of analysis	Start: 09/03/2026	End: 13/03/2026

SAMPLE DETAILS	
Customer Sample Id /Sampling Location	Wagon Tipper CHP
Customer Ref. No. & Date	8200006833, Dated: 22.07.2025
Sample Type	Drinking Water
Packing of Sample	Plastic Bottle (5.0 Ltr.) Glass Bottle (1.0 Ltr.)
Sample Collected By	Laboratory Chemist
Sample Condition at Receipt	Ok

REPORT NO.: 06121

TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012 Acceptable Limit	Permissible limit	RESULT
A.	Organoleptic & Physical Parameters					
1	Colour	Hazen	IS:3025(Part-4):2021	5	15	<1.0
2	Odour	–	IS:3025(Part-5):1983	Agreeable	Agreeable	Agreeable
3	pH Value at 25.2°C	–	IS:3025(Part-11):2022	6.5-8.5	No Relaxation	7.42
4	Taste	–	IS:3025(Part-8):2017	Agreeable	Agreeable	Agreeable
5	Turbidity	NTU	IS:3025(Part-10):2023	1	5	0.78
6	Total Dissolved Solids	mg/L	IS:3025(Part-16):2023	500	2000	98
B.	General Parameters Concerning Substances undesirable in excessive amounts					
1	Aluminium (as Al)	mg/L	IS:3025(Part-55):2003 RA 2019	0.03	0.2	N.D.
2	Ammonia (as total ammonia-N)	mg/L	APHA 24th Ed.2023, 4500-NH_3-B&C, 424-425	0.5	No Relaxation	N.D.
3	Anionic Detergent (as MBAS)	mg/L	APHA 24th Ed.2023, 5540-MBAS-C, 585	0.2	1.0	N.D.
4	Barium (as Ba)	mg/L	APHA 24th Ed.2023,3500-Ba, 252	0.7	No Relaxation	N.D.
5	Boron (as B)	mg/L	APHA 24th Ed.2023,4500-B-B, 328	0.5	1.0	N.D.
6	Calcium (as Ca)	mg/L	IS:3025(Part-40):1991 RA 2019	75	200	20.04
7	Chloramines (as Cl_2)	mg/L	IS:3025(Part-26)	4.0	No Relaxation	N.D.
8	Chloride (as Cl)	mg/L	IS:3025(Part-32):1988 RA 2019	250	1000	10.9
9	Copper (as Cu)	mg/L	IS:3025(Part-42):1992 RA 2019	0.05	1.5	N.D.
10	Fluoride (as F)	mg/L	IS:3025(Part-60):2008 RA 2019	1	1.5	0.11
11	Free Residual Chlorine	mg/L	IS:3025(Part-26):2021	0.2	1	N.D.
12	Iron (as Fe)	mg/L	IS:3025(Part-53):2003 RA 2019	0.3	No Relaxation	N.D.
13	Magnesium (as Mg)	mg/L	APHA 24th Ed.2023,3500-Mg-B, 274	30	100	8.26
14	Manganese (as Mn)	mg/L	USEPA – SW – 846 : Method -7000B	0.1	0.3	N.D.
15	Mineral Oil	mg/L	Clause 6 of IS 3025 (Part-39) Infrared partition method	0.5	No Relaxation	N.D.

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ENVIROLYTICAL SOLUTIONS PVT. LTD.

LAB 1 : HDD-272, PHASE III - NEAR JP CHOWK, RING ROAD NO-2
KABIR NAGAR, RAIPUR (C.G.)-492099
LAB 2 : HIG-36 PHASE II, KABIR NAGAR, RAIPUR (C.G.)- 492099
PH- 0771-4523921 /Email - uespllab@gmail.com

REPORT NO.: 06121

TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012 Acceptable Limit	Permissible limit	RESULT
16	Nitrate (as NO_3)	mg/L	APHA 24th Ed.2023,4500-NO3-B, 434-435	45	No Relaxation	0.94
17	Phenolic Compound (as C_6H_5OH)	mg/L	APHA 24th Ed.2023, 6420-P-OH-C, 702	0.001	0.002	N.D.
18	Selenium (as Se)	mg/L	IS:3025(Part-56):2003	0.01	No Relaxation	N.D.
19	Silver (as Ag)	mg/L	APHA 24th Ed.2023,3500-Ag, 289	0.1	No Relaxation	N.D.
20	Sulphate (as SO_4)	mg/L	IS:3025(Part-24/Sec.1):2022	200	400	4.92
21	Sulphide (as H_2S)	mg/L	IS:3025(Part 29):2023	0.05	No Relaxation	N.D.
22	Total Alkalinity (as $CaCO_3$)	mg/L	IS:3025 (Part-23)-2023	200	600	46
23	Total Hardness (as $CaCO_3$)	mg/L	IS:3025(Part-21):2009 RA 2019	200	600	84
24	Zinc (as Zn)	mg/L	IS:3025(Part-49):1994 RA 2019	5	15	N.D.
C.	Parameters concerning toxic substances:-					
1	Cadmium (as Cd)	mg/L	IS:3025(Part-41):2023	0.003	No Relaxation	N.D.
2	Cyanide (as CN)	mg/L	APHA 24th Ed.2023, 4500-CN--F, 374	0.05	No Relaxation	N.D.
3	Lead (as Pb)	mg/L	IS:3025(Part-47):1994 RA 2019	0.01	No Relaxation	N.D.
4	Mercury (as Hg)	mg/L	IS:3025(Part-48):1994 RA 2019	0.001	No Relaxation	N.D.
5	Molybdenum (as Mo)	mg/L	IS:3025(Part-2)	0.07	No Relaxation	N.D.
6	Nickel (as Ni)	mg/L	IS:3025(Part-54):2003 RA 2019	0.02	No Relaxation	N.D.
7	Polychlorinated biphenyls	mg/L	APHA 24th Ed. 6431-PCB-B, 702	0.0005	No Relaxation	N.D.
8	Polynuclear aromatic hydrocarbons (as PAH)	mg/L	APHA 24th Ed. 6440-PAH-B, 703	0.0001	No Relaxation	N.D.
9	Arsenic (as As)	mg/L	IS:3025(Part-37):2022	0.01	0.05	N.D.
10	Chromium (as Cr)	mg/L	IS:3025(Part-52):2003 RA 2019	0.05	No Relaxation	N.D.
11	Trihalomethanes:					
a)	Bromoform	mg/L	APHA 6232	0.1	No Relaxation	N.D.
b)	Dibromochloromethane	mg/L	APHA 6232	0.1	No Relaxation	N.D.
c)	Bromodichloromethane	mg/L	APHA 6232	0.06	No Relaxation	N.D.
d)	Chloroform	mg/L	APHA 6232	0.2	No Relaxation	N.D.
D.	Pesticides:-					
1	Alpha HCH	µg/l	USEPA 508	0.01		N.D.
2	Beta HCH	µg/l	USEPA 508	0.04		N.D.
3	Delta HCH	µg/l	USEPA 508	0.04		N.D.
4	Alachlor	µg/l	USEPA 525.2, 507	20		N.D.
5	Aldrin / Dieldrin	µg/l	USEPA 508	0.03		N.D.
6	Atrazine	µg/l	USEPA 525.2,8141 A	2		N.D.
7	Butachlor	µg/l	USEPA 525.2,8141 A	125		N.D.

Ultimate
ENVIROLYTICAL SOLUTIONS PVT. LTD.

LAB 1 : HDD-272, PHASE III - NEAR JP CHOWK, RING ROAD NO-2
KABIR NAGAR, RAIPUR (C.G.)-492099
LAB 2 : HIG-36 PHASE II, KABIR NAGAR, RAIPUR (C.G.)- 492099
PH- 0771-4523921 /Email - uespllab@gmail.com

REPORT NO.: 06121

TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012 Acceptable Limit	AS PER IS 10500:2012 Permissible limit	RESULT
8	Chlorpyriphos	µg/l	USEPA 525.2,8141 A	30		N.D.
9	DDT (o,p and p, p-Isomers of DDT, DDE and DDD)	µg/l	USEPA 508	1		N.D.
10	Gamma HCH	µg/l	USEPA 508	2		N.D.
11	2,4-Dichlorophenoxyacetic Acid	µg/l	USEPA 515.1	30		N.D.
12	Endosulphan (alpha, beta and sulphate)	µg/l	USEPA 508	0.4		N.D.
13	Ethion	µg/l	USEPA 1657 A	3		N.D.
14	Isoproturon	µg/l	USEPA 532	9		N.D.
15	Malathion	µg/l	USEPA 8141 A	190		N.D.
16	Methyl Parathion	µg/l	USEPA 8141 A	0.3		N.D.
17	Monocrotophos	µg/l	USEPA 8141 A	1		N.D.
18	Phorate	µg/l	USEPA 8141 A	2		N.D.
E.	Microbial Parameters					
1	Total Coliform	CFU/ 100ml	IS:15185:2016:RA:2021	Shall not be detectable in any 100ml sample		Absent
2	E. Coli	CFU/ 100ml	IS:15185:2016:RA:2021	Shall not be detectable in any 100ml sample		Absent

Note: mg/lit.: milligram per liter, N.D. – Not Detected

REMARKS: RESULTS ARE AS ABOVE

Terms & conditions

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- *Test sample will be retained for 15 days after issue of test report unless otherwise agreed with customer.*
- *This is for information as the party has asked for above test(s) only.*

13/3/26 REVIEWED BY		For ULTIMATE ENVIROLYTICAL SOLUTIONS PVT LTD 13/03/26 AUTHORIZED SIGNATORY

----------End of the test report----------

Ultimate
ENVIROLYTICAL SOLUTIONS PVT. LTD.

LAB 1 : HDD-272, PHASE III - NEAR JP CHOWK, RING ROAD NO-2
KABIR NAGAR, RAIPUR (C.G.)-492099
LAB 2 : HIG-36 PHASE II, KABIR NAGAR, RAIPUR (C.G.)- 492099
PH- 0771-4523921 /Email - uespllab@gmail.com

Name & Address Of The Customer	Report No.	UESPL/TR/25-26/06122	
To,	Lab Ref No.	UESPL/25-26/W/11000	
M/s DB Power Limited	Date of Sampling	07/03/2026	
Village- Badadhara	Date of Receipt	09/03/2026	
Dist.-Sakti (C.G) 495695	Date of Report	13/03/2026	
	Date of analysis	Start: 09/03/2026	End: 13/03/2026

SAMPLE DETAILS	
Customer Sample Id /Sampling Location	Near – Tundri Village (Borewell Water)
Customer Ref. No. & Date	8200006833, Dated: 22.07.2025
Sample Type	Ground Water
Packing of Sample	Plastic Bottle (5.0 Ltr.) Glass Bottle (1.0 Ltr.)
Sample Collected By	Laboratory Chemist
Sample Condition at Receipt	Ok

REPORT NO.: 06122

TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	RESULT
A.	Organoleptic & Physical Parameters			
1	Colour	Hazen	IS:3025(Part-4):2021	<1.0
2	Odour	-	IS:3025(Part-5):1983	Agreeable
3	pH Value at 25.2°C	-	IS:3025(Part-11):2022	7.31
4	Taste	-	IS:3025(Part-8):2017	<1.0
5	Turbidity	NTU	IS:3025(Part-10):2023	0.38
6	Total Dissolved Solids	mg/L	IS:3025(Part-16):2023	296
B.	General Parameters Concerning Substances undesirable in excessive amounts			
1	Aluminium (as Al)	mg/L	IS:3025(Part-55):2003 RA 2019	N.D.
2	Ammonia (as total ammonia-N)	mg/L	APHA 24th Ed.2023, 4500-NH_3-B&C, 424-425	N.D.
3	Anionic Detergent (as MBAS)	mg/L	APHA 24th Ed.2023, 5540-MBAS-C, 585	N.D.
4	Barium (as Ba)	mg/L	APHA 24th Ed.2023,3500-Ba, 252	N.D.
5	Boron (as B)	mg/L	APHA 24th Ed.2023,4500-B-B, 328	N.D.
6	Calcium (as Ca)	mg/L	IS:3025(Part-40):1991 RA 2019	46.49
7	Chloramines (as Cl_2)	mg/L	IS:3025(Part-26)	N.D.
8	Chloride (as Cl)	mg/L	IS:3025(Part-32):1988 RA 2019	41.9
9	Copper (as Cu)	mg/L	IS:3025(Part-42):1992 RA 2019	N.D.
10	Fluoride (as F)	mg/L	IS:3025(Part-60):2008 RA 2019	0.14
11	Free Residual Chlorine	mg/L	IS:3025(Part-26):2021	N.D.
12	Iron (as Fe)	mg/L	IS:3025(Part-53):2003 RA 2019	N.D.
13	Magnesium (as Mg)	mg/L	APHA 24th Ed.2023,3500-Mg-B, 274	10.69
14	Manganese (as Mn)	mg/L	USEPA - SW - 846 : Method -7000B	N.D.
15	Mineral Oil	mg/L	Clause 6 of IS 3025 (Part-39) Infrared partition method	N.D.
16	Nitrate (as NO_3)	mg/L	APHA 24th Ed.2023,4500-NO3-B, 434-435	13.72
17	Phenolic Compound (as C_6H_5OH)	mg/L	APHA 24th Ed.2023, 6420-P-OH-C, 702	N.D.
18	Selenium (as Se)	mg/L	IS:3025(Part-56):2003	N.D.
19	Silver (as Ag)	mg/L	APHA 24th Ed.2023,3500-Ag, 289	N.D.
20	Sulphate (as SO_4)	mg/L	IS:3025(Part-24/Sec.1):2022	36.24
21	Sulphide (as H_2S)	mg/L	IS:3025(Part 29):2023	N.D.
22	Total Alkalinity (as $CaCO_3$)	mg/L	IS:3025 (Part-23)-2023	124
23	Total Hardness (as $CaCO_3$)	mg/L	IS:3025(Part-21):2009 RA 2019	160
24	Zinc (as Zn)	mg/L	IS:3025(Part-49):1994 RA 2019	N.D.
C.	Parameters concerning toxic substances:-			
1	Cadmium (as Cd)	mg/L	IS:3025(Part-41):2023	N.D.
2	Cyanide (as CN)	mg/L	APHA 24th Ed.2023, 4500-CN--F, 374	N.D.
3	Lead (as Pb)	mg/L	IS:3025(Part-47):1994 RA 2019	N.D.
4	Mercury (as Hg)	mg/L	IS:3025(Part-48):1994 RA 2019	N.D.
5	Molybdenum (as Mo)	mg/L	IS:3025(Part-2)	N.D.

Ultimate
ENVIROLYTICAL SOLUTIONS PVT. LTD.

LAB 1 : HDD-272, PHASE III - NEAR JP CHOWK, RING ROAD NO-2
KABIR NAGAR, RAIPUR (C.G.)-492099
LAB 2 : HIG-36 PHASE II, KABIR NAGAR, RAIPUR (C.G.)- 492099
PH- 0771-4523921 /Email - uespllab@gmail.com

REPORT NO.: 06122

TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	RESULT
6	Nickel (as Ni)	mg/L	IS:3025(Part-54):2003 RA 2019	N.D.
7	Polychlorinated biphenyls	mg/L	APHA 24th Ed. 6431-PCB-B, 702	N.D.
8	Polynuclear aromatic hydrocarbons (as PAH)	mg/L	APHA 24th Ed. 6440-PAH-B, 703	N.D.
9	Arsenic (as As)	mg/L	IS:3025(Part-37):2022	N.D.
10	Chromium (as Cr)	mg/L	IS:3025(Part-52):2003 RA 2019	N.D.
11	Trihalomethanes:			
a)	Bromoform	mg/L	APHA 6232	N.D.
b)	Dibromochloromethane	mg/L	APHA 6232	N.D.
c)	Bromodichloromethane	mg/L	APHA 6232	N.D.
d)	Chloroform	mg/L	APHA 6232	N.D.
D.	Pesticides:-			
1	Alpha HCH	µg/l	USEPA 508	N.D.
2	Beta HCH	µg/l	USEPA 508	N.D.
3	Delta HCH	µg/l	USEPA 508	N.D.
4	Alachlor	µg/l	USEPA 525.2, 507	N.D.
5	Aldrin / Dieldrin	µg/l	USEPA 508	N.D.
6	Atrazine	µg/l	USEPA 525.2,8141 A	N.D.
7	Butachlor	µg/l	USEPA 525.2,8141 A	N.D.
8	Chlorpyriphos	µg/l	USEPA 525.2,8141 A	N.D.
9	DDT (o,p and p, p-Isomers of DDT, DDE and DDD)	µg/l	USEPA 508	N.D.
10	Gamma HCH	µg/l	USEPA 508	N.D.
11	2,4-Dichlorophenoxyacetic Acid	µg/l	USEPA 515.1	N.D.
12	Endosulphan (alpha, beta and sulphate)	µg/l	USEPA 508	N.D.
13	Ethion	µg/l	USEPA 1657 A	N.D.
14	Isoproturon	µg/l	USEPA 532	N.D.
15	Malathion	µg/l	USEPA 8141 A	N.D.
16	Methyl Parathion	µg/l	USEPA 8141 A	N.D.
17	Monocrotophos	µg/l	USEPA 8141 A	N.D.
18	Phorate	µg/l	USEPA 8141 A	N.D.
E.	Microbial Parameters			
1	Total Coliform	MPN/ 100ml	IS:1622:1981:RA:2019	Absent
2	E. Coli	MPN/ 100ml	IS:1622:1981:RA:2019	Absent

Note: mg/lit.: milligram per liter, N.D. – Not Detected

REMARKS: RESULTS ARE AS ABOVE

Terms & conditions

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- *Test sample will be retained for 15 days after issue of test report unless otherwise agreed with customer.*
- *This is for information as the party has asked for above test(s) only.*

		For ULTIMATE ENVIROLYTICAL SOLUTIONS PVT LTD
13/3/26		13/03/26
REVIEWED BY		AUTHORIZED SIGNATORY

End of the test report

Ultimate ENVIROLYTICAL SOLUTIONS PVT. LTD.

LAB 1 : HDD-272, PHASE III - NEAR JP CHOWK, RING ROAD NO-2 KABIR NAGAR, RAIPUR (C.G.)-492099

LAB 2 : HIG-36 PHASE II, KABIR NAGAR, RAIPUR (C.G.)- 492099

PH- 0771-4523921 /Email - uespllab@gmail.com

Name & Address Of The Customer			
To,	Report No.	UESPL/TR/25-26/06123	
M/s DB Power Limited	Lab Ref No.	UESPL/25-26/W/11001	
Village- Badadhara	Date of Sampling	07/03/2026	
Dist.-Sakti (C.G) 495695	Date of Receipt	09/03/2026	
	Date of Report	13/03/2026	
	Date of analysis	Start: 09/03/2026	End: 13/03/2026

SAMPLE DETAILS	
Customer Sample Id /Sampling Location	Near – Badadarha Village (Borewell Water)
Customer Ref. No. & Date	8200006833, Dated: 22.07.2025
Sample Type	Ground Water
Packing of Sample	Plastic Bottle (5.0 Ltr.) Glass Bottle (1.0 Ltr.)
Sample Collected By	Laboratory Chemist
Sample Condition at Receipt	Ok

REPORT NO.: 06123

TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	RESULT
A.	Organoleptic & Physical Parameters			
1	Colour	Hazen	IS:3025(Part-4):2021	<1.0
2	Odour	-	IS:3025(Part-5):1983	Agreeable
3	pH Value at 25.2°C	-	IS:3025(Part-11):2022	7.37
4	Taste	-	IS:3025(Part-8):2017	<1.0
5	Turbidity	NTU	IS:3025(Part-10):2023	0.54
6	Total Dissolved Solids	mg/L	IS:3025(Part-16):2023	304
B.	General Parameters Concerning Substances undesirable in excessive amounts			
1	Aluminium (as Al)	mg/L	IS:3025(Part-55):2003 RA 2019	N.D.
2	Ammonia (as total ammonia-N)	mg/L	APHA 24th Ed.2023, 4500-NH_3-B&C, 424-425	N.D.
3	Anionic Detergent (as MBAS)	mg/L	APHA 24th Ed.2023, 5540-MBAS-C, 585	N.D.
4	Barium (as Ba)	mg/L	APHA 24th Ed.2023,3500-Ba, 252	N.D.
5	Boron (as B)	mg/L	APHA 24th Ed.2023,4500-B-B, 328	N.D.
6	Calcium (as Ca)	mg/L	IS:3025(Part-40):1991 RA 2019	48.09
7	Chloramines (as Cl_2)	mg/L	IS:3025(Part-26)	N.D.
8	Chloride (as Cl)	mg/L	IS:3025(Part-32):1988 RA 2019	52.9
9	Copper (as Cu)	mg/L	IS:3025(Part-42):1992 RA 2019	N.D.
10	Fluoride (as F)	mg/L	IS:3025(Part-60):2008 RA 2019	0.17
11	Free Residual Chlorine	mg/L	IS:3025(Part-26):2021	N.D.
12	Iron (as Fe)	mg/L	IS:3025(Part-53):2003 RA 2019	N.D.
13	Magnesium (as Mg)	mg/L	APHA 24th Ed.2023,3500-Mg-B, 274	14.58
14	Manganese (as Mn)	mg/L	USEPA - SW - 846 : Method -7000B	N.D.
15	Mineral Oil	mg/L	Clause 6 of IS 3025 (Part-39) Infrared partition method	N.D.
16	Nitrate (as NO_3)	mg/L	APHA 24th Ed.2023,4500-NO3-B, 434-435	16.44
17	Phenolic Compound (as C_6H_5OH)	mg/L	APHA 24th Ed.2023, 6420-P-OH-C, 702	N.D.
18	Selenium (as Se)	mg/L	IS:3025(Part-56):2003	N.D.
19	Silver (as Ag)	mg/L	APHA 24th Ed.2023,3500-Ag, 289	N.D.
20	Sulphate (as SO_4)	mg/L	IS:3025(Part-24/Sec.1):2022	46.78
21	Sulphide (as H_2S)	mg/L	IS:3025(Part 29):2023	N.D.
22	Total Alkalinity (as $CaCO_3$)	mg/L	IS:3025 (Part-23)-2023	102
23	Total Hardness (as $CaCO_3$)	mg/L	IS:3025(Part-21):2009 RA 2019	180
24	Zinc (as Zn)	mg/L	IS:3025(Part-49):1994 RA 2019	N.D.
C.	Parameters concerning toxic substances:-			
1	Cadmium (as Cd)	mg/L	IS:3025(Part-41):2023	
2	Cyanide (as CN)	mg/L	APHA 24th Ed.2023, 4500-CN--F, 374	N.D.
3	Lead (as Pb)	mg/L	IS:3025(Part-47):1994 RA 2019	N.D.
4	Mercury (as Hg)	mg/L	IS:3025(Part-48):1994 RA 2019	N.D.
5	Molybdenum (as Mo)	mg/L	IS:3025(Part-2)	N.D.

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LAB 1 : HDD-272, PHASE III - NEAR JP CHOWK, RING ROAD NO-2
KABIR NAGAR, RAIPUR (C.G.)-492099
LAB 2 : HIG-36 PHASE II, KABIR NAGAR, RAIPUR (C.G.)- 492099
PH- 0771-4523921 /Email - uespllab@gmail.com

REPORT NO.: 06123

TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	RESULT
6	Nickel (as Ni)	mg/L	IS:3025(Part-54):2003 RA 2019	N.D.
7	Polychlorinated biphenyls	mg/L	APHA 24th Ed. 6431-PCB-B, 702	N.D.
8	Polynuclear aromatic hydrocarbons (as PAH)	mg/L	APHA 24th Ed. 6440-PAH-B, 703	N.D.
9	Arsenic (as As)	mg/L	IS:3025(Part-37):2022	N.D.
10	Chromium (as Cr)	mg/L	IS:3025(Part-52):2003 RA 2019	N.D.
11	Trihalomethanes:			
a)	Bromoform	mg/L	APHA 6232	N.D.
b)	Dibromochloromethane	mg/L	APHA 6232	N.D.
c)	Bromodichloromethane	mg/L	APHA 6232	N.D.
d)	Chloroform	mg/L	APHA 6232	N.D.
D.	Pesticides:-			
1	Alpha HCH	µg/l	USEPA 508	N.D.
2	Beta HCH	µg/l	USEPA 508	N.D.
3	Delta HCH	µg/l	USEPA 508	N.D.
4	Alachlor	µg/l	USEPA 525.2, 507	N.D.
5	Aldrin / Dieldrin	µg/l	USEPA 508	N.D.
6	Atrazine	µg/l	USEPA 525.2,8141 A	N.D.
7	Butachlor	µg/l	USEPA 525.2,8141 A	N.D.
8	Chlorpyriphos	µg/l	USEPA 525.2,8141 A	N.D.
9	DDT (o,p and p, p-Isomers of DDT, DDE and DDD)	µg/l	USEPA 508	N.D.
10	Gamma HCH	µg/l	USEPA 508	N.D.
11	2,4-Dichlorophenoxyacetic Acid	µg/l	USEPA 515.1	N.D.
12	Endosulphan (alpha, beta and sulphate)	µg/l	USEPA 508	N.D.
13	Ethion	µg/l	USEPA 1657 A	N.D.
14	Isoproturon	µg/l	USEPA 532	N.D.
15	Malathion	µg/l	USEPA 8141 A	N.D.
16	Methyl Parathion	µg/l	USEPA 8141 A	N.D.
17	Monocrotophos	µg/l	USEPA 8141 A	N.D.
18	Phorate	µg/l	USEPA 8141 A	N.D.
E.	Microbial Parameters			
1	Total Coliform	MPN/ 100ml	IS:1622:1981:RA:2019	Absent
2	E. Coli	MPN/ 100ml	IS:1622:1981:RA:2019	Absent

Note: mg/lit.: milligram per liter, N.D. – Not Detected

REMARKS: RESULTS ARE AS ABOVE

Terms & conditions

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- *Test sample will be retained for 15 days after issue of test report unless otherwise agreed with customer.*
- *This is for information as the party has asked for above test(s) only.*

		For ULTIMATE ENVIROLYTICAL SOLUTIONS PVT LTD
13/3/26 REVIEWED BY		13/03/26 AUTHORIZED SIGNATORY

-----End of the test report-----

Format No.: UESPL/FORM/09

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LAB 1 : HDD-272, PHASE III - NEAR JP CHOWK, RING ROAD NO-2
KABIR NAGAR, RAIPUR (C.G.)-492099
LAB 2 : HIG-36 PHASE II, KABIR NAGAR, RAIPUR (C.G.)- 492099
PH- 0771-4523921 /Email - uesplab@gmail.com

Name & Address of The Customer	Report No.	UESPL/TR/25-26/06124	
To,	Lab Ref No.	UESPL/25-26/W/11002	
M/s DB Power Limited	Date of Sampling	07/03/2026	
Village- Badadhara	Date of Receipt	09/03/2026	
Dist.-Sakti (C.G) 495695	Date of Report	13/03/2026	
	Date of analysis	Start: 09/03/2026	End: 13/03/2026

SAMPLE DETAILS

Customer Sample Id /Sampling Location	Near – Baispali Village (Borewell Water)
Customer Ref. No. & Date	8200006833, Dated: 22.07.2025
Sample Type	Ground Water
Packing of Sample	Plastic Bottle (5.0 Ltr.) Glass Bottle (1.0 Ltr.)
Sample Collected By	Laboratory Chemist
Sample Condition at Receipt	Ok

REPORT NO.: 06124

TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	RESULT
A.	Organoleptic & Physical Parameters			
1	Colour	Hazen	IS:3025(Part-4):2021	<1.0
2	Odour	-	IS:3025(Part-5):1983	Agreeable
3	pH Value at 25.2°C	-	IS:3025(Part-11):2022	7.24
4	Taste	-	IS:3025(Part-8):2017	<1.0
5	Turbidity	NTU	IS:3025(Part-10):2023	0.62
6	Total Dissolved Solids	mg/L	IS:3025(Part-16):2023	300
B.	General Parameters Concerning Substances undesirable in excessive amounts			
1	Aluminium (as Al)	mg/L	IS:3025(Part-55):2003 RA 2019	N.D.
2	Ammonia (as total ammonia-N)	mg/L	APHA 24th Ed.2023, 4500-NH_3-B&C, 424-425	N.D.
3	Anionic Detergent (as MBAS)	mg/L	APHA 24th Ed.2023, 5540-MBAS-C, 585	N.D.
4	Barium (as Ba)	mg/L	APHA 24th Ed.2023,3500-Ba, 252	N.D.
5	Boron (as B)	mg/L	APHA 24th Ed.2023,4500-B-B, 328	N.D.
6	Calcium (as Ca)	mg/L	IS:3025(Part-40):1991 RA 2019	52.9
7	Chloramines (as Cl_2)	mg/L	IS:3025(Part-26)	N.D.
8	Chloride (as Cl)	mg/L	IS:3025(Part-32):1988 RA 2019	43.9
9	Copper (as Cu)	mg/L	IS:3025(Part-42):1992 RA 2019	N.D.
10	Fluoride (as F)	mg/L	IS:3025(Part-60):2008 RA 2019	0.14
11	Free Residual Chlorine	mg/L	IS:3025(Part-26):2021	N.D.
12	Iron (as Fe)	mg/L	IS:3025(Part-53):2003 RA 2019	N.D.
13	Magnesium (as Mg)	mg/L	APHA 24th Ed.2023,3500-Mg-B, 274	14.09
14	Manganese (as Mn)	mg/L	USEPA - SW - 846 : Method -7000B	N.D.
15	Mineral Oil	mg/L	Clause 6 of IS 3025 (Part-39) Infrared partition method	N.D.
16	Nitrate (as NO_3)	mg/L	APHA 24th Ed.2023,4500-NO3-B, 434-435	15.28
17	Phenolic Compound (as C_6H_5OH)	mg/L	APHA 24th Ed.2023, 6420-P-OH-C, 702	N.D.
18	Selenium (as Se)	mg/L	IS:3025(Part-56):2003	N.D.
19	Silver (as Ag)	mg/L	APHA 24th Ed.2023,3500-Ag, 289	N.D.
20	Sulphate (as SO_4)	mg/L	IS:3025(Part-24/Sec.1):2022	42.58
21	Sulphide (as H_2S)	mg/L	IS:3025(Part 29):2023	N.D.
22	Total Alkalinity (as $CaCO_3$)	mg/L	IS:3025 (Part-23)-2023	110
23	Total Hardness (as $CaCO_3$)	mg/L	IS:3025(Part-21):2009 RA 2019	190
24	Zinc (as Zn)	mg/L	IS:3025(Part-49):1994 RA 2019	N.D.
C.	Parameters concerning toxic substances:-			
1	Cadmium (as Cd)	mg/L	IS:3025(Part-41):2023	N.D.
2	Cyanide (as CN)	mg/L	APHA 24th Ed.2023, 4500-CN--F, 374	N.D.
3	Lead (as Pb)	mg/L	IS:3025(Part-47):1994 RA 2019	N.D.
4	Mercury (as Hg)	mg/L	IS:3025(Part-48):1994 RA 2019	N.D.
5	Molybdenum (as Mo)	mg/L	IS:3025(Part-2)	N.D.

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LAB 1 : HDD-272, PHASE III - NEAR JP CHOWK, RING ROAD NO-2
KABIR NAGAR, RAIPUR (C.G.)-492099
LAB 2 : HIG-36 PHASE II, KABIR NAGAR, RAIPUR (C.G.)- 492099
PH- 0771-4523921 /Email - uespllab@gmail.com

REPORT NO.: 06124

TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	RESULT
6	Nickel (as Ni)	mg/L	IS:3025(Part-54):2003 RA 2019	N.D.
7	Polychlorinated biphenyls	mg/L	APHA 24th Ed. 6431-PCB-B, 702	N.D.
8	Polynuclear aromatic hydrocarbons (as PAH)	mg/L	APHA 24th Ed. 6440-PAH-B, 703	N.D.
9	Arsenic (as As)	mg/L	IS:3025(Part-37):2022	N.D.
10	Chromium (as Cr)	mg/L	IS:3025(Part-52):2003 RA 2019	N.D.
11	Trihalomethanes:			
a)	Bromoform	mg/L	APHA 6232	N.D.
b)	Dibromochloromethane	mg/L	APHA 6232	N.D.
c)	Bromodichloromethane	mg/L	APHA 6232	N.D.
d)	Chloroform	mg/L	APHA 6232	N.D.
D.	Pesticides:-			
1	Alpha HCH	µg/l	USEPA 508	N.D.
2	Beta HCH	µg/l	USEPA 508	N.D.
3	Delta HCH	µg/l	USEPA 508	N.D.
4	Alachlor	µg/l	USEPA 525.2, 507	N.D.
5	Aldrin / Dieldrin	µg/l	USEPA 508	N.D.
6	Atrazine	µg/l	USEPA 525.2,8141 A	N.D.
7	Butachlor	µg/l	USEPA 525.2,8141 A	N.D.
8	Chlorpyriphos	µg/l	USEPA 525.2,8141 A	N.D.
9	DDT (o,p and p, p-Isomers of DDT, DDE and DDD)	µg/l	USEPA 508	N.D.
10	Gamma HCH	µg/l	USEPA 508	N.D.
11	2,4-Dichlorophenoxyacetic Acid	µg/l	USEPA 515.1	N.D.
12	Endosulphan (alpha, beta and sulphate)	µg/l	USEPA 508	N.D.
13	Ethion	µg/l	USEPA 1657 A	N.D.
14	Isoproturon	µg/l	USEPA 532	N.D.
15	Malathion	µg/l	USEPA 8141 A	N.D.
16	Methyl Parathion	µg/l	USEPA 8141 A	N.D.
17	Monocrotophos	µg/l	USEPA 8141 A	N.D.
18	Phorate	µg/l	USEPA 8141 A	N.D.
E.	Microbial Parameters			
1	Total Coliform	MPN/ 100ml	IS:1622:1981:RA:2019	Absent
2	E. Coli	MPN/ 100ml	IS:1622:1981:RA:2019	Absent

Note: mg/lt.: milligram per liter, N.D. – Not Detected

REMARKS: RESULTS ARE AS ABOVE

Terms & conditions

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- *This is for information as the party has asked for above test(s) only.*

13/3/26 REVIEWED BY		For ULTIMATE ENVIROLYTICAL SOLUTIONS PVT LTD 13/03/26 AUTHORIZED SIGNATORY

-----End of the test report-----

Ultimate
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LAB 1 : HDD-272, PHASE III - NEAR JP CHOWK, RING ROAD NO-2
KABIR NAGAR, RAIPUR (C.G.)-492099
LAB 2 : HIG-36 PHASE II, KABIR NAGAR, RAIPUR (C.G.)- 492099
PH- 0771-4523921 /Email - uespllab@gmail.com

Name & Address Of The Customer	Report No.	UESPL/TR/25-26/06125	
To,	Lab Ref No.	UESPL/25-26/W/11003	
M/s DB Power Limited	Date of Sampling	07/03/2026	
Village- Badadhara	Date of Receipt	09/03/2026	
Dist.-Sakti (C.G) 495695	Date of Report	13/03/2026	
	Date of analysis	Start: 09/03/2026	End: 13/03/2026

SAMPLE DETAILS	
Customer Sample Id /Sampling Location	Near – Ash Dump Side (Borewell Water)
Customer Ref. No. & Date	8200006833, Dated: 22.07.2025
Sample Type	Ground Water
Packing of Sample	Plastic Bottle (5.0 Ltr.) Glass Bottle (1.0 Ltr.)
Sample Collected By	Laboratory Chemist
Sample Condition at Receipt	Ok

REPORT NO.: 06125

TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	RESULT
A.	Organoleptic & Physical Parameters			
1	Colour	Hazen	IS:3025(Part-4):2021	<1.0
2	Odour	–	IS:3025(Part-5):1983	Agreeable
3	pH Value at 25.2°C	–	IS:3025(Part-11):2022	7.32
4	Taste	–	IS:3025(Part-8):2017	<1.0
5	Turbidity	NTU	IS:3025(Part-10):2023	0.68
6	Total Dissolved Solids	mg/L	IS:3025(Part-16):2023	318
B.	General Parameters Concerning Substances undesirable in excessive amounts			
1	Aluminium (as Al)	mg/L	IS:3025(Part-55):2003 RA 2019	N.D.
2	Ammonia (as total ammonia-N)	mg/L	APHA 24th Ed.2023, 4500-NH_3-B&C, 424-425	N.D.
3	Anionic Detergent (as MBAS)	mg/L	APHA 24th Ed.2023, 5540-MBAS-C, 585	N.D.
4	Barium (as Ba)	mg/L	APHA 24th Ed.2023,3500-Ba, 252	N.D.
5	Boron (as B)	mg/L	APHA 24th Ed.2023,4500-B-B, 328	N.D.
6	Calcium (as Ca)	mg/L	IS:3025(Part-40):1991 RA 2019	44.08
7	Chloramines (as Cl_2)	mg/L	IS:3025(Part-26)	N.D.
8	Chloride (as Cl)	mg/L	IS:3025(Part-32):1988 RA 2019	40.9
9	Copper (as Cu)	mg/L	IS:3025(Part-42):1992 RA 2019	N.D.
10	Fluoride (as F)	mg/L	IS:3025(Part-60):2008 RA 2019	0.1
11	Free Residual Chlorine	mg/L	IS:3025(Part-26):2021	N.D.
12	Iron (as Fe)	mg/L	IS:3025(Part-53):2003 RA 2019	N.D.
13	Magnesium (as Mg)	mg/L	APHA 24th Ed.2023,3500-Mg-B, 274	14.09
14	Manganese (as Mn)	mg/L	USEPA - SW - 846 : Method -7000B	N.D.
15	Mineral Oil	mg/L	Clause 6 of IS 3025 (Part-39) Infrared partition method	N.D.
16	Nitrate (as NO_3)	mg/L	APHA 24th Ed.2023,4500-NO3-B, 434-435	15.76
17	Phenolic Compound (as C_6H_5OH)	mg/L	APHA 24th Ed.2023, 6420-P-OH-C, 702	N.D.
18	Selenium (as Se)	mg/L	IS:3025(Part-56):2003	N.D.
19	Silver (as Ag)	mg/L	APHA 24th Ed.2023,3500-Ag, 269	N.D.
20	Sulphate (as SO_4)	mg/L	IS:3025(Part-24/Sec.1):2022	39.78
21	Sulphide (as H_2S)	mg/L	IS:3025(Part 29):2023	N.D.
22	Total Alkalinity (as $CaCO_3$)	mg/L	IS:3025 (Part-23)-2023	118
23	Total Hardness (as $CaCO_3$)	mg/L	IS:3025(Part-21):2009 RA 2019	168
24	Zinc (as Zn)	mg/L	IS:3025(Part-49):1994 RA 2019	N.D.
C.	Parameters concerning toxic substances:-			
1	Cadmium (as Cd)	mg/L	IS:3025(Part-41):2023	N.D.
2	Cyanide (as CN)	mg/L	APHA 24th Ed.2023, 4500-CN--F, 374	N.D.
3	Lead (as Pb)	mg/L	IS:3025(Part-47):1994 RA 2019	N.D.
4	Mercury (as Hg)	mg/L	IS:3025(Part-48):1994 RA 2019	N.D.
5	Molybdenum (as Mo)	mg/L	IS:3025(Part-2)	N.D.

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LAB 1 : HDD-272, PHASE III - NEAR JP CHOWK, RING ROAD NO-2
KABIR NAGAR, RAIPUR (C.G.)-492099
LAB 2 : HIG-36 PHASE II, KABIR NAGAR, RAIPUR (C.G.)- 492099
PH- 0771-4523921 /Email - uespllab@gmail.com

REPORT NO.: 06125

TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	RESULT
6	Nickel (as Ni)	mg/L	IS:3025(Part-54):2003 RA 2019	N.D.
7	Polychlorinated biphenyls	mg/L	APHA 24th Ed. 6431-PCB-B, 702	N.D.
8	Polynuclear aromatic hydrocarbons (as PAH)	mg/L	APHA 24th Ed. 6440-PAH-B, 703	N.D.
9	Arsenic (as As)	mg/L	IS:3025(Part-37):2022	N.D.
10	Chromium (as Cr)	mg/L	IS:3025(Part-52):2003 RA 2019	N.D.
11	Trihalomethanes:			
a)	Bromoform	mg/L	APHA 6232	N.D.
b)	Dibromochloromethane	mg/L	APHA 6232	N.D.
c)	Bromodichloromethane	mg/L	APHA 6232	N.D.
d)	Chloroform	mg/L	APHA 6232	N.D.
D.	Pesticides:-			
1	Alpha HCH	µg/l	USEPA 508	N.D.
2	Beta HCH	µg/l	USEPA 508	N.D.
3	Delta HCH	µg/l	USEPA 508	N.D.
4	Alachlor	µg/l	USEPA 525.2, 507	N.D.
5	Aldrin / Dieldrin	µg/l	USEPA 508	N.D.
6	Atrazine	µg/l	USEPA 525.2,8141 A	N.D.
7	Butachlor	µg/l	USEPA 525.2,8141 A	N.D.
8	Chlorpyriphos	µg/l	USEPA 525.2,8141 A	N.D.
9	DDT (o,p and p, p-Isomers of DDT, DDE and DDD)	µg/l	USEPA 508	N.D.
10	Gamma HCH	µg/l	USEPA 508	N.D.
11	2,4-Dichlorophenoxyacetic Acid	µg/l	USEPA 515.1	N.D.
12	Endosulphan (alpha, beta and sulphate)	µg/l	USEPA 508	N.D.
13	Ethion	µg/l	USEPA 1657 A	N.D.
14	Isoproturon	µg/l	USEPA 532	N.D.
15	Malathion	µg/l	USEPA 8141 A	N.D.
16	Methyl Parathion	µg/l	USEPA 8141 A	N.D.
17	Monocrotophos	µg/l	USEPA 8141 A	N.D.
18	Phorate	µg/l	USEPA 8141 A	N.D.
E.	Microbial Parameters			
1	Total Coliform	MPN/ 100ml	IS:1622:1981:RA:2019	Absent
2	E. Coli	MPN/ 100ml	IS:1622:1981:RA:2019	Absent

Note: mg/lit.: milligram per liter, N.D. – Not Detected

REMARKS: RESULTS ARE AS ABOVE

Terms & conditions

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- *This is for information as the party has asked for above test(s) only.*

13/3/26 REVIEWED BY		For ULTIMATE ENVIROLYTICAL SOLUTIONS PVT LTD 13/03/26 AUTHORIZED SIGNATORY

-------------------------------End of the test report-------------------------------

Ultimate
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LAB 1 : HDD-272, PHASE III - NEAR JP CHOWK, RING ROAD NO-2
KABIR NAGAR, RAIPUR (C.G.)-492099
LAB 2 : HIG-36 PHASE II, KABIR NAGAR, RAIPUR (C.G.)- 492099
PH- 0771-4523921 /Email - uespllab@gmail.com

Name & Address of The Customer	Report No.	UESPL/TR/25-26/06126	
To,	Lab Ref No.	UESPL/25-26/W/11004	
M/s DB Power Limited	Date of Sampling	07/03/2026	
Village- Badadhara	Date of Receipt	09/03/2026	
Dist.-Sakti (C.G) 495695	Date of Report	13/03/2026	
	Date of analysis	Start: 09/03/2026	End: 13/03/2026

SAMPLE DETAILS	
Customer Sample Id /Sampling Location	Near – Kanwali Village (Borewell Water)
Customer Ref. No. & Date	8200006833, Dated: 22.07.2025
Sample Type	Ground Water
Packing of Sample	Plastic Bottle (5.0 Ltr.) Glass Bottle (1.0 Ltr.)
Sample Collected By	Laboratory Chemist
Sample Condition at Receipt	Ok

REPORT NO.: 06126

TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	RESULT
A.	Organoleptic & Physical Parameters			
1	Colour	Hazen	IS:3025(Part-4):2021	<1.0
2	Odour	-	IS:3025(Part-5):1983	Agreeable
3	pH Value at 25.2°C	-	IS:3025(Part-11):2022	7.28
4	Taste	-	IS:3025(Part-8):2017	<1.0
5	Turbidity	NTU	IS:3025(Part-10):2023	0.76
6	Total Dissolved Solids	mg/L	IS:3025(Part-16):2023	298
B.	General Parameters Concerning Substances undesirable in excessive amounts			
1	Aluminium (as Al)	mg/L	IS:3025(Part-55):2003 RA 2019	N.D.
2	Ammonia (as total ammonia-N)	mg/L	APHA 24th Ed.2023, 4500-NH_3-B&C, 424-425	N.D.
3	Anionic Detergent (as MBAS)	mg/L	APHA 24th Ed.2023, 5540-MBAS-C, 585	N.D.
4	Barium (as Ba)	mg/L	APHA 24th Ed.2023,3500-Ba, 252	N.D.
5	Boron (as B)	mg/L	APHA 24th Ed.2023,4500-B-B, 328	N.D.
6	Calcium (as Ca)	mg/L	IS:3025(Part-40):1991 RA 2019	42.48
7	Chloramines (as Cl_2)	mg/L	IS:3025(Part-26)	N.D.
8	Chloride (as Cl)	mg/L	IS:3025(Part-32):1988 RA 2019	44.9
9	Copper (as Cu)	mg/L	IS:3025(Part-42):1992 RA 2019	N.D.
10	Fluoride (as F)	mg/L	IS:3025(Part-60):2008 RA 2019	0.14
11	Free Residual Chlorine	mg/L	IS:3025(Part-26):2021	N.D.
12	Iron (as Fe)	mg/L	IS:3025(Part-53):2003 RA 2019	N.D.
13	Magnesium (as Mg)	mg/L	APHA 24th Ed.2023,3500-Mg-B, 274	16.52
14	Manganese (as Mn)	mg/L	USEPA - SW - 846 : Method -7000B	N.D.
15	Mineral Oil	mg/L	Clause 6 of IS 3025 (Part-39) Infrared partition method	N.D.
16	Nitrate (as NO_3)	mg/L	APHA 24th Ed.2023,4500-NO3-B, 434-435	16.14
17	Phenolic Compound (as C_6H_5OH)	mg/L	APHA 24th Ed.2023, 6420-P-OH-C, 702	N.D.
18	Selenium (as Se)	mg/L	IS:3025(Part-56):2003	N.D.
19	Silver (as Ag)	mg/L	APHA 24th Ed.2023,3500-Ag, 289	N.D.
20	Sulphate (as SO_4)	mg/L	IS:3025(Part-24/Sec.1):2022	41.72
21	Sulphide (as H_2S)	mg/L	IS:3025(Part 29):2023	N.D.
22	Total Alkalinity (as $CaCO_3$)	mg/L	IS:3025 (Part-23)-2023	112
23	Total Hardness (as $CaCO_3$)	mg/L	IS:3025(Part-21):2009 RA 2019	174
24	Zinc (as Zn)	mg/L	IS:3025(Part-49):1994 RA 2019	N.D.
C.	Parameters concerning toxic substances: -			
1	Cadmium (as Cd)	mg/L	IS:3025(Part-41):2023	N.D.
2	Cyanide (as CN)	mg/L	APHA 24th Ed.2023, 4500-CN--F, 374	N.D.
3	Lead (as Pb)	mg/L	IS:3025(Part-47):1994 RA 2019	N.D.
4	Mercury (as Hg)	mg/L	IS:3025(Part-48):1994 RA 2019	N.D.
5	Molybdenum (as Mo)	mg/L	IS:3025(Part-2)	N.D.

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LAB 1 : HDD-272, PHASE III - NEAR JP CHOWK, RING ROAD NO-2 KABIR NAGAR, RAIPUR (C.G.)-492099

LAB 2 : HIG-36 PHASE II, KABIR NAGAR, RAIPUR (C.G.)- 492099

PH- 0771-4523921 /Email - uespllab@gmail.com

REPORT NO.: 06126

TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	RESULT
6	Nickel (as Ni)	mg/L	IS:3025(Part-54):2003 RA 2019	N.D.
7	Polychlorinated biphenyls	mg/L	APHA 24th Ed. 6431-PCB-B, 702	N.D.
8	Polynuclear aromatic hydrocarbons (as PAH)	mg/L	APHA 24th Ed. 6440-PAH-B, 703	N.D.
9	Arsenic (as As)	mg/L	IS:3025(Part-37):2022	N.D.
10	Chromium (as Cr)	mg/L	IS:3025(Part-52):2003 RA 2019	N.D.
11	Trihalomethanes:			
a)	Bromoform	mg/L	APHA 6232	N.D.
b)	Dibromochloromethane	mg/L	APHA 6232	N.D.
c)	Bromodichloromethane	mg/L	APHA 6232	N.D.
d)	Chloroform	mg/L	APHA 6232	N.D.
D.	Pesticides:-			
1	Alpha HCH	µg/l	USEPA 508	N.D.
2	Beta HCH	µg/l	USEPA 508	N.D.
3	Delta HCH	µg/l	USEPA 508	N.D.
4	Alachlor	µg/l	USEPA 525.2, 507	N.D.
5	Aldrin / Dieldrin	µg/l	USEPA 508	N.D.
6	Atrazine	µg/l	USEPA 525.2,8141 A	N.D.
7	Butachlor	µg/l	USEPA 525.2,8141 A	N.D.
8	Chlorpyriphos	µg/l	USEPA 525.2,8141 A	N.D.
9	DDT (o,p and p, p-Isomers of DDT, DDE and DDD)	µg/l	USEPA 508	N.D.
10	Gamma HCH	µg/l	USEPA 508	N.D.
11	2,4-Dichlorophenoxyacetic Acid	µg/l	USEPA 515.1	N.D.
12	Endosulphan (alpha, beta and sulphate)	µg/l	USEPA 508	N.D.
13	Ethion	µg/l	USEPA 1657 A	N.D.
14	Isoproturon	µg/l	USEPA 532	N.D.
15	Malathion	µg/l	USEPA 8141 A	N.D.
16	Methyl Parathion	µg/l	USEPA 8141 A	N.D.
17	Monocrotophos	µg/l	USEPA 8141 A	N.D.
18	Phorate	µg/l	USEPA 8141 A	N.D.
E.	Microbial Parameters			
1	Total Coliform	MPN/ 100ml	IS: 1622:1981:RA:2019	Absent
2	E. Coli	MPN/ 100ml	IS: 1622:1981:RA:2019	Absent

Note: mg/lt.: milligram per liter, N.D. – Not Detected

REMARKS: RESULTS ARE AS ABOVE

Terms & conditions

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- *Test sample will be retained for 15 days after issue of test report unless otherwise agreed with customer.*
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REVIEWED BY		For ULTIMATE ENVIROLYTICAL SOLUTIONS PVT LTD
13/3/26		13/03/26
REVIEWED BY		AUTHORIZED SIGNATORY

-------------------------------End of the test report-------------------------------

Ultimate
ENVIROLYTICAL SOLUTIONS PVT. LTD.

LAB 1 : HDD-272, PHASE III - NEAR JP CHOWK, RING ROAD NO-2
KABIR NAGAR, RAIPUR (C.G.)-492099
LAB 2 : HIG-36 PHASE II, KABIR NAGAR, RAIPUR (C.G.)- 492099
PH- 0771-4523921 /Email - uespllab@gmail.com

Name & Address Of The Customer			
To, M/s DB Power Limited Village- Badadhara Dist.-Sakti (C.G) 495695	Report No.	UESPL/TR/25-26/06127	
	Lab Ref No.	UESPL/25-26/W/11005	
	Date of Sampling	07/03/2026	
	Date of Receipt	09/03/2026	
	Date of Report	13/03/2026	
	Date of analysis	Start: 09/03/2026	End: 13/03/2026

SAMPLE DETAILS	
Customer Sample Id /Sampling Location	Near – Pathri Nala
Customer Ref. No. & Date	8200006833, Dated: 22.07.2025
Sample Type	Surface Water
Packing of Sample	Plastic Bottle (5.0 Ltr.) Glass Bottle (1.0 Ltr.)
Sample Collected By	Laboratory Chemist
Sample Condition at Receipt	Ok

REPORT NO.: 06127

TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	RESULT
A.	Organoleptic & Physical Parameters			
1	Colour	Hazen	IS:3025(Part-4):2021	5
2	Odour	-	IS:3025(Part-5):1983	Agreeable
3	pH Value at 25.2°C	-	IS:3025(Part-11):2022	7.47
4	Taste	-	IS:3025(Part-8):2017	Agreeable
5	Turbidity	NTU	IS:3025(Part-10):2023	1.28
6	Total Dissolved Solids	mg/L	IS:3025(Part-16):2023	258
B.	General Parameters Concerning Substances undesirable in excessive amounts			
1	Aluminium (as Al)	mg/L	IS:3025(Part-55):2003 RA 2019	N.D.
2	Ammonia (as total ammonia-N)	mg/L	APHA 24th Ed.2023, 4500-NH_3-B&C, 424-425	N.D.
3	Anionic Detergent (as MBAS)	mg/L	APHA 24th Ed.2023, 5540-MBAS-C, 585	N.D.
4	Barium (as Ba)	mg/L	APHA 24th Ed.2023,3500-Ba, 252	N.D.
5	Boron (as B)	mg/L	APHA 24th Ed.2023,4500-B-B, 328	N.D.
6	Calcium (as Ca)	mg/L	IS:3025(Part-40):1991 RA 2019	42.48
7	Chloramines (as Cl_2)	mg/L	IS:3025(Part-26)	N.D.
8	Chloride (as Cl)	mg/L	IS:3025(Part-32):1988 RA 2019	33.9
9	Copper (as Cu)	mg/L	IS:3025(Part-42):1992 RA 2019	N.D.
10	Fluoride (as F)	mg/L	IS:3025(Part-60):2008 RA 2019	0.13
11	Free Residual Chlorine	mg/L	IS:3025(Part-26):2021	N.D.
12	Iron (as Fe)	mg/L	IS:3025(Part-53):2003 RA 2019	0.04
13	Magnesium (as Mg)	mg/L	APHA 24th Ed.2023,3500-Mg-B, 274	18.46
14	Manganese (as Mn)	mg/L	USEPA - SW - 846 : Method -7000B	N.D.
15	Mineral Oil	mg/L	Clause 6 of IS 3025 (Part-39) Infrared partition method	N.D.
16	Nitrate (as NO_3)	mg/L	APHA 24th Ed.2023,4500-NO3-B, 434-435	9.28
17	Phenolic Compound (as C_6H_5OH)	mg/L	APHA 24th Ed.2023, 6420-P-OH-C, 702	N.D.
18	Selenium (as Se)	mg/L	IS:3025(Part-56):2003	N.D.
19	Silver (as Ag)	mg/L	APHA 24th Ed.2023,3500-Ag, 289	N.D.
20	Sulphate (as SO_4)	mg/L	IS:3025(Part-24/Sec.1):2022	27.24
21	Sulphide (as H_2S)	mg/L	IS:3025(Part 29):2023	N.D.
22	Total Alkalinity (as $CaCO_3$)	mg/L	IS:3025 (Part-23)-2023	112
23	Total Hardness (as $CaCO_3$)	mg/L	IS:3025(Part-21):2009 RA 2019	182
24	Zinc (as Zn)	mg/L	IS:3025(Part-49):1994 RA 2019	N.D.
C.	Parameters concerning toxic substances:-			
1	Cadmium (as Cd)	mg/L	IS:3025(Part-41):2023	N.D.
2	Cyanide (as CN)	mg/L	APHA 24th Ed.2023, 4500-CN--F, 374	N.D.
3	Lead (as Pb)	mg/L	IS:3025(Part-47):1994 RA 2019	N.D.
4	Mercury (as Hg)	mg/L	IS:3025(Part-48):1994 RA 2019	N.D.
5	Molybdenum (as Mo)	mg/L	IS:3025(Part-2)	N.D.

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LAB 1 : HDD-272, PHASE III - NEAR JP CHOWK, RING ROAD NO-2
KABIR NAGAR, RAIPUR (C.G.)-492099
LAB 2 : HIG-36 PHASE II, KABIR NAGAR, RAIPUR (C.G.)- 492099
PH- 0771-4523921 /Email - uespllab@gmail.com

REPORT NO.: 06127

TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	RESULT
6	Nickel (as Ni)	mg/L	IS:3025(Part-54):2003 RA 2019	N.D.
7	Polychlorinated biphenyls	mg/L	APHA 24th Ed. 6431-PCB-B, 702	N.D.
8	Polynuclear aromatic hydrocarbons (as PAH)	mg/L	APHA 24th Ed. 6440-PAH-B, 703	N.D.
9	Arsenic (as As)	mg/L	IS:3025(Part-37):2022	N.D.
10	Chromium (as Cr)	mg/L	IS:3025(Part-52):2003 RA 2019	N.D.
11	Trihalomethanes:			
a)	Bromoform	mg/L	APHA 6232	N.D.
b)	Dibromochloromethane	mg/L	APHA 6232	N.D.
c)	Bromodichloromethane	mg/L	APHA 6232	N.D.
d)	Chloroform	mg/L	APHA 6232	N.D.
D.	Pesticides:-			
1	Alpha HCH	µg/l	USEPA 508	N.D.
2	Beta HCH	µg/l	USEPA 508	N.D.
3	Delta HCH	µg/l	USEPA 508	N.D.
4	Alachlor	µg/l	USEPA 525.2, 507	N.D.
5	Aldrin / Dieldrin	µg/l	USEPA 508	N.D.
6	Atrazine	µg/l	USEPA 525.2,8141 A	N.D.
7	Butachlor	µg/l	USEPA 525.2,8141 A	N.D.
8	Chlorpyriphos	µg/l	USEPA 525.2,8141 A	N.D.
9	DDT (o,p and p, p-Isomers of DDT, DDE and DDD)	µg/l	USEPA 508	N.D.
10	Gamma HCH	µg/l	USEPA 508	N.D.
11	2,4-Dichlorophenoxyacetic Acid	µg/l	USEPA 515.1	N.D.
12	Endosulphan (alpha, beta and sulphate)	µg/l	USEPA 508	N.D.
13	Ethion	µg/l	USEPA 1657 A	N.D.
14	Isoproturon	µg/l	USEPA 532	N.D.
15	Malathion	µg/l	USEPA 8141 A	N.D.
16	Methyl Parathion	µg/l	USEPA 8141 A	N.D.
17	Monocrotophos	µg/l	USEPA 8141 A	N.D.
18	Phorate	µg/l	USEPA 8141 A	N.D.
E.	Microbial Parameters			
1	Total Coliform	MPN/ 100ml	IS:1622:1981:RA:2019	130
2	E. Coli	MPN/ 100ml	IS:1622:1981:RA:2019	34

Note: mg/lt.: milligram per liter, N.D. – Not Detected

REMARKS: RESULTS ARE AS ABOVE

Terms & conditions

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- *This is for information as the party has asked for above test(s) only.*

13/03/26 REVIEWED BY		For ULTIMATE ENVIROLYTICAL SOLUTIONS PVT LTD 13/03/26 AUTHORIZED SIGNATORY

-----End of the test report-----

Ultimate
ENVIROLYTICAL SOLUTIONS PVT. LTD.

LAB 1 : HDD-272, PHASE III - NEAR JP CHOWK, RING ROAD NO-2
KABIR NAGAR, RAIPUR (C.G.)-492099
LAB 2 : HIG-36 PHASE II, KABIR NAGAR, RAIPUR (C.G.)- 492099
PH- 0771-4523921 /Email - uespllab@gmail.com

Name & Address of The Customer	Report No.	UESPL/TR/25-26/06128	
To,	Lab Ref No.	UESPL/25-26/W/11006	
M/s DB Power Limited	Date of Sampling	07/03/2026	
Village- Badadhara	Date of Receipt	09/03/2026	
Dist.-Sakti (C.G) 495695	Date of Report	13/03/2026	
	Date of analysis	Start: 09/03/2026	End: 13/03/2026

SAMPLE DETAILS

Customer Sample Id /Sampling Location	Near – Tundri Village
Customer Ref. No. & Date	8200006833, Dated: 22.07.2025
Sample Type	Surface Water
Packing of Sample	Plastic Bottle (5.0 Ltr.) Glass Bottle (1.0 Ltr.)
Sample Collected By	Laboratory Chemist
Sample Condition at Receipt	Ok

REPORT NO.: 06128

TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	RESULT
A.	Organoleptic & Physical Parameters			
1	Colour	Hazen	IS:3025(Part-4):2021	5
2	Odour	–	IS:3025(Part-5):1983	Agreeable
3	pH Value at 25.2°C	–	IS:3025(Part-11):2022	7.37
4	Taste	–	IS:3025(Part-8):2017	Agreeable
5	Turbidity	NTU	IS:3025(Part-10):2023	1.36
6	Total Dissolved Solids	mg/L	IS:3025(Part-16):2023	244
B.	General Parameters Concerning Substances undesirable in excessive amounts			
1	Aluminium (as Al)	mg/L	IS:3025(Part-55):2003 RA 2019	N.D.
2	Ammonia (as total ammonia-N)	mg/L	APHA 24th Ed.2023, 4500-NH_3-B&C, 424-425	N.D.
3	Anionic Detergent (as MBAS)	mg/L	APHA 24th Ed.2023, 5540-MBAS-C, 585	N.D.
4	Barium (as Ba)	mg/L	APHA 24th Ed.2023,3500-Ba, 252	N.D.
5	Boron (as B)	mg/L	APHA 24th Ed.2023,4500-B-B, 328	N.D.
6	Calcium (as Ca)	mg/L	IS:3025(Part-40):1991 RA 2019	45.69
7	Chloramines (as Cl_2)	mg/L	IS:3025(Part-26)	N.D.
8	Chloride (as Cl)	mg/L	IS:3025(Part-32):1988 RA 2019	24.9
9	Copper (as Cu)	mg/L	IS:3025(Part-42):1992 RA 2019	N.D.
10	Fluoride (as F)	mg/L	IS:3025(Part-60):2008 RA 2019	0.12
11	Free Residual Chlorine	mg/L	IS:3025(Part-26):2021	N.D.
12	Iron (as Fe)	mg/L	IS:3025(Part-53):2003 RA 2019	0.13
13	Magnesium (as Mg)	mg/L	APHA 24th Ed.2023,3500-Mg-B, 274	13.61
14	Manganese (as Mn)	mg/L	USEPA - SW - 846 : Method -7000B	N.D.
15	Mineral Oil	mg/L	Clause 6 of IS 3025 (Part-39) Infrared partition method	N.D.
16	Nitrate (as NO_3)	mg/L	APHA 24th Ed.2023,4500-NO3-B, 434-435	8.46
17	Phenolic Compound (as C_6H_5OH)	mg/L	APHA 24th Ed.2023, 6420-P-OH-C, 702	N.D.
18	Selenium (as Se)	mg/L	IS:3025(Part-56):2003	N.D.
19	Silver (as Ag)	mg/L	APHA 24th Ed.2023,3500-Ag, 289	N.D.
20	Sulphate (as SO_4)	mg/L	IS:3025(Part-24/Sec.1):2022	23.41
21	Sulphide (as H_2S)	mg/L	IS:3025(Part 29):2023	N.D.
22	Total Alkalinity (as $CaCO_3$)	mg/L	IS:3025 (Part-23)-2023	120
23	Total Hardness (as $CaCO_3$)	mg/L	IS:3025(Part-21):2009 RA 2019	170
24	Zinc (as Zn)	mg/L	IS:3025(Part-49):1994 RA 2019	N.D.
C.	Parameters concerning toxic substances:-			
1	Cadmium (as Cd)	mg/L	IS:3025(Part-41):2023	N.D.
2	Cyanide (as CN)	mg/L	APHA 24th Ed.2023, 4500-CN--F, 374	N.D.
3	Lead (as Pb)	mg/L	IS:3025(Part-47):1994 RA 2019	N.D.
4	Mercury (as Hg)	mg/L	IS:3025(Part-48):1994 RA 2019	N.D.
5	Molybdenum (as Mo)	mg/L	IS:3025(Part-2)	N.D.

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LAB 1 : HDD-272, PHASE III - NEAR JP CHOWK, RING ROAD NO-2
KABIR NAGAR, RAIPUR (C.G.)-492099
LAB 2 : HIG-36 PHASE II, KABIR NAGAR, RAIPUR (C.G.)- 492099
PH- 0771-4523921 /Email - uespllab@gmail.com

REPORT NO.: 06128

TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	RESULT
6	Nickel (as Ni)	mg/L	IS:3025(Part-54):2003 RA 2019	N.D.
7	Polychlorinated biphenyls	mg/L	APHA 24th Ed. 6431-PCB-B, 702	N.D.
8	Polynuclear aromatic hydrocarbons (as PAH)	mg/L	APHA 24th Ed. 6440-PAH-B, 703	N.D.
9	Arsenic (as As)	mg/L	IS:3025(Part-37):2022	N.D.
10	Chromium (as Cr)	mg/L	IS:3025(Part-52):2003 RA 2019	N.D.
11	Trihalomethanes:			
a)	Bromoform	mg/L	APHA 6232	N.D.
b)	Dibromochloromethane	mg/L	APHA 6232	N.D.
c)	Bromodichloromethane	mg/L	APHA 6232	N.D.
d)	Chloroform	mg/L	APHA 6232	N.D.
D.	Pesticides:-			
1	Alpha HCH	µg/l	USEPA 508	N.D.
2	Beta HCH	µg/l	USEPA 508	N.D.
3	Delta HCH	µg/l	USEPA 508	N.D.
4	Alachlor	µg/l	USEPA 525.2, 507	N.D.
5	Aldrin / Dieldrin	µg/l	USEPA 508	N.D.
6	Atrazine	µg/l	USEPA 525.2,8141 A	N.D.
7	Butachlor	µg/l	USEPA 525.2,8141 A	N.D.
8	Chlorpyriphos	µg/l	USEPA 525.2,8141 A	N.D.
9	DDT (o,p and p, p-Isomers of DDT, DDE and DDD)	µg/l	USEPA 508	N.D.
10	Gamma HCH	µg/l	USEPA 508	N.D.
11	2,4-Dichlorophenoxyacetic Acid	µg/l	USEPA 515.1	N.D.
12	Endosulphan (alpha, beta and sulphate)	µg/l	USEPA 508	N.D.
13	Ethion	µg/l	USEPA 1657 A	N.D.
14	Isoproturon	µg/l	USEPA 532	N.D.
15	Malathion	µg/l	USEPA 8141 A	N.D.
16	Methyl Parathion	µg/l	USEPA 8141 A	N.D.
17	Monocrotophos	µg/l	USEPA 8141 A	N.D.
18	Phorate	µg/l	USEPA 8141 A	N.D.
E.	Microbial Parameters			
1	Total Coliform	MPN/ 100ml	IS:1622:1981:RA:2019	170
2	E. Coli	MPN/ 100ml	IS:1622:1981:RA:2019	27

Note: mg/lt.: milligram per liter, N.D. – Not Detected

REMARKS: RESULTS ARE AS ABOVE

Terms & conditions

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- *This is for information as the party has asked for above test(s) only.*

REVIEWED BY		For ULTIMATE ENVIROLYTICAL SOLUTIONS PVT LTD
13/3/26		13/03/26
REVIEWED BY		AUTHORIZED SIGNATORY

---------------------------------*End of the test report*---------------------------------

Ultimate
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LAB 1 : HDD-272, PHASE III - NEAR JP CHOWK, RING ROAD NO-2
KABIR NAGAR, RAIPUR (C.G.)-492099
LAB 2 : HIG-36 PHASE II, KABIR NAGAR, RAIPUR (C.G.)- 492099
PH- 0771-4523921 /Email - uespllab@gmail.com

Name & Address of The Customer	Report No.	UESPL/TR/25-26/06129	
To,	Lab Ref No.	UESPL/25-26/W/11007	
M/s DB Power Limited	Date of Sampling	07/03/2026	
Village- Badadhara	Date of Receipt	09/03/2026	
Dist.-Sakti (C.G) 495695	Date of Report	13/03/2026	
	Date of analysis	Start: 09/03/2026	End: 13/03/2026

SAMPLE DETAILS	
Customer Sample Id /Sampling Location	Near – Kanwali Village
Customer Ref. No. & Date	8200006833, Dated: 22.07.2025
Sample Type	Surface Water
Packing of Sample	Plastic Bottle (5.0 Ltr.) Glass Bottle (1.0 Ltr.)
Sample Collected By	Laboratory Chemist
Sample Condition at Receipt	Ok

REPORT NO.: 06129

TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	RESULT
A.	Organoleptic & Physical Parameters			
1	Colour	Hazen	IS:3025(Part-4):2021	5
2	Odour	-	IS:3025(Part-5):1983	Agreeable
3	pH Value at 25.2°C	-	IS:3025(Part-11):2022	7.28
4	Taste	-	IS:3025(Part-8):2017	Agreeable
5	Turbidity	NTU	IS:3025(Part-10):2023	1.38
6	Total Dissolved Solids	mg/L	IS:3025(Part-16):2023	252
B.	General Parameters Concerning Substances undesirable in excessive amounts			
1	Aluminium (as Al)	mg/L	IS:3025(Part-55):2003 RA 2019	N.D.
2	Ammonia (as total ammonia-N)	mg/L	APHA 24th Ed.2023, 4500-NH_3-B&C, 424-425	N.D.
3	Anionic Detergent (as MBAS)	mg/L	APHA 24th Ed.2023, 5540-MBAS-C, 585	N.D.
4	Barium (as Ba)	mg/L	APHA 24th Ed.2023,3500-Ba, 252	N.D.
5	Boron (as B)	mg/L	APHA 24th Ed.2023,4500-B-B, 328	N.D.
6	Calcium (as Ca)	mg/L	IS:3025(Part-40):1991 RA 2019	46.49
7	Chloramines (as Cl_2)	mg/L	IS:3025(Part-26)	N.D.
8	Chloride (as Cl)	mg/L	IS:3025(Part-32):1988 RA 2019	32.9
9	Copper (as Cu)	mg/L	IS:3025(Part-42):1992 RA 2019	N.D.
10	Fluoride (as F)	mg/L	IS:3025(Part-60):2008 RA 2019	0.14
11	Free Residual Chlorine	mg/L	IS:3025(Part-26):2021	N.D.
12	Iron (as Fe)	mg/L	IS:3025(Part-53):2003 RA 2019	0.15
13	Magnesium (as Mg)	mg/L	APHA 24th Ed.2023,3500-Mg-B, 274	16.52
14	Manganese (as Mn)	mg/L	USEPA - SW - 846 : Method -7000B	N.D.
15	Mineral Oil	mg/L	Clause 6 of IS 3025 (Part-39) Infrared partition method	N.D.
16	Nitrate (as NO_3)	mg/L	APHA 24th Ed.2023,4500-NO3-B, 434-435	7.77
17	Phenolic Compound (as C_6H_5OH)	mg/L	APHA 24th Ed.2023, 6420-P-OH-C, 702	N.D.
18	Selenium (as Se)	mg/L	IS:3025(Part-56):2003	N.D.
19	Silver (as Ag)	mg/L	APHA 24th Ed.2023,3500-Ag, 289	N.D.
20	Sulphate (as SO_4)	mg/L	IS:3025(Part-24/Sec.1):2022	28.24
21	Sulphide (as H_2S)	mg/L	IS:3025(Part 29):2023	N.D.
22	Total Alkalinity (as $CaCO_3$)	mg/L	IS:3025 (Part-23)-2023	112
23	Total Hardness (as $CaCO_3$)	mg/L	IS:3025(Part-21):2009 RA 2019	184
24	Zinc (as Zn)	mg/L	IS:3025(Part-49):1994 RA 2019	N.D.
C.	Parameters concerning toxic substances:-			
1	Cadmium (as Cd)	mg/L	IS:3025(Part-41):2023	N.D.
2	Cyanide (as CN)	mg/L	APHA 24th Ed.2023, 4500-CN--F, 374	N.D.
3	Lead (as Pb)	mg/L	IS:3025(Part-47):1994 RA 2019	N.D.
4	Mercury (as Hg)	mg/L	IS:3025(Part-48):1994 RA 2019	N.D.
5	Molybdenum (as Mo)	mg/L	IS:3025(Part-2)	N.D.

Ultimate
ENVIROLYTICAL SOLUTIONS PVT. LTD.

LAB 1 : HDD-272, PHASE III - NEAR JP CHOWK, RING ROAD NO-2
KABIR NAGAR, RAIPUR (C.G.)-492099
LAB 2 : HIG-36 PHASE II, KABIR NAGAR, RAIPUR (C.G.)- 492099
PH- 0771-4523921 /Email - uespllab@gmail.com

REPORT NO.: 06129

TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	RESULT
6	Nickel (as Ni)	mg/L	IS:3025(Part-54):2003 RA 2019	N.D.
7	Polychlorinated biphenyls	mg/L	APHA 24th Ed. 6431-PCB-B, 702	N.D.
8	Polynuclear aromatic hydrocarbons (as PAH)	mg/L	APHA 24th Ed. 6440-PAH-B, 703	N.D.
9	Arsenic (as As)	mg/L	IS:3025(Part-37):2022	N.D.
10	Chromium (as Cr)	mg/L	IS:3025(Part-52):2003 RA 2019	N.D.
11	Trihalomethanes:			
a)	Bromoform	mg/L	APHA 6232	N.D.
b)	Dibromochloromethane	mg/L	APHA 6232	N.D.
c)	Bromodichloromethane	mg/L	APHA 6232	N.D.
d)	Chloroform	mg/L	APHA 6232	N.D.
D.	Pesticides:-			
1	Alpha HCH	µg/l	USEPA 508	N.D.
2	Beta HCH	µg/l	USEPA 508	N.D.
3	Delta HCH	µg/l	USEPA 508	N.D.
4	Alachlor	µg/l	USEPA 525.2, 507	N.D.
5	Aldrin / Dieldrin	µg/l	USEPA 508	N.D.
6	Atrazine	µg/l	USEPA 525.2,8141 A	N.D.
7	Butachlor	µg/l	USEPA 525.2,8141 A	N.D.
8	Chlorpyriphos	µg/l	USEPA 525.2,8141 A	N.D.
9	DDT (o,p and p, p-Isomers of DDT, DDE and DDD)	µg/l	USEPA 508	N.D.
10	Gamma HCH	µg/l	USEPA 508	N.D.
11	2,4-Dichlorophenoxyacetic Acid	µg/l	USEPA 515.1	N.D.
12	Endosulphan (alpha, beta and sulphate)	µg/l	USEPA 508	N.D.
13	Ethion	µg/l	USEPA 1657 A	N.D.
14	Isoproturon	µg/l	USEPA 532	N.D.
15	Malathion	µg/l	USEPA 8141 A	N.D.
16	Methyl Parathion	µg/l	USEPA 8141 A	N.D.
17	Monocrotophos	µg/l	USEPA 8141 A	N.D.
18	Phorate	µg/l	USEPA 8141 A	N.D.
E.	Microbial Parameters			
1	Total Coliform	MPN/ 100ml	IS:1622:1981:RA:2019	110
2	E. Coli	MPN/ 100ml	IS:1622:1981:RA:2019	23

Note: mg/lit.: milligram per liter, N.D. – Not Detected

REMARKS: RESULTS ARE AS ABOVE

Terms & conditions

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13/3/26 **REVIEWED BY**		For ULTIMATE ENVIROLYTICAL SOLUTIONS PVT LTD 13/03/26 **AUTHORIZED SIGNATORY**

-----End of the test report-----

Ultimate
ENVIROLYTICAL SOLUTIONS PVT. LTD.

LAB 1 : HDD-272, PHASE III - NEAR JP CHOWK, RING ROAD NO-2
KABIR NAGAR, RAIPUR (C.G.)-492099
LAB 2 : HIG-36 PHASE II, KABIR NAGAR, RAIPUR (C.G.)- 492099
PH- 0771-4523921 /Email - uesplab@gmail.com

Name & Address of The Customer			
To,	Report No.	UESPL/TR/25-26/06130	
M/s DB Power Limited	Lab Ref No.	UESPL/25-26/W/11008	
Village- Badadhara	Date of Sampling	07/03/2026	
Dist.-Sakti (C.G) 495695	Date of Receipt	09/03/2026	
	Date of Report	13/03/2026	
	Date of analysis	Start: 09/03/2026	End: 13/03/2026

SAMPLE DETAILS	
Customer Sample Id /Sampling Location	Near – Mahanadi Rivers
Customer Ref. No. & Date	8200006833, Dated: 22.07.2025
Sample Type	Surface Water
Packing of Sample	Plastic Bottle (5.0 Ltr.) Glass Bottle (1.0 Ltr.)
Sample Collected By	Laboratory Chemist
Sample Condition at Receipt	Ok

REPORT NO.: 0

TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	RESULT
A.	Organoleptic & Physical Parameters			
1	Colour	Hazen	IS:3025(Part-4):2021	5
2	Odour	-	IS:3025(Part-5):1983	Agreeable
3	pH Value at 25.2°C	-	IS:3025(Part-11):2022	7.26
4	Taste	-	IS:3025(Part-8):2017	Agreeable
5	Turbidity	NTU	IS:3025(Part-10):2023	1.24
6	Total Dissolved Solids	mg/L	IS:3025(Part-16):2023	270
B.	General Parameters Concerning Substances undesirable in excessive amounts			
1	Aluminium (as Al)	mg/L	IS:3025(Part-55):2003 RA 2019	N.D.
2	Ammonia (as total ammonia-N)	mg/L	APHA 24th Ed.2023, 4500-NH_3-B&C, 424-425	N.D.
3	Anionic Detergent (as MBAS)	mg/L	APHA 24th Ed.2023, 5540-MBAS-C, 585	N.D.
4	Barium (as Ba)	mg/L	APHA 24th Ed.2023,3500-Ba, 252	N.D.
5	Boron (as B)	mg/L	APHA 24th Ed.2023,4500-B-B, 328	N.D.
6	Calcium (as Ca)	mg/L	IS:3025(Part-40):1991 RA 2019	49.69
7	Chloramines (as Cl_2)	mg/L	IS:3025(Part-26)	N.D.
8	Chloride (as Cl)	mg/L	IS:3025(Part-32):1988 RA 2019	28.9
9	Copper (as Cu)	mg/L	IS:3025(Part-42):1992 RA 2019	N.D.
10	Fluoride (as F)	mg/L	IS:3025(Part-60):2008 RA 2019	0.12
11	Free Residual Chlorine	mg/L	IS:3025(Part-26):2021	N.D.
12	Iron (as Fe)	mg/L	IS:3025(Part-53):2003 RA 2019	0.15
13	Magnesium (as Mg)	mg/L	APHA 24th Ed.2023,3500-Mg-B, 274	16.52
14	Manganese (as Mn)	mg/L	USEPA - SW - 846 : Method -7000B	N.D.
15	Mineral Oil	mg/L	Clause 6 of IS 3025 (Part-39) Infrared partition method	N.D.
16	Nitrate (as NO_3)	mg/L	APHA 24th Ed.2023,4500-NO3-B, 434-435	9.56
17	Phenolic Compound (as C_6H_5OH)	mg/L	APHA 24th Ed.2023, 6420-P-OH-C, 702	N.D.
18	Selenium (as Se)	mg/L	IS:3025(Part-56):2003	N.D.
19	Silver (as Ag)	mg/L	APHA 24th Ed.2023,3500-Ag, 289	N.D.
20	Sulphate (as SO_4)	mg/L	IS:3025(Part-24/Sec.1):2022	30.18
21	Sulphide (as H_2S)	mg/L	IS:3025(Part 29):2023	N.D.
22	Total Alkalinity (as $CaCO_3$)	mg/L	IS:3025 (Part-23)-2023	128
23	Total Hardness (as $CaCO_3$)	mg/L	IS:3025(Part-21):2009 RA 2019	192
24	Zinc (as Zn)	mg/L	IS:3025(Part-49):1994 RA 2019	N.D.
C.	Parameters concerning toxic substances:-			
1	Cadmium (as Cd)	mg/L	IS:3025(Part-41):2023	N.D.
2	Cyanide (as CN)	mg/L	APHA 24th Ed.2023, 4500-CN--F, 374	N.D.
3	Lead (as Pb)	mg/L	IS:3025(Part-47):1994 RA 2019	N.D.
4	Mercury (as Hg)	mg/L	IS:3025(Part-48):1994 RA 2019	N.D.
5	Molybdenum (as Mo)	mg/L	IS:3025(Part-2)	N.D.

Ultimate
ENVIROLYTICAL SOLUTIONS PVT. LTD.

LAB 1 : HDD-272, PHASE III - NEAR JP CHOWK, RING ROAD NO-2
KABIR NAGAR, RAIPUR (C.G.)-492099
LAB 2 : HIG-36 PHASE II, KABIR NAGAR, RAIPUR (C.G.)- 492099
PH- 0771-4523921 /Email - uespllab@gmail.com

REPORT NO.: 0

TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	RESULT
6	Nickel (as Ni)	mg/L	IS:3025(Part-54):2003 RA 2019	N.D.
7	Polychlorinated biphenyls	mg/L	APHA 24th Ed. 6431-PCB-B, 702	N.D.
8	Polynuclear aromatic hydrocarbons (as PAH)	mg/L	APHA 24th Ed. 6440-PAH-B, 703	N.D.
9	Arsenic (as As)	mg/L	IS:3025(Part-37):2022	N.D.
10	Chromium (as Cr)	mg/L	IS:3025(Part-52):2003 RA 2019	N.D.
11	Trihalomethanes:			
a)	Bromoform	mg/L	APHA 6232	N.D.
b)	Dibromochloromethane	mg/L	APHA 6232	N.D.
c)	Bromodichloromethane	mg/L	APHA 6232	N.D.
d)	Chloroform	mg/L	APHA 6232	N.D.
D.	Pesticides:-			
1	Alpha HCH	µg/l	USEPA 508	N.D.
2	Beta HCH	µg/l	USEPA 508	N.D.
3	Delta HCH	µg/l	USEPA 508	N.D.
4	Alachlor	µg/l	USEPA 525.2, 507	N.D.
5	Aldrin / Dieldrin	µg/l	USEPA 508	N.D.
6	Atrazine	µg/l	USEPA 525.2,8141 A	N.D.
7	Butachlor	µg/l	USEPA 525.2,8141 A	N.D.
8	Chlorpyriphos	µg/l	USEPA 525.2,8141 A	N.D.
9	DDT (o,p and p, p-Isomers of DDT, DDE and DDD)	µg/l	USEPA 508	N.D.
10	Gamma HCH	µg/l	USEPA 508	N.D.
11	2,4-Dichlorophenoxyacetic Acid	µg/l	USEPA 515.1	N.D.
12	Endosulphan (alpha, beta and sulphate)	µg/l	USEPA 508	N.D.
13	Ethion	µg/l	USEPA 1657 A	N.D.
14	Isoproturon	µg/l	USEPA 532	N.D.
15	Malathion	µg/l	USEPA 8141 A	N.D.
16	Methyl Parathion	µg/l	USEPA 8141 A	N.D.
17	Monocrotophos	µg/l	USEPA 8141 A	N.D.
18	Phorate	µg/l	USEPA 8141 A	N.D.
E.	Microbial Parameters			
1	Total Coliform	MPN/ 100ml	IS: 1622:1981:RA:2019	90
2	E. Coli	MPN/ 100ml	IS: 1622:1981:RA:2019	22

Note: mg/lit.: milligram per liter, N.D. – Not Detected

REMARKS: RESULTS ARE AS ABOVE

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13/3/26 REVIEWED BY		For ULTIMATE ENVIROLYTICAL SOLUTIONS PVT LTD 13/03/26 AUTHORIZED SIGNATORY

--------------------------------*End of the test report*--------------------------------

Ultimate
ENVIROLYTICAL SOLUTIONS PVT. LTD.

LAB 1 : HDD-272, PHASE III - NEAR JP CHOWK, RING ROAD NO-2 KABIR NAGAR, RAIPUR (C.G.)-492099
LAB 2 : HIG-36 PHASE II, KABIR NAGAR, RAIPUR (C.G.)- 492099
PH- 0771-4523921 /Email - uespllab@gmail.com

Name & Address of The Customer	Report No.	UESPL/TR/25-26/06131	
To,	Lab Ref No.	UESPL/25-26/W/11009	
M/s DB Power Limited	Date of Sampling	06/03/2026	
Village- Badadhara	Date of Receipt	07/03/2026	
Dist.-Sakti (C.G) 495695	Date of Report	11/03/2026	
	Date of Analysis	Start: 07/03/2026	End: 11/03/2026

SAMPLE DETAILS	
Sample Type	Sewage Water
Customer Ref. No. & Date	8200006833, Dated: 22.07.2025
Customer Sample ID	1. Near – Silo Area STP # 01 2. Near – Store STP # 02
Sample Condition at Receipt	Ok (Sealed)
Packing of Sample	4 L X 1 No. Plastic Bottle, 1 L X 1 No. Glass Bottle
Sample Collected By	Laboratory Chemist
Quantity Received	5 Ltr

TEST REPORT

Sr. No.	PARAMETER	UNIT	METHOD OF TEST	Limits as per MOEF Notification	RESULTS	
					Near – Silo Area STP # 01	Near – Store STP # 02
1	pH Value	–	IS:3025:(Part-11):2022	5.5 to 9.0	7.38	7.44
2	Total Suspended Solid	mg/L	IS:3025:(Part-17):2022	100	39.8	24.5
3	Chemical Oxygen Demand	mg/L	IS:3025:(Part-58):2023	250	130	120
4	Bio-chemical Oxygen Demand at 27°C for three day	mg/L	IS:3025:(Part-44):2023	30	27.5	24.6
5	Oil & Grease	mg/L	IS:3025:(Part-39):2021	10.0	N.D.	N.D.
6	Total Nitrogen	mg/L	APHA 24th Ed.2023, 4500-Norg-B&C 452-453 & 4500-NH_3-B&C, 424-425 & 4500-NO_3-B, 434 & 4500-NO_2-B, 449	-	20.14	18.28
7	Total Phosphorus	mg/L	IS:3025 (Part-31)-1988 RA 2022	-	6.78	9.12
8	Faecal Coliform	MPN/100	APHA 24th Edition 2023 -9221-B,C,E1	-	<1.8	<1.8

Note: mg/lit.: milligram per liter, N.D. – Not Detected.

REMARKS: RESULTS ARE AS ABOVE

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REVIEWED BY		For ULTIMATE ENVIROLYTICAL SOLUTIONS PVT LTD AUTHORIZED SIGNATORY
11/3/26		11/03/26

-------------------------------End of the test report-------------------------------

Ultimate
ENVIROLYTICAL SOLUTIONS PVT. LTD.

LAB 1 : HDD-272, PHASE III - NEAR JP CHOWK, RING ROAD NO-2
KABIR NAGAR, RAIPUR (C.G.)-492099
LAB 2 : HIG-36 PHASE II, KABIR NAGAR, RAIPUR (C.G.)- 492099
PH- 0771-4523921 /Email - uespllab@gmail.com

Name & Address Of The Customer	Report No.	UESPL/TR/25-26/06132	
To,	Lab Ref No.	UESPL/25-26/W/011010	
M/s DB Power Limited	Date of Sampling	06/03/2026	
Village- Badadhara	Date of Receipt	07/03/2026	
Dist.-Sakti (C.G) 495695	Date of Report	11/03/2026	
	Date of Analysis	Start: 07/03/2026	End: 11/03/2026

SAMPLE DETAILS	
Sample Type	Sewage Water
Customer Ref. No. & Date	8200006833, Dated: 22.07.2025
Customer Sample ID	1. Near – DM Plant STP # 03 2. Near – CW Chlorination # 04
Sample Condition at Receipt	Ok (Sealed)
Packing of Sample	4 L X 1 No. Plastic Bottle, 1 L X 1 No. Glass Bottle
Sample Collected By	Laboratory Chemist
Quantity Received	5 Ltr

TEST REPORT

Sr. No.	PARAMETER	UNIT	METHOD OF TEST	Limits as per MOEF Notification	RESULTS	
					Near – DM Plant STP # 03	Near – CW Chlorination # 04
1	pH Value	-	IS:3025:(Part-11):2022	5.5 to 9.0	7.37	7.38
2	Total Suspended Solid	mg/L	IS:3025:(Part-17):2022	100	32.1	31.45
3	Chemical Oxygen Demand	mg/L	IS:3025:(Part-58):2023	250	140	130
4	Bio-chemical Oxygen Demand at 27°C for three day	mg/L	IS:3025:(Part-44):2023	30	26.5	19.1
5	Oil & Grease	mg/L	IS:3025:(Part-39):2021	10.0	N.D.	N.D.
6	Total Nitrogen	mg/L	APHA 24th Ed.2023, 4500-Norg-B&C 452-453 & 4500-NH_3-B&C, 424-425 & 4500-NO_3-B, 434 & 4500-NO_2-B, 449	-	17.24	19.18
7	Total Phosphorus	mg/L	IS:3025 (Part-31)-1988 RA 2022	-	9.24	8.26
8	Faecal Coliform	MPN/100	APHA 24th Edition 2023 -9221-B,C,E1	-	<1.8	<1.8

Note: mg/lit.: milligram per liter, N.D. – Not Detected.

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		For ULTIMATE ENVIROLYTICAL SOLUTIONS PVT LTD
11/3/26		11/03/26
REVIEWED BY		**AUTHORIZED SIGNATORY**

---------------------------------*End of the test report*---------------------------------

Ultimate ENVIROLYTICAL SOLUTIONS PVT. LTD.

LAB 1 : HDD-272, PHASE III - NEAR JP CHOWK, RING ROAD NO-2 KABIR NAGAR, RAIPUR (C.G.)-492099
LAB 2 : HIG-36 PHASE II, KABIR NAGAR, RAIPUR (C.G.)- 492099
PH- 0771-4523921 /Email - uespllab@gmail.com

Name & Address of The Customer	Report No.	UESPL/TR/25-26/06133	
To,	Lab Ref No.	UESPL/25-26/W/11011	
M/s DB Power Limited	Date of Sampling	06/03/2026	
Village- Badadhara	Date of Receipt	07/03/2026	
Dist.-Sakti (C.G) 495695	Date of Report	11/03/2026	
	Date of Analysis	Start: 07/03/2026	End: 11/03/2026

SAMPLE DETAILS	
Sample Type	Sewage Water
Customer Ref. No. & Date	8200006833, Dated: 22.07.2025
Customer Sample ID	1. Near Chemical House STP # 05 2. Hydrogen Plant STP # 06
Sample Condition at Receipt	Ok (Sealed)
Packing of Sample	4 L X 1 No. Plastic Bottle, 1 L X 1 No. Glass Bottle
Sample Collected By	Laboratory Chemist
Quantity Received	5 Ltr

TEST REPORT

Sr. No.	PARAMETER	UNIT	METHOD OF TEST	Limits as per MOEF Notification	RESULTS	
					Near Chemical House STP # 05	Hydrogen Plant STP # 06
1	pH Value	-	IS:3025:(Part-11):2022	5.5 to 9.0	7.54	7.43
2	Total Suspended Solid	mg/L	IS:3025:(Part-17):2022	100	29.6	31.6
3	Chemical Oxygen Demand	mg/L	IS:3025:(Part-58):2023	250	120	150
4	Bio-chemical Oxygen Demand at 27°C for three day	mg/L	IS:3025:(Part-44):2023	30	24.4	29.1
5	Oil & Grease	mg/L	IS:3025:(Part-39):2021	10.0	N.D.	N.D.
6	Total Nitrogen	mg/L	APHA 24th Ed.2023, 4500-Norg-B&C 452-453 & 4500-NH_3-B&C, 424-425 & 4500-NO_3-B, 434 & 4500-NO_2-B, 449	-	20.18	18.48
7	Total Phosphorus	mg/L	IS:3025 (Part-31)-1988 RA 2022	-	9.66	8.48
8	Faecal Coliform	MPN/100	APHA 24th Edition 2023 -9221-B,C,E1	-	<1.8	<1.8

Note: mg/lit.: milligram per liter, N.D. – Not Detected.

REMARKS: RESULTS ARE AS ABOVE

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		For ULTIMATE ENVIROLYTICAL SOLUTIONS PVT LTD
11/3/26		11/03/26
REVIEWED BY		AUTHORIZED SIGNATORY

-----------------------------------*End of the test report*-----------------------------------

Format No.: UESPL/FORM/09

Ultimate
ENVIROLYTICAL SOLUTIONS PVT. LTD.

LAB 1 : HDD-272, PHASE III - NEAR JP CHOWK, RING ROAD NO-2
KABIR NAGAR, RAIPUR (C.G.)-492099
LAB 2 : HIG-36 PHASE II, KABIR NAGAR, RAIPUR (C.G.)- 492099
PH- 0771-4523921 /Email - uespllab@gmail.com

Name & Address Of The Customer	Report No.	UESPL/TR/25-26/06134	
To,	Lab Ref No.	UESPL/25-26/W/011012	
M/s DB Power Limited	Date of Sampling	06/03/2026	
Village- Badadhara	Date of Receipt	07/03/2026	
Dist.-Sakti (C.G) 495695	Date of Report	11/03/2026	
	Date of Analysis	Start: 07/03/2026	End: 11/03/2026

SAMPLE DETAILS	
Sample Type	Sewage Water
Customer Ref. No. & Date	8200006833, Dated: 22.07.2025
Customer Sample ID	1. Near - FOPH STP # 07 2. Near – Service Building STP # 08
Sample Condition at Receipt	Ok (Sealed)
Packing of Sample	4 L X 1 No. Plastic Bottle, 1 L X 1 No. Glass Bottle
Sample Collected By	Laboratory Chemist
Quantity Received	5 Ltr

TEST REPORT

Sr. No.	PARAMETER	UNIT	METHOD OF TEST	Limits as per MOEF Notification	RESULTS	
					Near - FOPH STP # 07	Near – Service Building STP # 08
1	pH Value	-	IS:3025:(Part-11):2022	5.5 to 9.0	7.48	7.29
2	Total Suspended Solid	mg/L	IS:3025:(Part-17):2022	100	27.4	30.6
3	Chemical Oxygen Demand	mg/L	IS:3025:(Part-58):2023	250	110	120
4	Bio-chemical Oxygen Demand at 27°C for three day	mg/L	IS:3025:(Part-44):2023	30	23.3	23.4
5	Oil & Grease	mg/L	IS:3025:(Part-39):2021	10.0	N.D.	N.D.
6	Total Nitrogen	mg/L	APHA 24th Ed.2023, 4500-Norg-B&C 452-453 & 4500-NH_3-B&C, 424-425 & 4500-NO_3-B, 434 & 4500-NO_2-B, 449	-	19.24	16.88
7	Total Phosphorus	mg/L	IS:3025 (Part-31)-1988 RA 2022	-	7.44	7.94
8	Faecal Coliform	MPN/100	APHA 24th Edition 2023 -9221-B,C,E1	-	<1.8	<1.8

Note: mg/lit.: milligram per liter, N.D. – Not Detected.

REMARKS: RESULTS ARE AS ABOVE

Terms & conditions

- *The report for publication, arbitration or as legal dispute is forbidden.*
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		For ULTIMATE ENVIROLYTICAL SOLUTIONS PVT LTD
11/3/26 **REVIEWED BY**		11/03/26 **AUTHORIZED SIGNATORY**

---End of the test report---

Ultimate
ENVIROLYTICAL SOLUTIONS PVT. LTD.

LAB 1 : HDD-272, PHASE III - NEAR JP CHOWK, RING ROAD NO-2 KABIR NAGAR, RAIPUR (C.G.)-492099
LAB 2 : HIG-36 PHASE II, KABIR NAGAR, RAIPUR (C.G.)- 492099
PH- 0771-4523921 /Email - uespllab@gmail.com

Name & Address of The Customer			
To, M/s DB Power Limited Village- Badadhara Dist.-Sakti (C.G) 495695	Report No.	UESPL/TR/25-26/06135	
	Lab Ref No.	UESPL/25-26/W/11013	
	Date of Sampling	06/03/2026	
	Date of Receipt	07/03/2026	
	Date of Report	11/03/2026	
	Date of Analysis	Start: 07/03/2026	End: 11/03/2026

SAMPLE DETAILS	
Sample Type	Sewage Water
Customer Ref. No. & Date	8200006833, Dated: 22.07.2025
Customer Sample ID	1. Near –Main Control Room STP # 09 2. Ash Surry Pump House STP # 10
Sample Condition at Receipt	Ok (Sealed)
Packing of Sample	4 L X 1 No. Plastic Bottle, 1 L X 1 No. Glass Bottle
Sample Collected By	Laboratory Chemist
Quantity Received	5 Ltr

TEST REPORT

Sr. No.	PARAMETER	UNIT	METHOD OF TEST	Limits as per MOEF Notification	RESULTS	
					Near – Main Control Room STP # 09	Ash Surry Pump House STP # 10
1	pH Value	–	IS:30250:(Part-11):2022	5.5 to 9.0	7.34	7.41
2	Total Suspended Solid	mg/L	IS:3025:(Part-17):2022	100	26.4	34.2
3	Chemical Oxygen Demand	mg/L	IS:3025:(Part-58):2023	250	140	150
4	Bio-chemical Oxygen Demand at 27°C for three day	mg/L	IS:3025:(Part-44):2023	30	30.8	35.1
5	Oil & Grease	mg/L	IS:3025:(Part-39):2021	10.0	N.D.	N.D.
6	Total Nitrogen	mg/L	APHA 24th Ed.2023, 4500-Norg-B&C 452-453 & 4500-NH_3-B&C, 424-425 & 4500-NO_3-B, 434 & 4500-NO_2-B, 449	-	19.28	15.84
7	Total Phosphorus	mg/L	IS:3025 (Part-31)- 1988 RA 2022	-	10.26	9.26
8	Faecal Coliform	MPN/100	APHA 24th Edition 2023 - 9221-B,C,E1	-	<1.8	<1.8

Note: mg/lit.: milligram per liter, N.D. – Not Detected.

REMARKS: RESULTS ARE AS ABOVE

Terms & conditions

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11/3/26 REVIEWED BY		For ULTIMATE ENVIROLYTICAL SOLUTIONS PVT LTD 11/03/26 AUTHORIZED SIGNATORY

-----End of the test report-----

Ultimate
ENVIROLYTICAL SOLUTIONS PVT. LTD.

LAB 1 : HDD-272, PHASE III - NEAR JP CHOWK, RING ROAD NO-2
KABIR NAGAR, RAIPUR (C.G.)-492099
LAB 2 : HIG-36 PHASE II, KABIR NAGAR, RAIPUR (C.G.)- 492099
PH- 0771-4523921 /Email - uespllab@gmail.com

Name & Address Of The Customer	Report No.	UESPL/TR/25-26/06136	
To,	Lab Ref No.	UESPL/25-26/W/011014	
M/s DB Power Limited	Date of Sampling	06/03/2026	
Village- Badadhara	Date of Receipt	07/03/2026	
Dist.-Sakti (C.G) 495695	Date of Report	11/03/2026	
	Date of Analysis	Start: 07/03/2026	End: 11/03/2026

SAMPLE DETAILS	
Sample Type	Sewage Water
Customer Ref. No. & Date	8200006833, Dated: 22.07.2025
Customer Sample ID	1. Near – TAC Building STP # 11 2. Near – ESP # 1 Building STP # 12
Sample Condition at Receipt	Ok (Sealed)
Packing of Sample	4 L X 1 No. Plastic Bottle, 1 L X 1 No. Glass Bottle
Sample Collected By	Laboratory Chemist
Quantity Received	5 Ltr

TEST REPORT

Sr. No.	PARAMETER	UNIT	METHOD OF TEST	Limits as per MOEF Notification	RESULTS	
					Near – TAC Building STP # 11	Near – ESP # 1 Building STP # 12
1	pH Value	–	IS:3025:(Part-11):2022	5.5 to 9.0	7.48	7.35
2	Total Suspended Solid	mg/L	IS:3025:(Part-17):2022	100	29.8	28.4
3	Chemical Oxygen Demand	mg/L	IS:3025:(Part-58):2023	250	110	100
4	Bio-chemical Oxygen Demand at 27°C for three day	mg/L	IS:3025:(Part-44):2023	30	32.1	23.7
5	Oil & Grease	mg/L	IS:3025:(Part-39):2021	10.0	N.D.	N.D.
6	Total Nitrogen	mg/L	APHA 24th Ed.2023, 4500-Norg-B&C 452-453 & 4500-NH_3-B&C, 424-425 & 4500-NO_3-B, 434 & 4500-NO_2-B, 449	-	14.36	16.68
7	Total Phosphorus	mg/L	IS:3025 (Part-31)-1988 RA 2022	-	6.88	9.28
8	Faecal Coliform	MPN/100	APHA 24th Edition 2023 -9221-B,C,E1	-	<1.8	<1.8

Note: mg/lit.: milligram per liter, N.D. – Not Detected.

REMARKS: RESULTS ARE AS ABOVE

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11/3/26 REVIEWED BY		For ULTIMATE ENVIROLYTICAL SOLUTIONS PVT LTD 11/03/26 AUTHORIZED SIGNATORY

-------------------------------*End of the test report*-------------------------------

Ultimate
ENVIROLYTICAL SOLUTIONS PVT. LTD.

LAB 1 : HDD-272, PHASE III - NEAR JP CHOWK, RING ROAD NO-2
KABIR NAGAR, RAIPUR (C.G.)-492099
LAB 2 : HIG-36 PHASE II, KABIR NAGAR, RAIPUR (C.G.)- 492099
PH- 0771-4523921 /Email - uespllab@gmail.com

Name & Address of The Customer	Report No.	UESPL/TR/25-26/06137	
To,	Lab Ref No.	UESPL/25-26/W/11015	
M/s DB Power Limited	Date of Sampling	06/03/2026	
Village- Badadhara	Date of Receipt	07/03/2026	
Dist.-Sakti (C.G) 495695	Date of Report	11/03/2026	
	Date of Analysis	Start: 07/03/2026	End: 11/03/2026

SAMPLE DETAILS	
Sample Type	Sewage Water
Customer Ref. No. & Date	8200006833, Dated: 22.07.2025
Customer Sample ID	1. Near – ESP # 2 Building STP # 13 2. Near – Bunker MCC STP # 14
Sample Condition at Receipt	Ok (Sealed)
Packing of Sample	4 L X 1 No. Plastic Bottle, 1 L X 1 No. Glass Bottle
Sample Collected By	Laboratory Chemist
Quantity Received	5 Ltr

TEST REPORT

Sr. No.	PARAMETER	UNIT	METHOD OF TEST	Limits as per MOEF Notification	RESULTS	
					Near – ESP # 2 Building STP # 13	Near – Bunker MCC STP # 14
1	pH Value	-	IS:3025:(Part-11):2022	5.5 to 9.0	7.32	7.34
2	Total Suspended Solid	mg/L	IS:3025:(Part-17):2022	100	30.6	32.8
3	Chemical Oxygen Demand	mg/L	IS:3025:(Part-58):2023	250	120	90
4	Bio-chemical Oxygen Demand at 27°C for three day	mg/L	IS:3025:(Part-44):2023	30	21.7	19.1
5	Oil & Grease	mg/L	IS:3025:(Part-39):2021	10.0	N.D.	N.D.
6	Total Nitrogen	mg/L	APHA 24th Ed.2023, 4500-Norg-B&C 452-453 & 4500-NH_3-B&C, 424-425 & 4500-NO_3-B, 434 & 4500-NO_2-B, 449	-	14.18	17.28
7	Total Phosphorus	mg/L	IS:3025 (Part-31)-1988 RA 2022	-	6.88	8.44
8	Faecal Coliform	MPN/100	APHA 24th Edition 2023 -9221-B,C,E1	-	<1.8	<1.8

Note: mg/lit.: milligram per liter, N.D. – Not Detected.

REMARKS: RESULTS ARE AS ABOVE

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		For ULTIMATE ENVIROLYTICAL SOLUTIONS PVT LTD
11/3/26		11/03/26
REVIEWED BY		AUTHORIZED SIGNATORY

-End of the test report-

Ultimate
ENVIROLYTICAL SOLUTIONS PVT. LTD.

LAB 1 : HDD-272, PHASE III - NEAR JP CHOWK, RING ROAD NO-2 KABIR NAGAR, RAIPUR (C.G.)-492099
LAB 2 : HIG-36 PHASE II, KABIR NAGAR, RAIPUR (C.G.)- 492099
PH- 0771-4523921 /Email - uespllab@gmail.com

Name & Address Of The Customer			
To, **M/s DB Power Limited** **Village- Badadhara** **Dist.-Sakti (C.G) 495695**	Report No.	UESPL/TR/25-26/06138	
	Lab Ref No.	UESPL/25-26/W/11016	
	Date of Sampling	06/03/2026	
	Date of Receipt	07/03/2026	
	Date of Report	11/03/2026	
	Date of Analysis	Start: 07/03/2026	End: 11/03/2026

SAMPLE DETAILS	
Sample Type	Sewage Water
Customer Ref. No. & Date	8200006833, Dated: 22.07.2025
Customer Sample ID	1. Near – CHP STP # 15 2. Near – Aditya Canteen STP # 16
Sample Condition at Receipt	Ok (Sealed)
Packing of Sample	4 L X 1 No. Plastic Bottle, 1 L X 1 No. Glass Bottle
Sample Collected By	Laboratory Chemist
Quantity Received	5 Ltr

TEST REPORT

Sr. No.	PARAMETER	UNIT	METHOD OF TEST	Limits as per MOEF Notification	RESULTS	
					Near – CHP STP # 15	Near – Aditya Canteen STP # 16
1	pH Value	–	IS:3025:(Part-11):2022	5.5 to 9.0	7.43	7.31
2	Total Suspended Solid	mg/L	IS:3025:(Part-17):2022	100	30.4	27.2
3	Chemical Oxygen Demand	mg/L	IS:3025:(Part-58):2023	250	160	100
4	Bio-chemical Oxygen Demand at 27°C for three day	mg/L	IS:3025:(Part-44):2023	30	29.9	21.2
5	Oil & Grease	mg/L	IS:3025:(Part-39):2021	10.0	N.D.	N.D.
6	Total Nitrogen	mg/L	APHA 24th Ed.2023, 4500-Norg-B&C 452-453 & 4500-NH_3-B&C, 424-425 & 4500-NO_3-B, 434 & 4500-NO_2-B, 449	-	19.28	18.18
7	Total Phosphorus	mg/L	IS:3025 (Part-31)-1988 RA 2022	-	8.44	7.36
8	Faecal Coliform	MPN/100	APHA 24th Edition s2023 -9221-B,C,E1	-	<1.8	<1.8

Note: mg/lit.: milligram per liter, N.D. – Not Detected.

REMARKS: RESULTS ARE AS ABOVE

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11/3/26 **REVIEWED BY**		For ULTIMATE ENVIROLYTICAL SOLUTIONS PVT LTD 11/03/26 **AUTHORIZED SIGNATORY**

---------------------------------*End of the test report*---------------------------------

Ultimate
ENVIROLYTICAL SOLUTIONS PVT. LTD.

LAB 1 : HDD-272, PHASE III - NEAR JP CHOWK, RING ROAD NO-2
KABIR NAGAR, RAIPUR (C.G.)-492099
LAB 2 : HIG-36 PHASE II, KABIR NAGAR, RAIPUR (C.G.)- 492099
PH- 0771-4523921 /Email - uespllab@gmail.com

Name & Address Of The Customer	Report No.	UESPL/TR/25-26/06139	
To,	Lab Ref No.	UESPL/25-26/W/11017	
M/s DB Power Limited	Date of Sampling	06/03/2026	
Village- Badadhara	Date of Receipt	07/03/2026	
Dist.-Sakti (C.G) 495695	Date of Report	11/03/2026	
	Date of Analysis	Start: 07/03/2026	End: 11/03/2026

SAMPLE DETAILS	
Sample Type	Sewage Water
Customer Ref. No. & Date	8200006833, Dated: 22.07.2025
Customer Sample ID	1. STP # 17 2. STP # 18
Sample Condition at Receipt	Ok (Sealed)
Packing of Sample	4 L X 1 No. Plastic Bottle, 1 L X 1 No. Glass Bottle
Sample Collected By	Laboratory Chemist
Quantity Received	5 Ltr

TEST REPORT

Sr. No.	PARAMETER	UNIT	METHOD OF TEST	Limits as per MOEF Notification	RESULTS	
					STP # 17	STP # 18
1	pH Value	-	IS:3025:(Part-11):2022	5.5 to 9.0	7.26	7.38
2	Total Suspended Solid	mg/L	IS:3025:(Part-17):2022	100	28.8	29.4
3	Chemical Oxygen Demand	mg/L	IS:3025:(Part-58):2023	250	130	120
4	Bio-chemical Oxygen Demand at 27°C for three day	mg/L	IS:3025:(Part-44):2023	30	27.5	24.4
5	Oil & Grease	mg/L	IS:3025:(Part-39):2021	10.0	N.D.	N.D.
6	Total Nitrogen	mg/L	APHA 24th Ed.2023, 4500-Norg-B&C 452-453 & 4500-NH_3-B&C, 424-425 & 4500-NO_3-B, 434 & 4500-NO_2-B, 449	-	16.8	16.82
7	Total Phosphorus	mg/L	IS:3025 (Part-31)-1988 RA 2022	-	8.42	9.24
8	Faecal Coliform	MPN/100	APHA 24th Edition s2023 -9221-B,C,E1	-	<1.8	<1.8

Note: mg/lit.: milligram per liter, N.D. – Not Detected.

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		For ULTIMATE ENVIROLYTICAL SOLUTIONS PVT LTD
11/3/26		11/03/26
REVIEWED BY		AUTHORIZED SIGNATORY

------------------------------*End of the test report*------------------------------

Ultimate
ENVIROLYTICAL SOLUTIONS PVT. LTD.

LAB 1 : HDD-272, PHASE III - NEAR JP CHOWK, RING ROAD NO-2
KABIR NAGAR, RAIPUR (C.G.)-492099
LAB 2 : HIG-36 PHASE II, KABIR NAGAR, RAIPUR (C.G.)- 492099
PH- 0771-4523921 /Email - uespllab@gmail.com

Name & Address of The Customer			
To, M/s DB Power Limited Village- Badadhara Dist.-Sakti (C.G) 495695	Report No.	UESPL/TR/25-26/06140	
	Lab Ref No.	UESPL/25-26/W/11018	
	Date of Sampling	05/03/2026	
	Date of Receipt	06/03/2026	
	Date of Report	10/03/2026	
	Date of Analysis	Start: 06/03/2026	End: 10/03/2026

SAMPLE DETAILS	
Sample Type	Effluent water
Customer Ref. No. & Date	8200006833, Dated: 22.07.2025
Customer Sample ID	Near – Guard Pond Inlet
Sample Condition at Receipt	Ok (Sealed)
Packing of Sample	4 L X 1 No. Plastic Bottle, 1 L X 1 No. Glass Bottle
Sample Collected By	Laboratory Chemist
Quantity Received	5 Ltr

TEST REPORT

Sr. No.	PARAMETER	UNIT	METHOD OF TEST	RESULTS
1	pH Value	-	IS:3025:(Part-11):2022	7.72
2	Total Suspended Solid	mg/L	IS:3025:(Part-17):2022	58.4
3	Chemical Oxygen Demand	mg/L	IS:3025:(Part-58):2023	170
4	Bio-chemical Oxygen Demand at 27°C for three day	mg/L	IS:3025:(Part-44):2023	40.3
5	Oil & Grease	mg/L	IS:3025:(Part-39):2021	1.6

Note: mg/lt.: milligram per liter, N.D. – Not Detected.

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		For ULTIMATE ENVIROLYTICAL SOLUTIONS PVT LTD
10/3/26 REVIEWED BY		10/03/26 AUTHORIZED SIGNATORY

-End of the test report-

Ultimate
ENVIROLYTICAL SOLUTIONS PVT. LTD.

LAB 1 : HDD-272, PHASE III - NEAR JP CHOWK, RING ROAD NO-2
KABIR NAGAR, RAIPUR (C.G.)-492099
LAB 2 : HIG-36 PHASE II, KABIR NAGAR, RAIPUR (C.G.)- 492099
PH- 0771-4523921 /Email - uespllab@gmail.com

Name & Address of The Customer			
To, M/s DB Power Limited Village- Badadhara Dist.-Sakti (C.G) 495695	Report No.	UESPL/TR/25-26/06141	
	Lab Ref No.	UESPL/25-26/W/11019	
	Date of Sampling	05/03/2026	
	Date of Receipt	06/03/2026	
	Date of Report	10/03/2026	
	Date of Analysis	Start: 06/03/2026	End: 10/03/2026

SAMPLE DETAILS	
Sample Type	Effluent water
Customer Ref. No. & Date	8200006833, Dated: 22.07.2025
Customer Sample ID	Ash Pond Recovery Pond
Sample Condition at Receipt	Ok (Sealed)
Packing of Sample	3 L X 1 No. PVC Can 1 L X 1 No. PVC Can 1 L X 1 No. Glass Bottle
Sample Collected By	Laboratory Chemist
Quantity Received	5 Ltr

TEST REPORT

Sr. No.	PARAMETER	UNIT	METHOD OF TEST	Limits as per Consent	RESULTS
1	pH	-	IS:3025:(Part-11):2022	6.5 to 8.5	7.38
2	Total Suspended Solid	mg/L	IS:3025:(Part-17):2022	100	34.8
3	Oil & Grease	mg/L	IS:3025:(Part-39):2021	20	N.D.
4	Chemical Oxygen Demand	mg/L	IS:3025:(Part-58):2023	250	160
5	Bio-chemical Oxygen Demand at 27°C for three day	mg/L	IS:3025:(Part-44):2023	30	24.1
6	Fixed Dissolved Solids (FDS)	mg/L	IS:3025:(Part-16):2023	--	N.D.

Note: mg/lt.: milligram per liter, N.D. – Not Detected.

REMARKS: RESULTS ARE AS ABOVE

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- *This is for information as the party has asked for above test(s) only.*

10/3/26 REVIEWED BY		For ULTIMATE ENVIROLYTICAL SOLUTIONS PVT LTD 10/03/26 AUTHORIZED SIGNATORY

-----------------------------------End of the test report-----------------------------------

Ultimate
ENVIROLYTICAL SOLUTIONS PVT. LTD.

LAB 1 : HDD-272, PHASE III - NEAR JP CHOWK, RING ROAD NO-2
KABIR NAGAR, RAIPUR (C.G.)-492099
LAB 2 : HIG-36 PHASE II, KABIR NAGAR, RAIPUR (C.G.)- 492099
PH- 0771-4523921 /Email - uespllab@gmail.com

Name & Address Of The Customer			
To, M/s DB Power Limited Village- Badadhara Dist.-Sakti (C.G) 495695	Report No.	UESPL/TR/25-26/06142	
	Lab Ref No.	UESPL/25-26/W/11020	
	Date of Sampling	05/03/2026	
	Date of Receipt	06/03/2026	
	Date of Report	10/03/2026	
	Date of Analysis	Start: 06/03/2026	End: 10/03/2026

SAMPLE DETAILS

Sample Type	Effluent water
Customer Ref. No. & Date	8200006833, Dated: 22.07.2025
Customer Sample ID	AWRS Treated Water
Sample Condition at Receipt	Ok (Sealed)
Packing of Sample	3 L X 1 No. PVC Can 1 L X 1 No. PVC Can 1 L X 1 No. Glass Bottle
Sample Collected By	Laboratory Chemist
Quantity Received	5 Ltr

TEST REPORT

Sr. No.	PARAMETER	UNIT	METHOD OF TEST	Limits as per MOEF Notification	RESULTS
1	Temperature	°C	IS:3025:(Part-9):1983, RA 2002	Not More than 5°C higher than the intake water temperature	25.2
2	pH Value	-	IS:3025:(Part-11):2022	5.5 to 9.0	7.48
3	Total Suspended Solid	mg/L	IS:3025:(Part-17):2022	100	44.8
4	Chemical Oxygen Demand	mg/L	IS:3025:(Part-58):2023	250	140
5	Bio-chemical Oxygen Demand at 27°C for three day	mg/L	IS:3025:(Part-44):2023	30	18.5
6	Oil & Grease	mg/L	IS:3025:(Part-39):2021	10.0	1.2
7	Phosphate (as PO_4)	mg/L	IS:3025:(Part-31):1988, RA 2022	5.0	N.D.

Note: mg/lit.: milligram per liter, N.D. – Not Detected.

REMARKS: RESULTS ARE AS ABOVE

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- *This is for information as the party has asked for above test(s) only.*

		For ULTIMATE ENVIROLYTICAL SOLUTIONS PVT LTD
10/3/26 REVIEWED BY		10/03/26 AUTHORIZED SIGNATORY

---------------------------------*End of the test report*---------------------------------

Ultimate
ENVIROLYTICAL SOLUTIONS PVT. LTD.

LAB 1 : HDD-272, PHASE III - NEAR JP CHOWK, RING ROAD NO-2
KABIR NAGAR, RAIPUR (C.G.)-492099
LAB 2 : HIG-36 PHASE II, KABIR NAGAR, RAIPUR (C.G.)- 492099
PH- 0771-4523921 /Email - uespllab@gmail.com

Name & Address Of The Customer		
To, M/s DB Power Limited Village- Badadhara Dist.-Sakti (C.G) 495695	Report No.	UESPL/TR/25-26/06143
	Lab Ref No.	UESPL/25-26/W/11021
	Date of Sampling	05/03/2026
	Date of Receipt	06/03/2026
	Date of Report	10/03/2026
	Date of Analysis	Start: 06/03/2026 End: 10/03/2026

SAMPLE DETAILS

Sample Type	Effluent water
Customer Ref. No. & Date	8200006833, Dated: 22.07.2025
Customer Sample ID	Coal Settling Pond
Sample Condition at Receipt	Ok (Sealed)
Packing of Sample	3 L X 1 No. PVC Can 1 L X 1 No. PVC Can 1 L X 1 No. Glass Bottle
Sample Collected By	Laboratory Chemist
Quantity Received	5 Ltr

TEST REPORT

Sr. No.	PARAMETER	UNIT	METHOD OF TEST	Limits as per Consent	RESULTS
1	pH	-	IS:3025:(Part-11):2022	6.5 to 8.5	7.37
2	Total Suspended Solid	mg/L	IS:3025:(Part-17):2022	100	24.8
3	Oil & Grease	mg/L	IS:3025:(Part-39):2021	20	N.D.

Note: mg/lit.: milligram per liter, N.D. – Not Detected.

REMARKS: RESULTS ARE AS ABOVE

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- *Test sample will be retained for 15 days after issue of test report unless otherwise agreed with customer.*
- *This is for information as the party has asked for above test(s) only.*

10/3/26 REVIEWED BY		For ULTIMATE ENVIROLYTICAL SOLUTIONS PVT LTD 10/03/26 AUTHORIZED SIGNATORY

-----End of the test report-----

Ultimate
ENVIROLYTICAL SOLUTIONS PVT. LTD.

LAB 1 : HDD-272, PHASE III - NEAR JP CHOWK, RING ROAD NO-2
KABIR NAGAR, RAIPUR (C.G.)-492099
LAB 2 : HIG-36 PHASE II, KABIR NAGAR, RAIPUR (C.G.)- 492099
PH- 0771-4523921 /Email - uespllab@gmail.com

Name & Address Of The Customer			
To, **M/s DB Power Limited** **Village- Badadhara** **Dist.-Sakti (C.G) 495695**	Report No.	UESPL/TR/25-26/06144	
	Lab Ref No.	UESPL/25-26/W/11022	
	Date of Sampling	05/03/2026	
	Date of Receipt	06/03/2026	
	Date of Report	10/03/2026	
	Date of Analysis	Start: 06/03/2026	End: 10/03/2026

SAMPLE DETAILS

Sample Type	Effluent water
Customer Ref. No. & Date	8200006833, Dated: 22.07.2025
Customer Sample ID	Guard Pond Outlet
Sample Condition at Receipt	Ok (Sealed)
Packing of Sample	4 L X 1 No. Plastic Bottle, 1 L X 1 No. Glass Bottle
Sample Collected By	Laboratory Chemist
Quantity Received	5 Ltr

TEST REPORT

Sr. No.	PARAMETER	UNIT	METHOD OF TEST	Limits as per MOEF Notification	RESULTS
1	pH Value	-	IS:3025:(Part-11):2022	5.5 to 9.0	7.29
2	Total Suspended Solid	mg/L	IS:3025:(Part-17):2022	100	13.8
3	Chemical Oxygen Demand	mg/L	IS:3025:(Part-58):2023	250	50
4	Bio-chemical Oxygen Demand at 27°C for three day	mg/L	IS:3025:(Part-44):2023	30	8.2
5	Oil & Grease	mg/L	IS:3025:(Part-39):2021	10.0	Absent

Note: mg/lit.: milligram per liter, N.D. – Not Detected.

REMARKS: RESULTS ARE AS ABOVE

Terms & conditions

- *The report for publication, arbitration or as legal dispute is forbidden.*
- *Test sample will be retained for 15 days after issue of test report unless otherwise agreed with customer.*
- *This is for information as the party has asked for above test(s) only.*

		For ULTIMATE ENVIROLYTICAL SOLUTIONS PVT LTD
10/3/26 **REVIEWED BY**		10/03/26 **AUTHORIZED SIGNATORY**

End of the test report

Ultimate
ENVIROLYTICAL SOLUTIONS PVT. LTD.

LAB 1 : HDD-272, PHASE III - NEAR JP CHOWK, RING ROAD NO-2 KABIR NAGAR, RAIPUR (C.G.)-492099
LAB 2 : HIG-36 PHASE II, KABIR NAGAR, RAIPUR (C.G.)- 492099
PH- 0771-4523921 /Email - uespllab@gmail.com

Name & Address Of The Customer	Report No.	UESPL/TR/25-26/06145	
To,	Lab Ref No.	UESPL/25-26/W/11023	
M/s DB Power Limited	Date of Sampling	05/03/2026	
Village- Badadhara	Date of Receipt	06/03/2026	
Dist.-Sakti (C.G) 495695	Date of Report	10/03/2026	
	Date of Analysis	Start: 06/03/2026	End: 10/03/2026

SAMPLE DETAILS

Sample Type	Effluent water
Customer Ref. No. & Date	8200006833, Dated: 22.07.2025
Customer Sample ID	Boiler Blow Down
Sample Condition at Receipt	Ok (Sealed)
Packing of Sample	4 L X 1 No. Plastic Bottle, 1 L X 1 No. Glass Bottle
Sample Collected By	Laboratory Chemist
Quantity Received	5 Ltr

TEST REPORT

Sr. No.	PARAMETER	UNIT	METHOD OF TEST	Limits as per MOEF Notification	RESULTS
1	Suspended Solid	mg/L	IS:3025:(Part-17):2022	100	9.2
2	Copper (as Cu)	mg/L	IS:3025:(Part-42):1992 RA 2019	1.0	N.D.
3	Iron (as Fe)	mg/L	IS:3025:(Part-53):2003 RA 2019	1.0	N.D.
4	Oil & Grease	mg/L	IS:3025:(Part-39):2021	10.0	N.D.

Note: mg/lit.: milligram per liter, N.D. – Not Detected.

REMARKS: RESULTS ARE AS ABOVE

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- *This is for information as the party has asked for above test(s) only.*

		For ULTIMATE ENVIROLYTICAL SOLUTIONS PVT LTD
10/3/26		10/03/26
REVIEWED BY		AUTHORIZED SIGNATORY

----------End of the test report----------

Ultimate
ENVIROLYTICAL SOLUTIONS PVT. LTD.

LAB 1 : HDD-272, PHASE III - NEAR JP CHOWK, RING ROAD NO-2
KABIR NAGAR, RAIPUR (C.G.)-492099
LAB 2 : HIG-36 PHASE II, KABIR NAGAR, RAIPUR (C.G.)- 492099
PH- 0771-4523921 /Email - uespllab@gmail.com

Name & Address of The Customer		
To, **M/s DB Power Limited** **Village- Badadhara** **Dist.-Sakti (C.G) 495695**	Report No.	UESPL/TR/25-26/06146
	Lab Ref No.	UESPL/25-26/W/11024
	Date of Sampling	05/03/2026
	Date of Receipt	06/03/2026
	Date of Report	10/03/2026
	Date of Analysis	Start: 06/03/2026 End: 10/03/2026

SAMPLE DETAILS	
Sample Type	Effluent water
Customer Ref. No. & Date	8200006833, Dated: 22.07.2025
Customer Sample ID	CT Blow Down
Sample Condition at Receipt	Ok (Sealed)
Packing of Sample	4 L X 1 No. Plastic Bottle, 1 L X 1 No. Glass Bottle
Sample Collected By	Laboratory Chemist
Quantity Received	5 Ltr

TEST REPORT

Sr. No.	PARAMETER	UNIT	METHOD OF TEST	Limits as per MOEF Notification	RESULTS
1	Free Available Chlorine	mg/L	APHA 24th Ed. 2023, 4500-Cl-B, 340	0.3	0.2
2	Zinc (as Zn)	mg/L	IS:3025(Part-49):1994 RA 2019	1.0	N.D.
3	Chromium (as Cr)	mg/L	IS:3025(Part-52):2003 RA 2019	0.2	N.D.
4	Phosphate as PO_4	mg/L	IS:3025:(Part-31):1988, RA 2022	5.0	N.D.
5	Other Corrosion inhibiting material	mg/L	--	--	N.D.

Note: mg/lit.: milligram per liter, N.D. – Not Detected.

REMARKS: RESULTS ARE AS ABOVE

Terms & conditions

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- *Test sample will be retained for 15 days after issue of test report unless otherwise agreed with customer.*
- *This is for information as the party has asked for above test(s) only.*

REVIEWED BY		For ULTIMATE ENVIROLYTICAL SOLUTIONS PVT LTD AUTHORIZED SIGNATORY
10/3/26		10/03/26

-------------------------------End of the test report-------------------------------

Ultimate
ENVIROLYTICAL SOLUTIONS PVT. LTD.

LAB 1 : HDD-272, PHASE III - NEAR JP CHOWK, RING ROAD NO-2
KABIR NAGAR, RAIPUR (C.G.)-492099
LAB 2 : HIG-36 PHASE II, KABIR NAGAR, RAIPUR (C.G.)- 492099
PH- 0771-4523921 /Email - uespllab@gmail.com

Name & Address Of The Customer	Report No.	UESPL/TR/25-26/06147	
To,	Lab Ref No.	UESPL/25-26/W/11025	
M/s DB Power Limited	Date of Sampling	05/03/2026	
Village- Badadhara	Date of Receipt	06/03/2026	
Dist.-Sakti (C.G) 495695	Date of Report	10/03/2026	
	Date of Analysis	Start: 06/03/2026	End: 10/03/2026

SAMPLE DETAILS	
Sample Type	Effluent water
Customer Ref. No. & Date	8200006833, Dated: 22.07.2025
Customer Sample ID	Condenser Cooling Water
Sample Condition at Receipt	Ok (Sealed)
Packing of Sample	3 L X 1 No. PVC Can 1 L X 1 No. PVC Can 1 L X 1 No. Glass Bottle
Sample Collected By	Laboratory Chemist
Quantity Received	5 Ltr

TEST REPORT

Sr. No.	PARAMETER	UNIT	METHOD OF TEST	Limits as per Consent	RESULTS
1	pH	-	IS:3025:(Part-11):2022	6.5 to 8.5	7.42
2	Temperature	°C	IS:3025:(Part-9):1983, RA 2002	Not More than 5°C higher than the intake water temperature	25.3
3	Total Suspended Solids (TSS)	mg/L	IS:3025:(Part-17):2022	100	34.8
4	Oil & Grease	mg/L	IS:3025:(Part-39):2021	10.0	N.D.
5	Chemical Oxygen Demand	mg/L	IS:3025:(Part-58):2023	250	100
6	Bio-chemical Oxygen Demand at 27°C for three day	mg/L	IS:3025:(Part-44):2023	30	18.1
7	Phosphate as PO_4	mg/L	IS:3025:(Part-31):1988, RA 2022	5.0	N.D.
8	Free Available Chlorine	mg/L	APHA 24th Ed. 2023, 4500-Cl-B, 340	0.3	0.3

Note: mg/lit.: milligram per liter, N.D. – Not Detected.

REMARKS: RESULTS ARE AS ABOVE

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- *This is for information as the party has asked for above test(s) only.*

		For ULTIMATE ENVIROLYTICAL SOLUTIONS PVT LTD
10/3/26 **REVIEWED BY**		10/03/26 **AUTHORIZED SIGNATORY**

End of the test report

Ultimate
ENVIROLYTICAL SOLUTIONS PVT. LTD.

LAB 1 : HDD-272, PHASE III - NEAR JP CHOWK, RING ROAD NO-2
KABIR NAGAR, RAIPUR (C.G.)-492099
LAB 2 : HIG-36 PHASE II, KABIR NAGAR, RAIPUR (C.G.)- 492099
PH- 0771-4523921 /Email - uespllab@gmail.com

Name & Address of the Customer	Report No.	UESPL/TR/25-26/06157	
To,	Lab Ref No.	UESPL/25-26/ST/11037	
M/s DB Power Limited	Date of Sampling	25/03/2026	
Village- Badadhara	Date of Receipt	26/03/2026	
Dist. - Sakti (C.G) 495695	Date of Report	30/03/2026	
	Date of Analysis	Start: 26/03/2026	End: 30/03/2026

SAMPLE DETAILS	
Monitoring For	FGD_Absorber1 _Stack
Customer Ref. No. &Date	8200006833, Dated: 22.07.2025
Sampling Location	Unit - I
Sample Collected By	Laboratory Chemist
Sampling Procedure	IS 11255 Part 1,2:1985 Reaffirmed 2009; Part 3:2008, Part 7:2005 Reaffirmed 2012, IS 5182 (Part 10) :2003
Sample Quantity/Packing	Thimble: 1 X 1 No., SO_2: 30 ml X 1 No. PVC Bottle, NO_x: 25 ml X 1 No. PVC Bottle, Rubber Bladder: 1 X 1 No., Hg: 500ml X 1 No. Glass Bottle & 500ml X 3 No.PVC Bottle.

TEST REPORT

Stack details	
Stack Identity	UNIT -I
Stack Attached To	ESP-BOILER
Material of Construction	MS / RCC
Stack Height Above Ground Level (Mtr.)	120
Stack Diameter (Mtr.)	7.5
Stack Shape at Top	CIRCULAR
Type of Fuel	COAL

Parameter	Unit	Result	Method Reference
H_2S	mg/Nm^3	N.D.	IS 11255 Part – 04
HCL	mg/Nm^3	N.D.	UESPL/25-26/SAP/SEM/HCL – 01
HF	mg/Nm^3	N.D.	IS 11255 Part – 05
Methane	ppm	N.D.	EPA Method 25A
Ethane	ppm	N.D.	EPA Method 25A
Propane	ppm	N.D.	EPA Method 25A
Butane	ppm	N.D.	EPA Method 25A
Pentane	ppm	N.D.	EPA Method 25A
CN	mg/Nm^3	N.D.	EPA Method 25A
NH_3	mg/Nm^3	N.D.	IS 11255 Part - 06

REMARKS: Results Are as Above

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		For ULTIMATE ENVIROLYTICAL SOLUTIONS PVT LTD
30/3/26		30/03/26
REVIEWED BY		AUTHORIZED SIGNATORY

---------------------------------End of the test report---------------------------------

Ultimate
ENVIROLYTICAL SOLUTIONS PVT. LTD.

LAB 1 : HDD-272, PHASE III - NEAR JP CHOWK, RING ROAD NO-2 KABIR NAGAR, RAIPUR (C.G.)-492099

LAB 2 : HIG-36 PHASE II, KABIR NAGAR, RAIPUR (C.G.)- 492099

PH- 0771-4523921 /Email - uespllab@gmail.com

Name & Address of The Customer	Report No.	UESPL/TR/25-26/6158	
To,	Lab Ref No.	UESPL/25-26/ST/11038	
M/s DB Power Limited	Date of Sampling	25/03/2026	
Village- Badadhara	Date of Receipt	26/03/2026	
Dist. - Sakti (C.G) 495695	Date of Report	30/03/2026	
	Date of Analysis	Start: 26/03/2026	End: 30/03/2026

SAMPLE DETAILS	
Monitoring For	FGD_ Stack
Customer Ref. No. &Date	8200006833, Dated: 22.07.2025
Sampling Location	Unit - II
Sample Collected By	Laboratory Chemist
Sampling Procedure	IS 11255 Part 1,2:1985 Reaffirmed 2009; Part 3:2008, Part 7:2005 Reaffirmed 2012, IS 5182 (Part 10) :2003
Sample Quantity/Packing	Thimble: 1 X 1 No., SO_2: 30 ml X 1 No. PVC Bottle, NO_x: 25 ml X 1 No. PVC Bottle, Rubber Bladder: 1 X 1 No., Hg: 500ml X 1 No. Glass Bottle & 500ml X 3 No. PVC Bottle.

TEST REPORT

Stack details			
Stack Identity	UNIT -II		
Stack Attached To	ESP-BOILER		
Material of Construction	MS / RCC		
Stack Height Above Ground Level (Mtr.)	275		
Stack Diameter (Mtr.)	7.5		
Stack Shape at Top	CIRCULAR		
Type of Fuel	COAL		
Parameter	**Unit**	**Result**	**Method Reference**
H_2S	mg/Nm^3	N.D.	IS 11255 Part – 04
HCL	mg/Nm^3	N.D.	UESPL/25-26/SAP/SEM/HCL – 01
HF	mg/Nm^3	N.D.	IS 11255 Part – 05
Methane	ppm	N.D.	EPA Method 25A
Ethane	ppm	N.D.	EPA Method 25A
Propane	ppm	N.D.	EPA Method 25A
Butane	ppm	N.D.	EPA Method 25A
Pentane	ppm	N.D.	EPA Method 25A
CN	mg/Nm^3	N.D.	EPA Method 25A
NH_3	mg/Nm^3	N.D.	IS 11255 Part - 06

REMARKS: Results Are as Above

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30/3/26 REVIEWED BY		For ULTIMATE ENVIROLYTICAL SOLUTIONS PVT LTD 30/03/26. AUTHORIZED SIGNATORY

------------End of the test report------------

HYDROGEOLOGICAL INVESTIGATION REPORT

OF M/S DB POWER LIMITED

BADADARHA VILLAGE, BLOCK- DABHRA

DISTRICT–SHAKTI, CHHATTISGARH-495695

(Year - 2025-26)

PREPARED BY

ENVIBA ENVIRONMENTAL SERVICES

EE-05, INDRAPRASTHA COLONY, RAIPURA,
RAIPUR, CHHATTISGARH

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ENVIRONMENTAL SERVICES RAIPUR ENVIBA

CONTENTS

INTRODUCTION

DB Power Limited is a coal-based thermal power plant located at Village: Badadarha, Block: Dabhra, Shakti district in the state of Chhattisgarh. The plant has produced thermal power having capacity of 1200 MW (2*600 MW). Ministry of Coal, Govt. of India has allocated permanent Coal linkage of 2,497 MTPA from SECL Chaal, Baroud, Dipika, Gevra, kusmunda and Manikpur mines area and from MCL Vasundhara & Kukldа mines to fulfill the requirement for 1200 MW capacity. Water requirement for the project is getting fulfilled from river Mahanadi, which is flowing at a distance of 23 KM from the plant site. The power plant is operating since 2014. The Project was awarded to BHEL for BTG and L & T for BOP and completed the project within time frame.

1.1 OBJECTIVE AND SCOPE OF WORK

1.1.1 Objective and Scope

The broad objective of the present study is to establish the hydrogeological environment of the project area and study the impact on ground water and suggest strategies for mitigation.

The scope of work includes following points

1. Conducting comprehensive hydrogeological studies, chemical analysis of ground and surface water samples from the buffer zone of 05 km radius and particularly downstream side of ash dyke and its impact on the water regime for DBPL, 2 X 600 MW, at Badadarha, Block- Dabhra, District- Shakti, DB Power Limited.
2. Survey and hydrological data collection of key wells of 05 km radius are from the boundary of plant (buffer zone) of existing open wells/bore wells/piezometers and determine and record for each location including extermination of coordinates of the points by GPS and its plotting on map and water levels, pre & post monsoon levels. Yields, use, aquifer tapped etc.
3. Comprehensive hydrogeological assessment studies of the buffer zone discussing its geomorphology, digitized elevation model, geology, nature of water bearing formation sand depth to water table, long term ground water recharge, present ground water exploitation and present status of ground water development.
4. Collection of samples of ground water and few surface samples from the buffer zone for chemical analysis which parameters comprising pH, Color, EC, TDS, Chloride, Sulphate, Calcium, Magnesium, Fluoride, Nitrate, Bicarbonate, Carbonate, Total

Hardness, Total alkalinity and all the heavy and toxic elements including Hg.

5. Preparation of ground water quality report of 05 km radius area of buffer zone based the results of chemical analysis and its different maps showing the different contour maps on important constituents.
6. Hydrological and drainage studies of buffer zone, delineation of its catchment area, catchment yields, particularly of watershed covering the ash dyke.
7. Preparation of ground water contour map of 5 km radius area showing the Ground water flow direction and hydraulic gradient.
8. Submission of draft report covering the findings of the investigations, original data and recommendations for future monitoring.
9. Submission of final report after incorporation of user observations.

1.1.2 Approach and Methodology

To fulfill the above objectives, especially Hydrogeological study in the area, following approach has been adapted as given below:

A detailed Hydrogeological investigation was carried out in & around Plant within 05 km of radius for both Core & Buffer Zone for evaluating the impact of project activity on ground water storage in the area.

Collection and collation of supplementary data viz. soils, geology, geomorphology, drainage etc. for interpretation.

Establishment of observation stations for water level measurements in different seasons as well as water sample collection for determining the quality aspects.

Pumping test data & its interpretation for knowing the hydrogeological parameters, etc.

Evaluation of present ground water scenario as well as future course of action for protecting the natural environment.

2. GENERAL DESCRIPTION OF THE AREA

2.1 LOCATION

M/S DB Power Limited is a 1200 MW (2 X 600 MW) thermal power plant at Village: Badadarha, Taluka:Dabhra, Dist:. Shakti, Chhattisgarh.

The co-ordinates of the Plant are 21°55’33.38”N - 21°54’14.08”N latitudes and 83°11’5214”E to 83°10’45.12”E longitudes. For the present study, an area of 05 km of radius has been demarcated which lies between 21°57’10.40”N - 21°57’47.54”N latitudes and 83°14’15.58”Eto83°08’26.19”E longitudes and falls under the Survey of India Toposheet No. 64 O/1 (1:50000 scale).The location map of the project site and toposheet of study area is given in **Fig. 2.1, 2.2** and the Satellite image map of the area is given in **Fig. 2.3**.

2.2 ACCESSIBILITY

The area is well connected by metaled and un-metaled road as well as Rail networks. Kharsia Railway station, on Mumbai- Howrah Broad Gauge main line of the South-Eastern-Central Railway is situated around 13 km North- Eastern direction from plant site. Jharsuguda is nearest Airport and is about 117 km from the study area which is also approachable by road and rail. The block head quarter is Dabhra.

2.3 DEMOGRAPHY

There are 21 villages within 5 km radius of plant area. The total population as per 2011 Census is 29024 (for 05 km radius buffer zone). Scheduled Caste population of the study area (05km) is 5352 and Scheduled Tribe is 6824, Percentage of literacy is 78.08%.The workers those actually engaged in occupation are 13927. A population detail is presented in table 2.1.

Table 2.1 Population details as per census 2011

Name	No_HH	TOT_P	TOT_M	TOT_F	P_SC	P_ST	P_LIT	TOT_WORK_P
Kharsia - Raigarh								
Adajhar	164	663	314	349	15	0	74.55 %	355
Karpipali	202	712	351	361	73	21	77.71%	264
Kuarmauha	162	666	330	336	152	175	76.32 %	267
Jaimura	404	1,398	691	707	207	275	77.42 %	358
Amapali	83	318	150	168	0	109	71.94 %	91

Basnajhar	361	1,549	790	759	198	518	76.02 %	634
Basanpali	149	582	293	289	107	145	82.08 %	201
Ful Bandhiya	218	797	394	403	431	222	90.65 %	338
Pandripani	211	823	420	403	139	181	77.50 %	320
Sondka	333	1,115	557	558	251	90	82.31 %	325
Tayang	194	730	365	365	68	253	79.85 %	323
Dabhra – Shakti								
Badadarha	436	1,634	857	777	187	276	75.07 %	1,076
Dhurkot	546	2,378	1,200	1,178	1,107	137	67.80 %	1,090
Dumarpali	277	866	448	418	162	151	81.27 %	312
Kanwali	657	2,499	1,244	1,255	232	1,435	70.50 %	1,170
Khairmuda	204	916	469	447	136	95	69.11 %	423
Komi	281	1,118	572	546	137	378	70.89 %	566
Kenapali	323	1,283	664	619	595	84	78.09 %	702
Saraipali	158	456	217	239	69	157	78.16 %	176
Tundri	1,074	3,810	1,936	1,874	327	1,583	74.55 %	1,760
Jaijaipur – Jangir Champa								
Odekera	1,020	4,711	2,345	2,366	759	539	69.56 %	3,176
Total	**7457**	**29024**	**14607**	**14417**	**5352**	**6824**	**78.08%**	**13927**

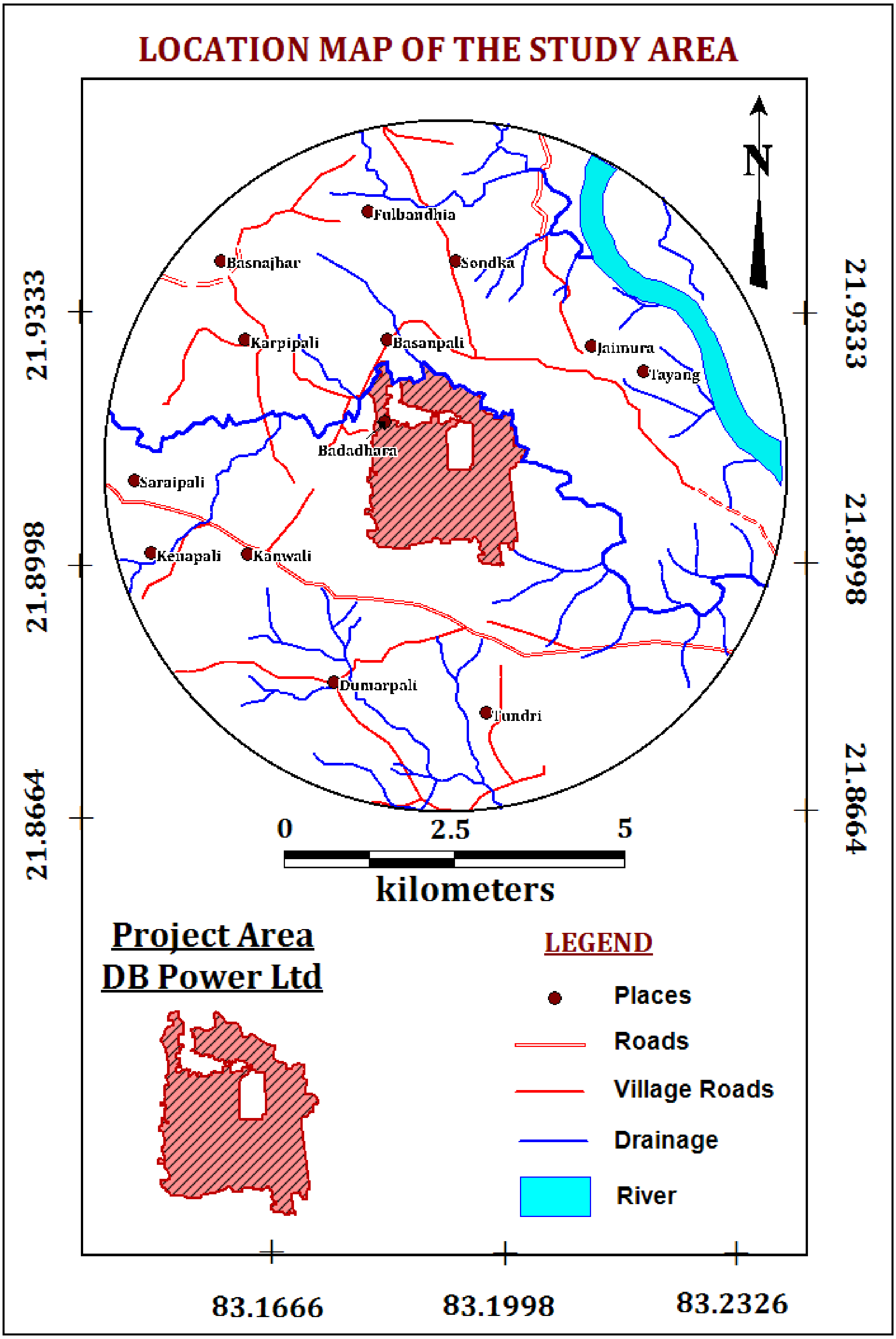


Fig 2.1: Location map the Study area

Fig 2.2: Top sheet (1:50000) of the Study area

Fig 2.3: Satellite of the Study area

Fig 2.4: Satellite Map of the Project area

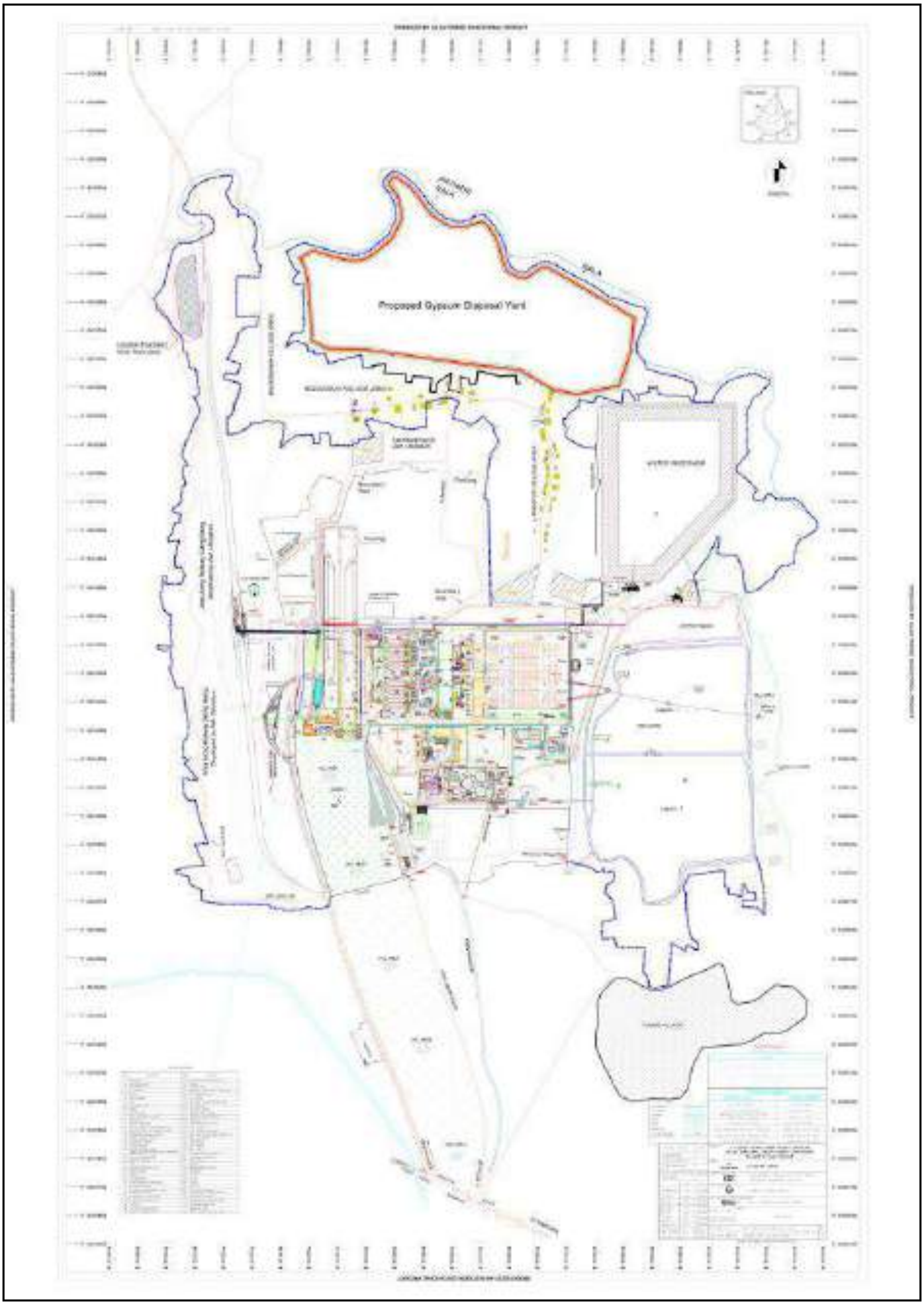


Fig 2.5: Plant Layout

2.4 LAND USE

The Land use / Land cover map for the project area has been prepared using satellite image, the current data will also enable assessing the impact on land use pattern in the study area due to the proposed project activity. Survey of India topo-sheet on 1:50000 scales has been used as a reference map for preparation of base layer data like road, rail network, village and project site and also for geo referencing of satellite image. Land use / Land cover map preparation.

Hybrid technique has been used i.e. visual interpretation and digital image processing for identification of different land use and vegetation cover classes based on spectral signature of geographic feature. Spectral signature represents various land use class. Image interpretation keys are developed based on image characteristics like color, tone, size, shape, texture, pattern, shadow, association etc, which enables interpretation of satellite images for ground feature. Training sites are then assigned based on their spectral signature and interpretation elements. Following classes have been used for the Land use. Land covers Map: Water Bodies, Plantation, Crop Land, Fallow Land, Industry, Human Settlement, Open Scrub, Vegetation, Open waste land, dense scrub & Mine Quarry. The land use/land cover details of the lease and study area are given below in **Table 2.2,** which has been presented in **Fig 2.6**.

Out of the total area taken for the study, nearly 538.79 ha is covered by forested area, only 992.91ha is covered by irrigated area, 9085.95 ha is covered by non-irrigated area. Culturable waste land area comes around 60.20 ha while 520 ha area is covered by area not available for cultivation. The details of land use pattern in the study area within 5 km radius are summarized as below in the **Table 2.2** & Fig **2.6.**

Table 2.2: Land use Pattern of the Study Area (05 km radius from the Project site)

SN	Land use	Area (in Sq KM)	Percentage
1	Agricultural Land-Crop Land-Kharif Crop	90.8595	73.06
2	Agricultural Land-Crop Land-Zaid Crop	3.80495	3.06
3	Agricultural Land-Crop Land-Two crop area	9.92907	7.98
4	Agricultural Land-Fallow-Current Fallow	0.60202	0.48
5	Forest-Deciduous (Dry/Moist/Thorn)-Dense/Closed	5.38796	4.33
6	Wastelands-Scrub land-Open scrub	5.20509	4.19
7	Wastelands-Sandy area-Riverine	1.53606	1.24
8	Build Up-Mining / Industrial area	1.69411	1.36

9	Build Up-Built Up (rural)-Built Up Area (Rural)	2.67511	2.15
10	Build Up-Built Up (Urban)-Transportation	0.140471	0.11
11	Waterbodies-Reservoir/Tanks- Perennial	2.52319	2.03
	Total	124.357531	100

Source: Satellite Imagery

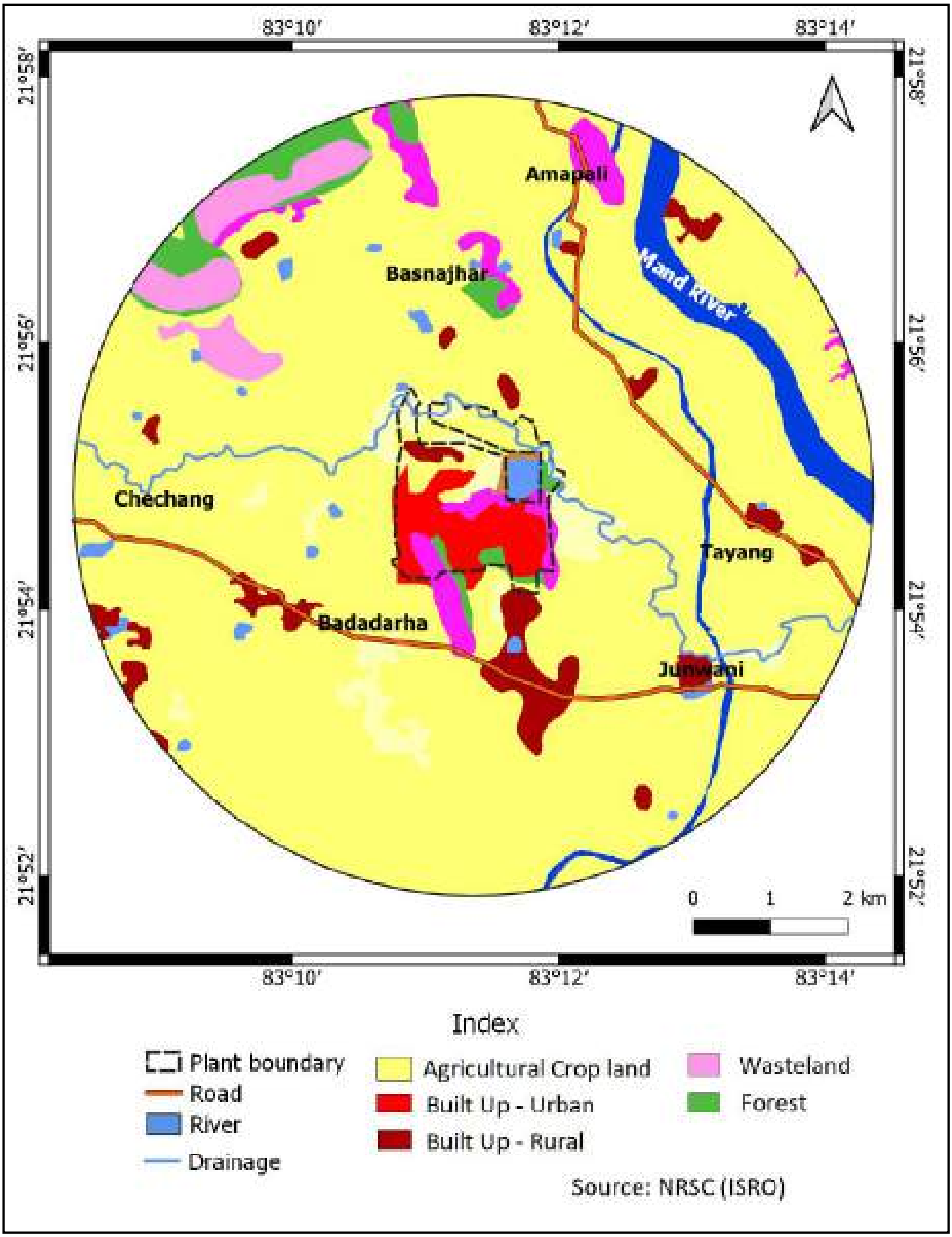


Fig 2.6: Land use map the Study area

2.5 CROPPING PATTERNOF THESTUDYAREA

The study area represents agricultural plain and Green fields and lot of agricultural activities in the surroundings of villages are noticed. Base line data collected from Agriculture Department, Raipur and observed that majority of the area around the 05 Km. radius from the project site is distributed with following crops:

Kharif Crops: - Peddy, Cotton, Wheat, Maize, Jowar, Moong, Sunflower, Soyabean, Groundnut.

Rabi Crops- Gram Wheat, Jow, Tarameera, Sarson, Bhindi, Channa, Pea, Tomato, Palak, Raddish.

Cropping pattern of the area depends upon the climatological conditions and need of the local population of the area. Sometimes cropping pattern may get changed during construction and operational phase because of particular requirement of specified anthropogenic activities.

The study area shows typical agro climatic conditions. In spite of the agriculture being depend mainly on monsoon and underground water, cultivation is the major occupation of this region. The land is mono culture in nature besides the above- mentioned crops, banana, papaya, bar, ginger, methi, tomato, carrots, soya beans etc. are also grown in the area. The growth season of major crops are as shown in table 2.3 given below:-

Table 2.3: Growth seasons of major crops

S.NO.	NAMEOFCROP	PLANTATION MONTH	HARVEST SEASON
1.	PEDDY	JUNE-JULY	OCTOBER
2.	WHEAT	JAN.	MAY
3.	JOWAR	JULY	OCT. -NOV.
4.	COTTON	APRIL	JULY-AUGUST

Most of the crops are grown on small farms (located near the village wells) where generally the work is done manually. A very little mechanized (with tractor) cultivation is also seen at times in certain areas.

2.6 CLIMATE AND SOILS

2.6.1 Climate:

The area enjoys tropical climate with hot summer followed by well-distributed rainfall through South-West monsoon season. The winter commences from December and last till the end of February. The period from March to the end of May is hot season. The monsoon season starts from the middle of June and last till the end of September. The average daily annual normal temperature for the area is 32° C. During the summer Season humidity is lowest i.e. about 32% and is highest during the South-West Monsoon period i.e. about 80%.. About 94 percent of the annual rainfall is received during the period June to October, July and August being the rainiest months. The variation in annual rain fall from year to year is very large on an average the reared 50- 60 rainy days in a year**.** There is only one observatory located in Raipur which is about 240 km away from the study area maintained by Indian Meteorology Department.

2.6.2 Rainfall

During the Year 2014 to 2025 the maximum rainfall recorded 1609.07 mm in the year 2025 and minimum rainfall 1076.8 mm had been recorded in the year 2021. Details are as shown in **Table 2.4**. In this year very low rainfall recorder, although ground water of this area falls under safe zone as well as forest is very dense, but precipitation was comparably too less. The average rainfall for last twelve year is average 1469.6 mm. Out of the total annual rainfall about 90% of the takes place during the South West Monsoon i.e. among the months June to September. Only 8% of the rainfall takes place during the Winter Season from October to February while only 2% of the rainfall takes place during summer Season.

Table 2.4: Annual Rain Fall (2014-2025)

Sl No	Year	Rain fall (in MM)
1	2014	1444.6
2	2015	1436.8
3	2016	1480.0
4	2017	1390.0
5	2018	1196
6	2019	1483
7	2020	1602
8	2021	1076.8
9	2022	1205.7
10	2023	1378.8
11	2024	1205.4
12	2025	1609.07
Average		1469.6

2.7 SOILS

Only one soil categories are present in the study area namely Ultisols, (red & yellow Soils) Soil map of the study area is presented in **Fig 2.7**.

i. 2.7.1: Ultisols

The Indian equivalent of this soil found in study area is Lateritic and red yellow soil. It is exposed in all parts in the area. It is the ultimate product of continuous weathering of minerals in a humid climate. This is a highly weathered and leached acid soil with high levels of clay below top layer. They are characterized by a humus-rich surface horizon and by a layer of clay that has migrated below the surface horizon. This soil has variety of clay minerals but in many cases the dominant mineral is Kaolinite. This clay has good bearing capacity and no shrink-swell property. They are red to yellow in color and are quite acidic having pH less than 5. The red and yellow color results from the accumulation of iron oxide which is highly insoluble in water.

Alluvial Soils are found along the river course.

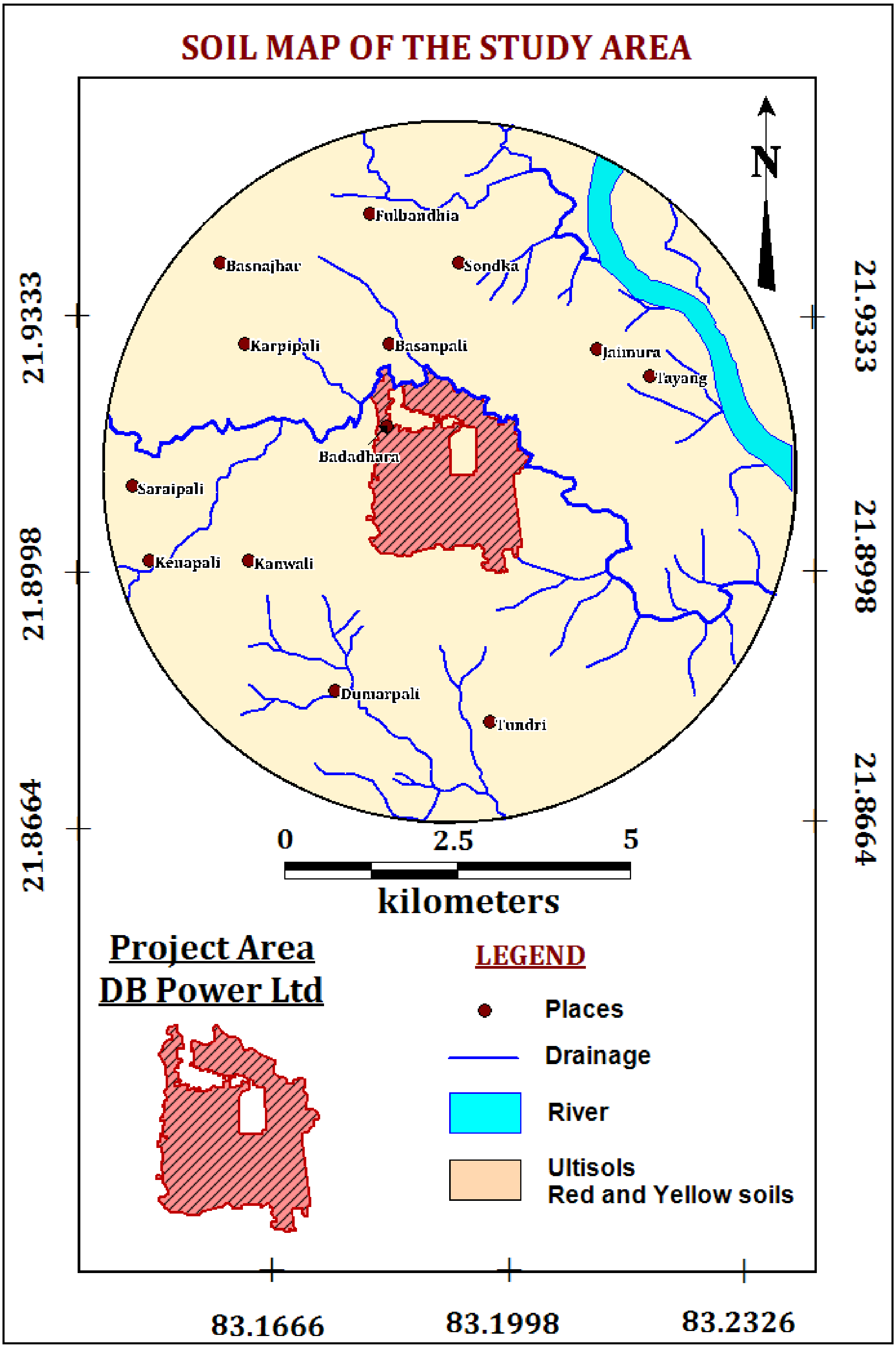


Fig 2.7: Soil map of the Study area

2.8 .DRAINAGE AND GEOMORPHOLOGY

2.8.1 Drainage

The area is drained by tributaries of Mand River. Mand River is flows from North to South-East Direction of project area. Thus the project area is in the interfluves zone of Dantar Nala, Pathari Nala & Mand River. The Mand River is a tributary of the Mahanadi in India. It joins the Mahanadi in Chandarpur, in Chhattisgarh, 28 km from the Odisha border and before the river reaches the Hirakud Dam. This tributary system comes under Mahanadi basin. The drainage pattern in the area is sub-parallel and dendritic in nature with medium drainage density indicating the formations in the area are moderately porous& permeable in nature and are having moderate surface run-off. The drainage density in the central part near to project area is low as compare to remaining area. The drainage map of the study area is presented in **Fig 2.8**.

The study area is characterized by flat undulating terrain with regional slope to the north-east. The average elevation in the southern portion is around 270 m while in the central parts is 310 m amsl. The average land slope of the area is works out about 4m per km from top sheets (1:50000 scale), Survey of India.

Drainage network are universal feature of landscape on the earth. Various environmental factors such as climate, relief, lithology, and vegetation play a considerable role in the development of drainage basin. Watershed geomorphology helps in understanding the physical and hydrological behavior of the river regime.

2.8.2 Geomorphology:

Geo-morphologically the study area comes under Pediplain, Denudation Hills & Floods Plan. The Physiography of the basin is controlled by geological formations namely Sandstone and shale.

The rocks were exposed to renewed post depositional activities and were subjected to intensive and extensive sedimentation, peneplanation and denudation during Pre-Quaternary and Quaternary time. In response to lithology of rocks, the alchemical composition, the irrelative deposition, tectonic setup, they were chiseled into various geomorphic and hydro-geomorphic surfaces; in this case Pediplain and Denudation hills. The feature Denudation Hills are formed in the north-western part of the study area. This unit is controlled by fractures, joints and lineaments. Flood Plain is also developed along the river courses. It is formed by extensive deposition of alluvium by major river system. This unit is normally flat/gently undulating land surface and located along river courses. The elevation of the study area is 210-225 m amsl. Generally the slope is towards the eastern side of the study area.

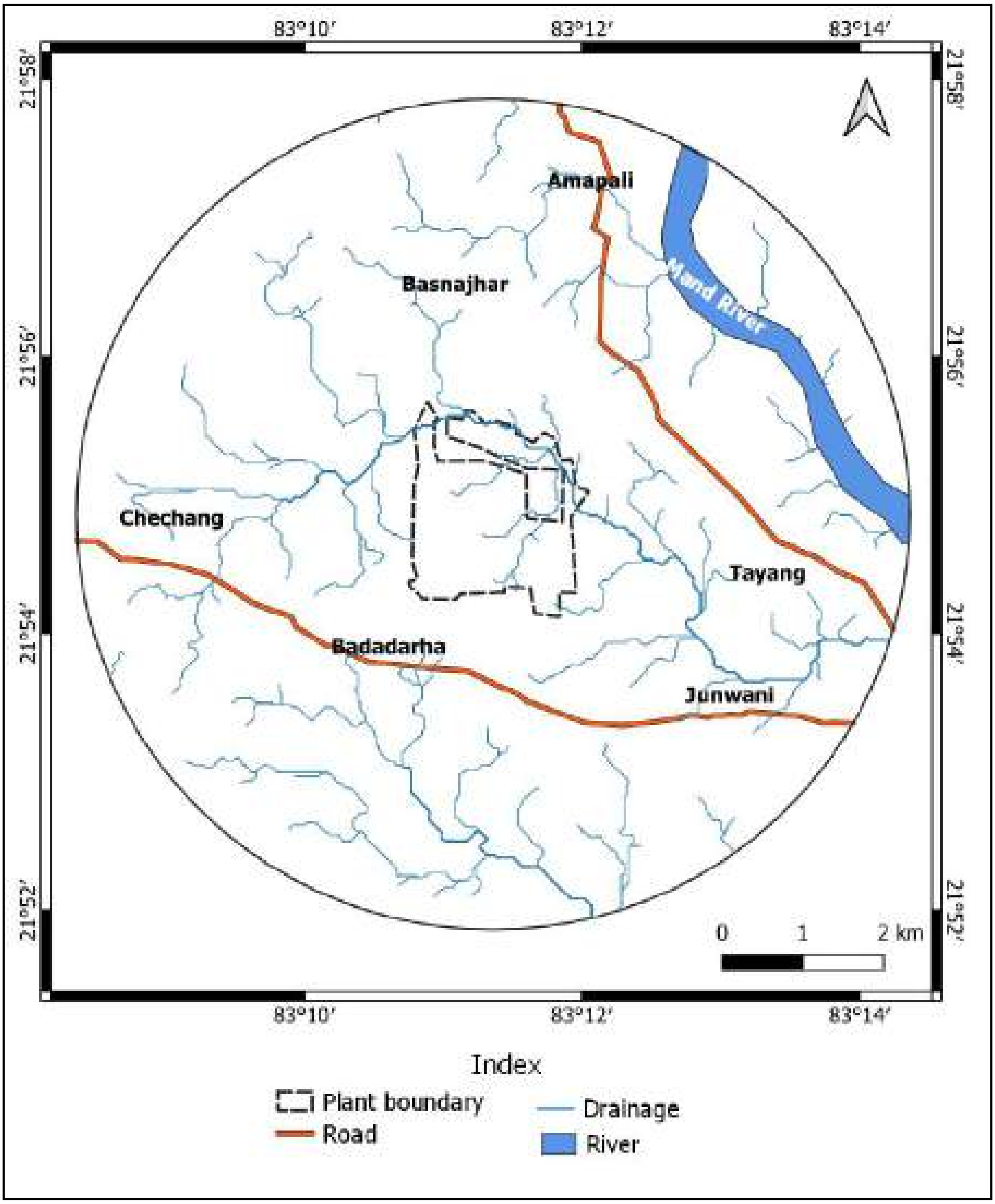


Fig 2.8: Drainage map of the Study area

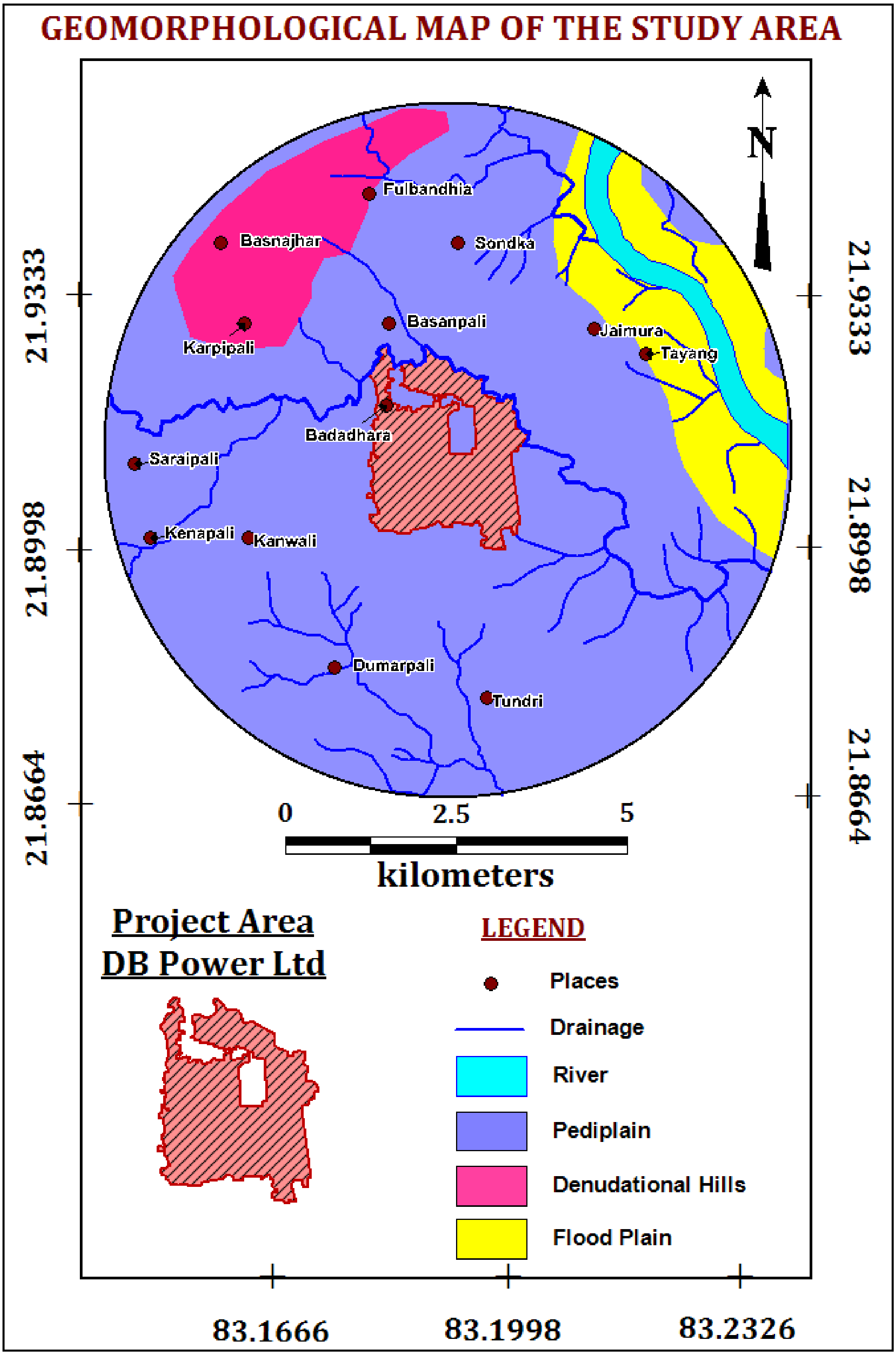


Fig 2.9: Geomorphological map the Study area

3. GEOLOGY

The rocks of the Chhattisgarh super group represented by limestone, Sandstone and shale. A thin layer of alluvium/ laterite belonging to Quaternary period is found on the top surface**.** The generalized stratigraphic sequence of formation in and around the area is given in **Table 3.1** below.

Table-3.1 Generalized stratigraphic sequence of Janjgir-Champa District

Age	Supergroup	Group	Formation	Lithology
QUATERNARY	Recent to sub-recent		Alluvium and Laterite	Sand, Silt, Clay and lateritic Soil
PROTEROZOIC	Chhattisgarh Supergroup	Raipur Group	Maniyarifm	Gypsiferous Shale
			Hirrifm	Dolomitic limestone
			Tarengafm	Shale & Dolomite
			Chandifm	Limestone & Shale
			Gunderdehifm	Shale
			Raigarh	**Shale,Limest.,Sandstone & Conglomerate**
			Charmuriafm	Limestone & Shale
		Chandrapur Group	Kanspatharfm	Sandstone, Siltstone Shale &Conglomerate
			Choparadihfm	
			Lohardifm	
		Bilari group Sonakhan gr Baya group	Intrusive, lakhadabri, Jonk&Chikhali	Quartz veins, basic dyke, Meta basalt Schist & Gneisses
ARCHAEAN	Basement crystallines- Granite, gneisses ,granulite and Amphibolite			

ii. **3.1.1 Basement Crystalline:**

The basement crystallines belongs to Archaean age mainly consists of Granite, gneisses, granulite, phyllites and amphibolites. At places it is intruded by quartz veins. The overlying sedimentaries belongs to Chhattisgarh Super group of rocks. The contact between the Achaeans and the sedimentaries is faulted along the western margin of the basin.

iii. **3.1.2 Chhattisgarh Super group:**

The crescent shaped Chhattisgarh basin within the Central Indian Craton can be subdivided into a small Baradwarproto-basin in the east and main Hirriproto -basin in the west. The entire succession of Chhattisgarh super group is divided into three groups. Lowermost Pairi group consists of sandstone, conglomerate, limestone and shale overlies unconformably on crystalline group and developed in the Baradwarproto-basin. The middle Chandrapur group un- conformably overlying the Singhora group or older basement and consists of arenite formations and third is Raipur group at the top, comprising argillite-carbonate suite of rock.

iv. **3.1.2.1 Chandrapur group:**

The sequence of Chandrapur group shows a variable thickness ranging from 20 m to as much as 90 m. The maximum thickness is attained in SE part of the basin, thinning westward as well as NE side and directly overlying the crystalline basement.

v. **3.1.2.2 Raipur group:**

The Raipur group comprising of predominantly argillite sequence conformably overlies the Chandrapur group with a gradational contact. The group has been subdivided into six sub-division representing three cycles of carbonate-argillite sediments as follows

Charmuria formation- dominantly carbonate sequence and is conformably overlain by Gunderdehi formation.

Gunderdehi formation- dominantly a calcareous argillite purple coloured shale with intercalated limestone is dominant member.

Chandi formation- comprise a major stromatolytic limestone sequence developed around southern side of Hirri sub-basin as arcuate outcrop pattern and is medium to course grained dolomitic limestone.

Tarenga formation- conformably overlies the Chandi formation and comprise cherty shale, calcareous shale and argillaceous dolomite, green and white clay.

Hirri formation- conformably overlies the Tarenga formation in south and Pandaria formation(coalesce of Charmuria, Gunderdehi, Chandi and tarenga formation) in the north. At places intra-formational conglomerate, dolomite and black shale contained gypsum as layer parallel to bedding.

Maniyari formation- named after the river along which the rock is best developed. It represents the closing phase of deposition in Chhattisgarh basin and consists of lower gypsiferous grey siltstone and shale followed by reddish brown calcareous and non-calcareous shale with limestone and dolomite.

vi. Recent to sub-recent:

3.1.3.1 Laterite:

Insitu and rolled laterite occurs at many places in isolated patches. These are blanket deposits and few centimeters to few meters in thickness. The ferruginous rock formations of Chhattisgarh Supergroup are responsible for the formation of thin capping of laterite due to leaching and concentration of iron oxide from sandstone of Chandrapur group and also of shale of Raipur group.

3.1.3.2 Alluvium:

The alluvium consists of sand, silt and clay. The sands are fine to coarse grained and poorly sorted. The alluvial soils are mostly of residual in nature and are the weathered products of shale and limestone. The thickness of soil varies from few centimeters to over 10m in places.

3.2 LOCAL GEOLOGY:

The area is underlain by thin layer alluvial/laterite belonging to Quaternary period. Thick pile of rocks belonging to Raipur group of Younger Proterozoic period consisting of shale, underlie the alluvial sediments **(Fig 3.1).** The formation have general strike in NE-SW direction with very low dips of 2°to 3° due NW. Two sets of vertical joints trending in N50°E- S50°W and NE-SW direction are prominent in the area. The gap between joint plain is large from few centimeters to 5meters and are mostly interconnected. The lithological characters of various formations present in the study area are described as follows:

3.2.1: Raigarh Formation: The formation is widely developed in Baradwar sub-basin, comprising dominantly friable calcareous purple shale with limestone intercalations. The formation can be classified into a lower shale flaggy carbonate-arenite member which is followed upward by a purple calcareous shale member. Unlike Hirri sub-basin, the bedded flaggy limestone gradually changes in its outcrop width and further east it pinches out occurring as pockets and lenses in the purple shale above the Chandarpur arenite. At places, arenite lenses and bands are also present in the member. The upper member is mainly purple calcareous shale with limestone as well as arenite lenses. Mud cracks and ripple marks are the common structures. One of the mappablearenite members is Dhurkotarenite occurring within the shale and comprises conglomerates and sandstone. Conglomerate consists of clasts of quartz, shale, jasper and chert embedded in siliceous matrix. This grades to a sandstone which is coarse to medium grained containing argillaceous and calcareous matrix. The dark grey dolomite in subsurface grades to light grey to cement limestone. A thin friable green sandstone unit occurs in SariaBorda area of Baramkela block. They also described presence of dolostone around Raigarh town. Some Stromatolitic limestones within this formation in Raigarh district indicate extension of Bamandih Formation upto Raigarh district. In the study area there are Six types of rock formation are found.

1. Granite Gneiss 2. Lohardih (Conglomarate) 3. Kansapathar (Sandstone)

4. Gunderdehi (Shale) 5. Talcher (Fine Grained sand stone)

6. Barakar (Sandstone with coal)

About 70% of the study area is covered by Gunderdehi Shale Formation. It covers in East, west and South part of the area.

Conglomarate/ Grit rock types found in DB Power plant and central part of the study area.

Barakar sand stone and fine grained sand stone fount in nortern part of the study area.

Kansapathar Sandstone found in North-western and South-western part on the study area.

vii. 3.2.2: Soil/Alluvium:

Along The river course is underlain by alluvial residual soil covers which are loam and sandy loam. The thickness of overburden varies from 2 to 6 m. In order to understand the geological sequence fully well in the project site geological map of study area are present in **Fig 3.1.**

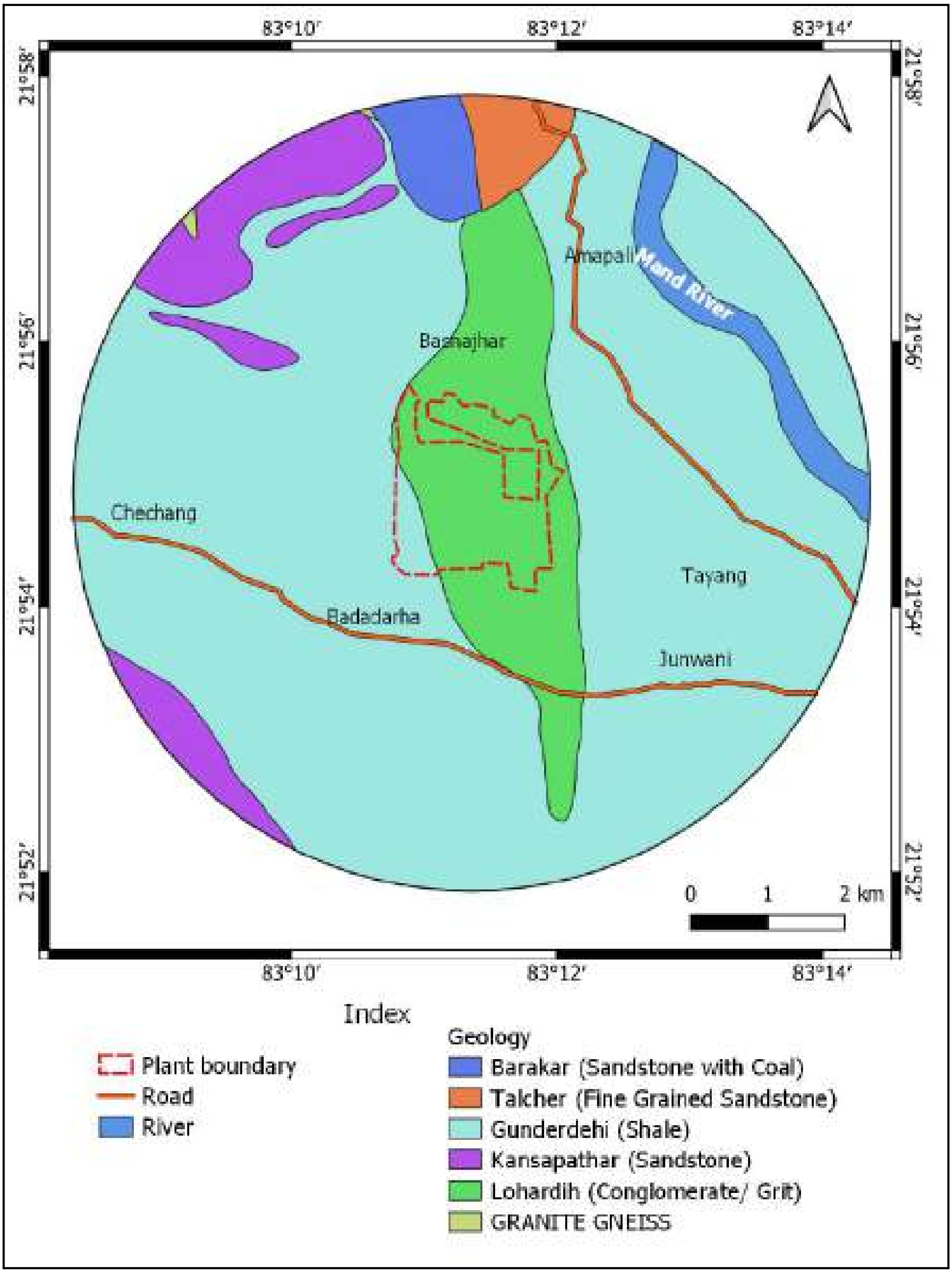


Fig 3.1: Geological map of the Study area

4. HYDROGEOLOGY

4.1 INTRODUCTION

Ground water occurrence is highly influenced by underlying geological formations and their hydro-geological characteristic. Weathered and fractured zones present in the rocks or formation provides scope of ground water occurrence, storage and its movement. Hydrogeology of the area broadly describes the disposition of aquifers, occurrence of ground water its movement, yield potential of water bearing formations, groundwater regime conditions in space and time etc. Detailed hydro-geological investigation has been carried out in and around the project area for elucidating the hydrogeology and establishing the interrelationships between various hydraulic parameters.

4.2 GROUND WATER OCCURRENCE AND AQUIFER SYSTEMS

In the study area, ground water occurs under phreatic or unconfined condition in weathered portion of rocks and semi-confined to confined conditions in fractures/cavernous part of rocks i.e. Sandstone, Conglomerate/ Grit and shale at depths. The shallow aquifers 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 low. The water 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 with depth ranges from 7 to 16 m. In general the yield of dug wells ranges from 25 to 40m^3/day. Deeper aquifer in the area mainly formed of Gunderdehi Shale, Konsapathar sandtone and Lohardih Conglomerate/grit. The deeper aquifers of the area are mostly developed by way of bore wells with depth range from 50 to 80 m. In general, the yield of bore wells ranges from 1 to 5 lps.

4.3 WATER TABLE CONFIGURATION AND FLOW DIRECTION

The flow direction is of two directions i.e. in western, South and northern part of the study area it is towards East Direction and in central and east part of the study area it is towards North-East direction indicating the surface water divide in the central portion of the study area near to project area.

The water table elevation in the study area ranges between 210 to 235 mamsl indicating more or less the plain terrain. North-Eastern part of the area is having low altitude of water table elevation i.e. 210 mamsl while water table elevation increases to western side & is maximum i.e. 235 mamsl. The gradient of water table is variable. In the area the yield ranges between 2 to 5 lps in Central, Northern, sothern indicating the area is covered by sandstone and Conglomerate/grit while in major part of the area it is 1-3 lps which is covered with shale. Contour map & Hydrogeological map is given at **Fig.4.1 and 4.2 r**espectively.

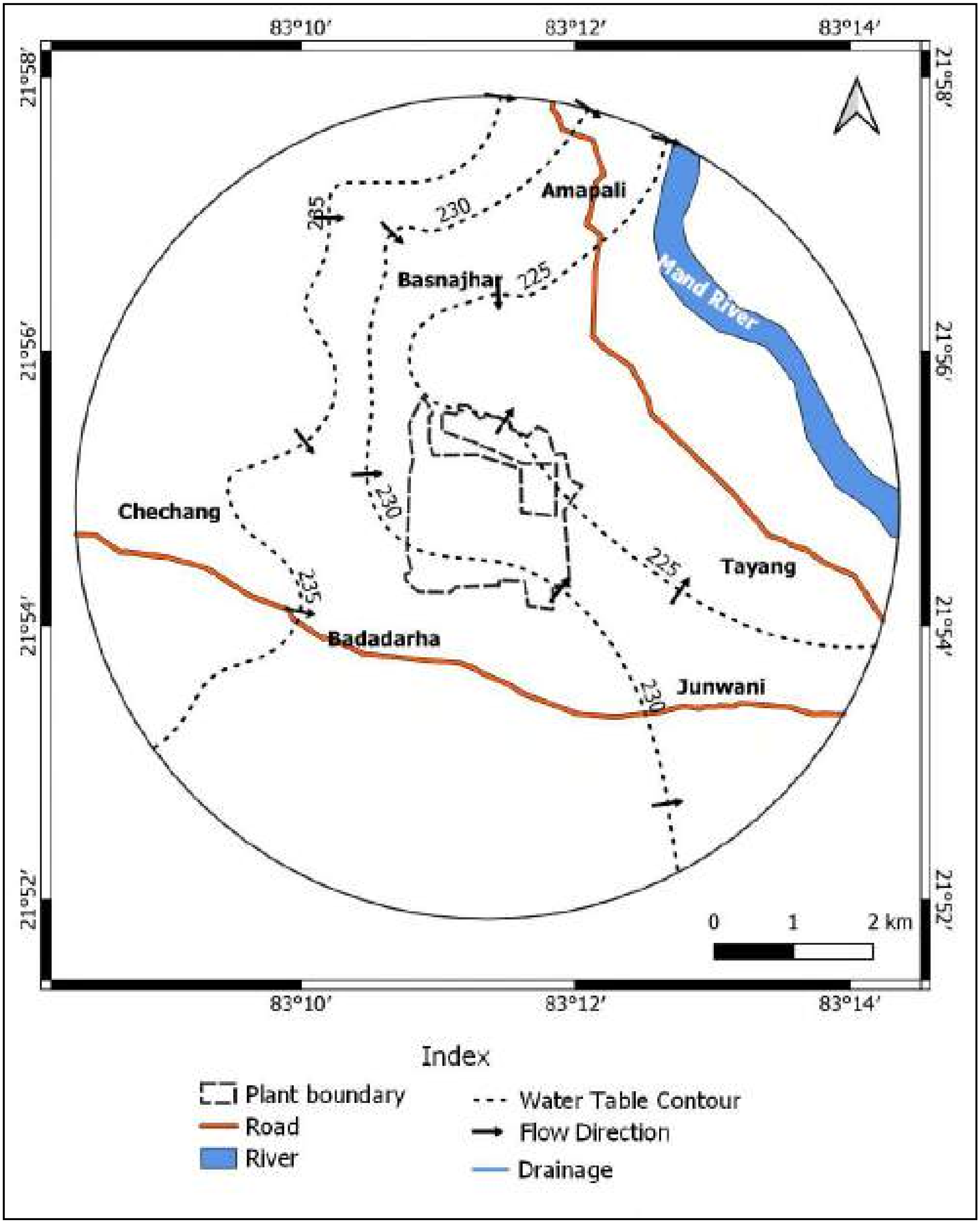


Fig 4.1 Water table contour and ground water flow direction

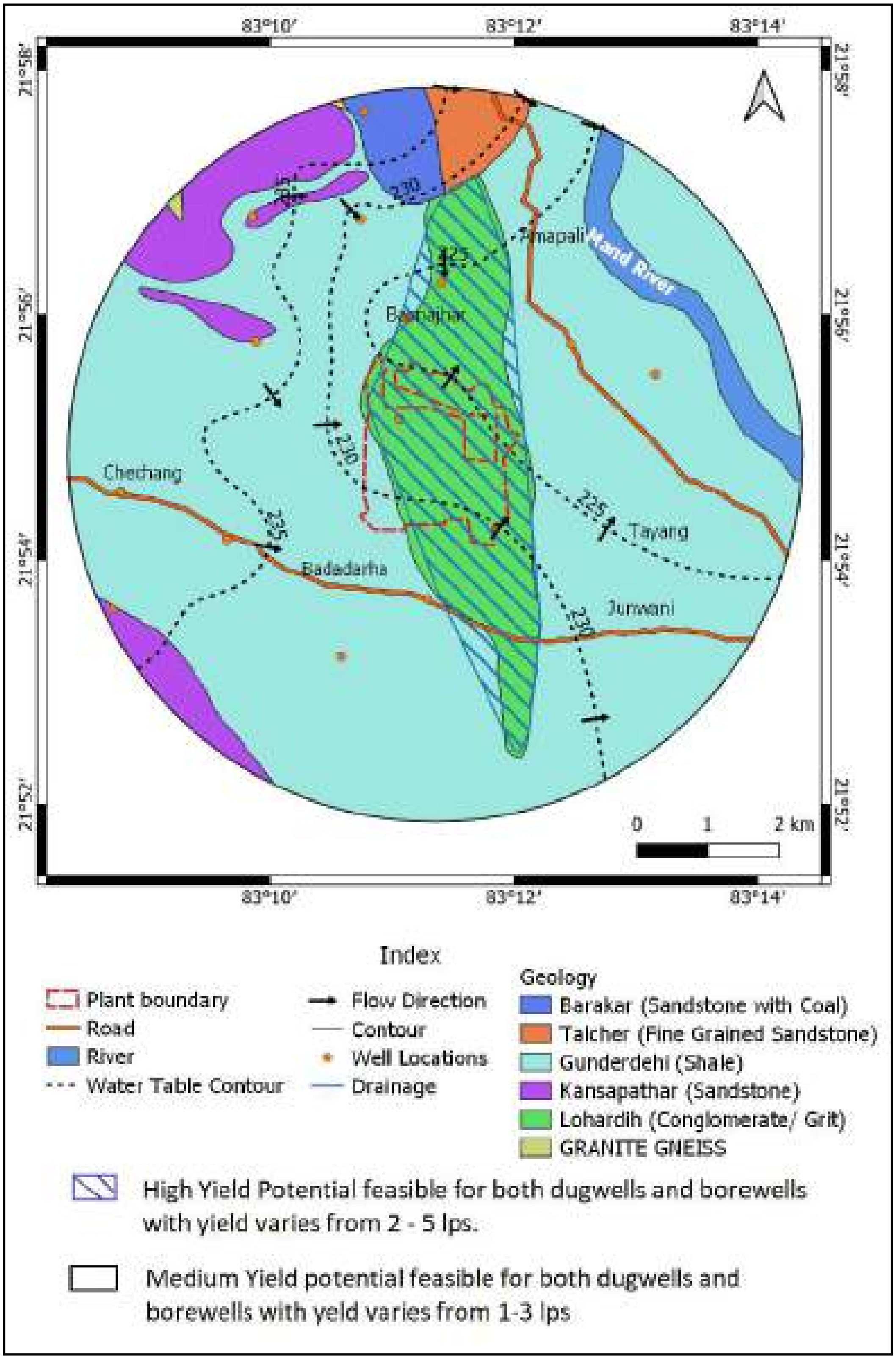


Fig 4.2: Hydrogeological Map of the Study area

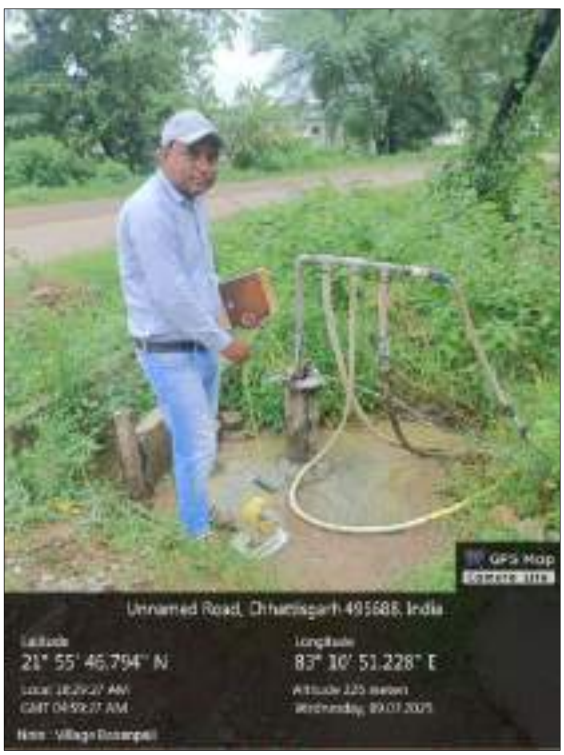
4.4 GROUND WATER REGIME MONITORING

The monitoring of ground water regime is of immense help in management of the water resources as well as protecting the ground water storage. Such study envisages regular monitoring of water level at selected locations to observe the changes in ground water level and variation in ground water quality with respect to time and space. It is pertinent to say that any development of ground water resources in a particular area would bring changes in ground water regime if input to the ground water system is not balanced with output from the same system.

The study aims to observe the changes in ground water levels and quality with respect to the ground water development, which in turn would help in identifying the appropriate measures to be adopted for artificial recharge to ground water and neutralize the impact of the excessive ground water development. In the present report, the monitored data has been presented and the overall picture of ground water regime behavior due to continuous abstraction of ground water has been analyzed for the year 2025. Ground water regime monitoring was carried out two times in a year i.e. May, and November. The water level data of the month of May and November are taken as levels of pre-monsoon and post-monsoon respectively, Data presented and analyzed for pre and post monsoon water level data. The photographs of the some monitoring stations are indicated in **plate: I**, which was taken during the collection of water level of ground water in two seasons.


GPS Map
V5PG+MJ3, Dumarpali, Chhattisgarh 495688, India
21° 53' 31.874" N
83° 10' 37.032" E

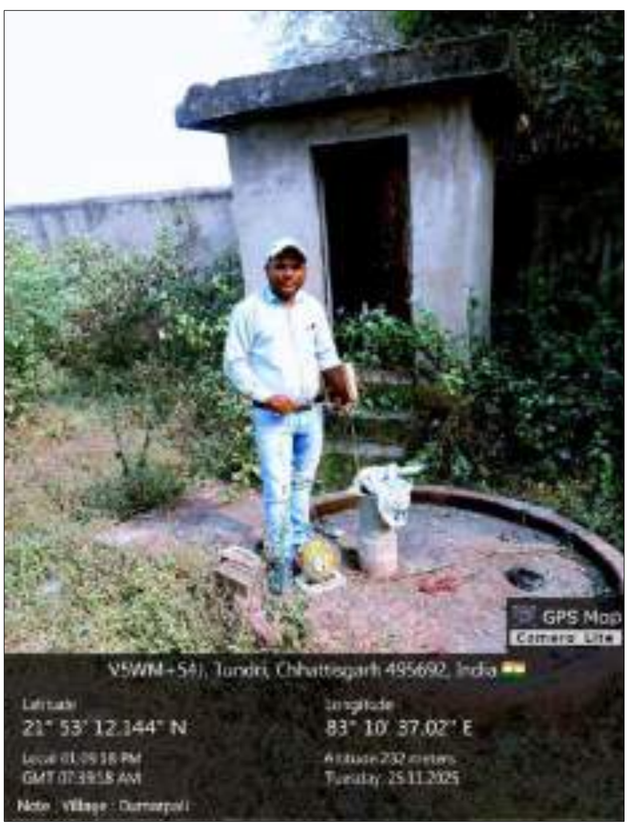

GPS Map
V5WP+F/C, Nandeli Rd, Tundri, Chhattisgarh 495688, India
Latitude
21° 53' 48.012" N
83° 11' 10.68" E
Note : Village Tundri


GPS Map
Unnamed Road, Chhattisgarh 495688, India
Longitude
21° 55' 46.794" N
83° 10' 51.228" E


GPS Map
W5H7+Q57, Karpipali, Chhattisgarh 496661, India
Latitude
21° 55' 46.734" N
Longitude
83° 9' 47.49" E


GPS Map
W59M+PP6, Nandeli Rd, Karpipali, Chhattisgarh 495692, India
Latitude
21° 55' 9.276" N
Longitude
83° 11' 3.438" E
GMT 09:32:24 AM
Note : Village :


GPS Map
V5WF+FJC, Nandeli Rd, Tundri, Chhattisgarh 495692, India
Latitude
21° 53' 47.97" N
Longitude
83° 11' 10.668" E
Note : Village : Tundri


GPS Map
Camera Lite
V5WM+54J, Tundri, Chhattisgarh 495692, India
Latitude
21° 53' 12.144" N
Longitude
83° 10' 37.02" E
Tuesday, 25.11.2025


GPS Map
Latitude
21° 54' 9.924" N
Longitude
83° 9' 39.414" E
Tuesday, 25.11.2025


GPS Map
Camera Lite
Raigarh Kharsiya Sakti Rd, Uchpinda, Chhattisgarh 495692, India
21° 53' 35.754" N
83° 8' 43.05" E
Note : Village : Kerapali


GPS Map
Camera Lite
W5J7+4Q2, Karumauha, Chhattisgarh 496661, India
Latitude
21° 55' 49.776" N
Longitude
83° 9' 52.26" E
Local 12:10:11 PM
GMT 06:40:31 AM
Altitude 230 meters
Tuesday, 25.11.2025
Note : Village : Karpipali


GPS Map
X56H+5XQ, Nandeli Rd, Kunkuni, Bhaluchuwa, Chhattisgarh 496661
India
21° 57' 39.558" N
83° 10' 46.728" E
Tuesday, 25.11.2025


GPS Map
Camera Lite
44 Gali no. 2, Basanpali, Basnajhar, Chhattisgarh 496661, India
21° 55' 57.858" N
83° 11' 3.006" E
Tuesday, 25.11.2025


GPS Map
Camera Lite
Nandeli Rd, Karpipali, Chhattisgarh 495692, India
Latitude
21° 56' 14.982" N
Longitude
83° 11' 23.97" E
Local 11:02:27 AM
GMT 05:32:27 AM
Altitude 230 meters
Tuesday, 25.11.2025
Note : Village : Jaimura


GPS Map
Camera Lite
00, Raigarh, Tayang, Chhattisgarh 496661, India
Latitude
21° 54' 28.512" N
Longitude
83° 13' 47.586" E
Local 10:30:52 AM
GMT 05:00:52 AM
Altitude 225 meters
Tuesday, 25.11.2025
Note : Village : Bayang


GPS Map
W6J5+35, Basanpali, Chhattisgarh 496661, India
Latitude
21° 55' 45.732" N
Local 10:45:06 AM
GMT 05:15:06 AM
Longitude
83° 12' 27.96" E
Altitude 227 meters
Wednesday, 09.07.2025
Note : Village Jaimura


GPS Map
X56H+5XQ, Nandeli Rd, Kunkuni, Bhaluchuwa, Chhattisgarh 496661, India
Latitude
21° 57' 39.54" N
Local 11:23:11 AM
GMT 05:53:11 AM
Longitude
83° 10' 46.794" E
Altitude 238 meters
Wednesday, 09.07.2025
Note : Village Amapali

4.4.1 Distribution of monitoring stations

To study the change in ground water regime in and around study area, total of 14 monitoring wells were established at different locations for regular monitoring of ground water level. The basic details of these monitoring wells are presented in **Table 4.1** and their distribution is presented in **Fig 4.3.**

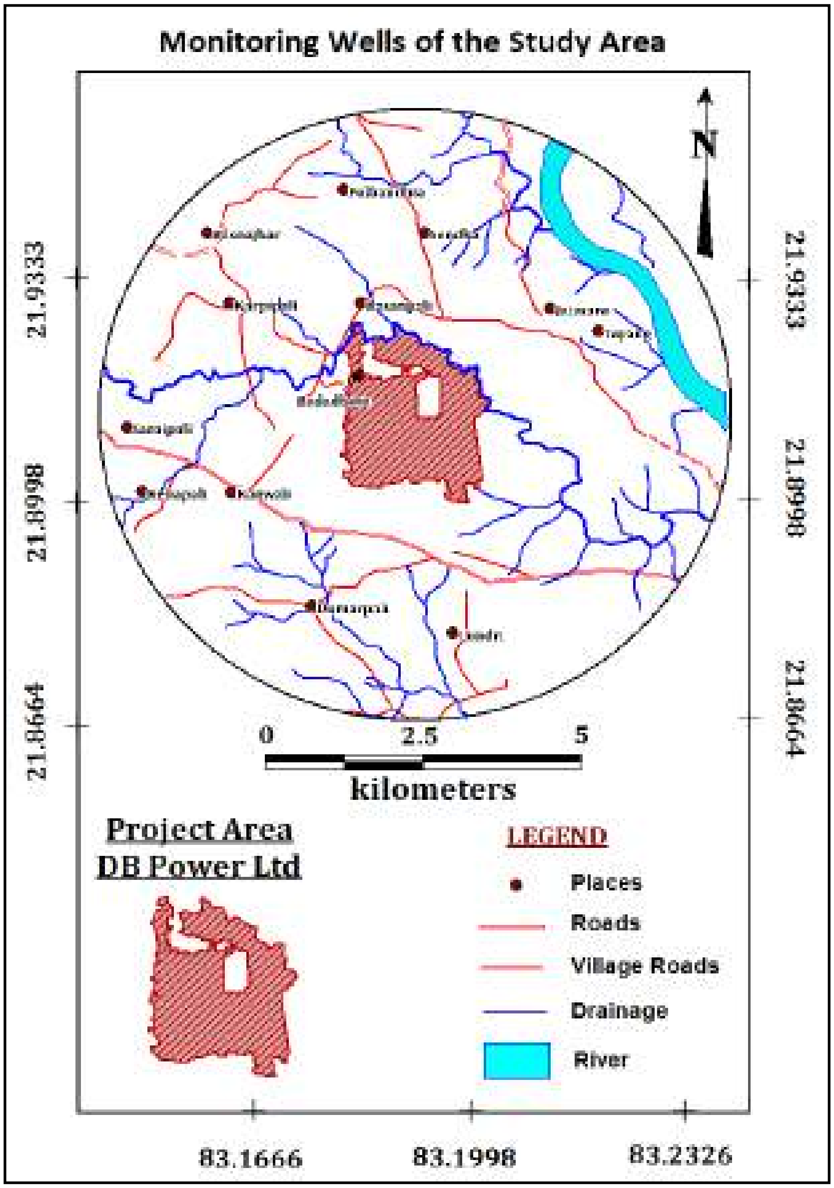


Fig 4.3: location of monitoring wells of the Study area

Table 4.1 : Basic details of established monitoring wells

Sl No.	Village	G.P.	Block	District	RL Of ground level (mamsl)	DIA (m)
1	Amapali	Kherpali	Kharsia	Raigarh	232	8 Inch
2	Sondka	Sondka	Kharsia	Raigarh	233	6 Inch
3	Badadhara	Badadhara	Dabhra	Shakti	231	6 inch
4	Basnajhar	Basnajhar	Kharsia	Raigarh	241	6 inch
5	Fulbandhia	Pandripani	Kharsia	Raigarh	232	6 Inch
6	Karpipali	Kanmuna	Kharsia	Raigarh	234	6 Inch
7	Tundri	Tundri	Dabhra	Shakti	236	6 Inch
8	Basanpali	Sondka	Kharsia	Raigarh	223	2.7 Mtr
9	Kenapali	Kenapali	Dabhra	Shakti	237	5 Inch
10	Saraipali	Saraipali	Dabhra	Shakti	239	6 Inch
11	Kanwali	Kanwali	Dabhra	Shakti	232	6 Inch
12	Dumarpali	Dumarpali	Dabhra	Shakti	232	6 Inch
13	Tayang	Jaimura	Kharsia	Raigarh	221	2.2 mtr
14	Jaimura	Jaimura	Kharsia	Raigarh	224	6 inch

5. ANALYSIS OF WATER LEVELS

5.1 INTRODUCTION

Ground water levels or piezometric heads is resultant of all input and output to ground water system with defined boundaries. Ground water is a dynamic system. The parameters required to be monitored during ground water regime monitoring are ground water level or piezometric heads and chemical quality. These are subject to change due to natural and or anthropogenic causes with respect to dime and space. Rainfall, natural recharge to ground water, ground water draft and seepage from surface water bodies plays important roles in changes in ground water level fluctuations. The quality of water is being recharge, nature of host rock and dilution/concentration of ground water impacts the changes in ground water quality. Monitoring of ground water quality and temperature are one of the essential components for ground water regime monitoring. The monitored data is analyzed in time and space to assess the changes and a relationship is established to determine the impact of ground water development and recharge to the system.

5.2 GROUND WATER LEVELS:

The configuration of the water table depends upon by topography, geology, climate, water yielding and water bearing properties of rocks in the zones of aeration and saturation, which control ground water recharge. The upper surface of the zone of saturation is the water table. In case of wells penetrating confined aquifers, the water level represents the pressure or piezometric head at that point. Ground water monitoring network planning is basic step for ground water regime monitoring and further, for assessment of groundwater resources and planning for development and management programs. The groundwater, being hidden resource can only be analyzed through its signatures in the form of water level fluctuations. The systematic and regular monitoring of groundwater levels can bring out the changes taking place in the regime. The data so generated are of immense help for regional groundwater flow modeling for planning and management of ground water resources and its sustainability. Modeling provides necessary information to the user agencies to frame contingency plans in case of unfavorable groundwater recharge situation.

The data have also immense utility in implementing the legal provisions of groundwater regulation, and to substantiate expert advice in legal issues arising out of conflicting interests of ground water users. Ground water regime data of different seasons have been collected for the year 2023, analyzed for every set of measurements and discussed with maps in following sections.

viii. 5.2.1 Analysis of water levels (2025)

The water level data collected two times during the year 2025 from the observation wells in core zone as well as buffer zone is presented in **Table 5.1.**

Table 5.1: Depth to water levels monitored in the study area (during 2025)

Sl No.	Village	Latitudes	Longitudes	Post monsoon depth to water 2025 level (mbgl)	Pre monsoon depth to water level 2025 (mbgl)	Fluctuation May 2025 Vs Nov 2025 (m)	RL of pre monsoon water level (mamsl)
1	Amapali	21^o 57' 39.55"	83^o 10' 46.72"	7.68	10.21	2.53	223.76
2	Sondka	21^o 56' 15.4"	83^o 11' 24.3"	11.56	13.24	1.68	222.16
3	Badadhara	21^o 55' 09.27"	83^o 11' 0343"	2.95	6.57	3.62	225.02
4	Basnajhar	21^o 56' 48.5"	83^o 09' 51.8"	8.40	12.78	4.38	237.56
5	Fulbandhia	21^o 56' 47.13"	83^o 10' 45.13"	6.4	8.21	1.81	228.15
6	Karpipali	21^o 55' 49.77"	83^o 09' 52.26"	5.70	9.74	4.04	240.65
7	Tundri	21^o 53' 47.97"	83^o 11' 10.66"	8.70	11.47	2.77	237.55
8	Basanpali	21^o 55' 57.87"	83^o 11' 2.94"	2.10	3.20	1.1	218.97
9	Kenapali	21^o 53' 35.75"	83^o 08' 43.05"	6.70	7.84	1.14	235.65
10	Saraipali	21^o 54' 32.91"	83^o 08' 47.37"	4.20	7.41	3.21	237.16
11	Kanwali	21^o 54' 9.92"	83^o 09' 39.41"	10.00	11.87	1.87	234.13

Sl No.	Village	Latitudes	Longitudes	Post monsoon depth to water 2025 level (mbgl)	Pre monsoon depth to water level 2025 (mbgl)	Fluctuation May 2025 Vs Nov 2025 (m)	RL of pre monsoon water level (mamsl)
12	Dumarpali	21^o 53’ 12.14”	83^o 10’ 37.02”	2.90	4.1	1.2	226.2
13	Tayang	21^o 54’ 28.51”	83^o 13’ 47.58”	8.74	9.70	0.96	211.01
14	Jaimura	21^o 56’ 14.91”	83^o 11’ 23.95”	9.40	11.21	1.81	212.56

5.2.1.1 Post-monsoon Depth to Water level (November’ 2025)

The depth to water level map has been prepared based on ground water monitoring data of Nov 2025. On perusal of the data and map given at Fig.5.1, it is observed that the overall depth to water level remains between 2.10 to 11.56 meters below ground level. The post-monsoon depths to water level range of 4 to 8 mbgl are observed at Kenapali, Saraipali, Karpipali, amapali & Fulbandhia villages. Ground water levels more than 8 mbgl are observed in the villages Kanwali, Sondaka, Tayang and Jaimura Villages. Water level less than 4 mbgl are observed in the remaining parts of the study area.

5.2.1.2 Pre-monsoon Depth to Water level (May’ 2025)

The depth to water level map has been prepared based on ground water monitoring data of May 2025. From the perusal of Table 5.1, it is observed that the overall depth to water level remains between 3.20 to 13.28 meters below ground level. The pre-monsoon depth to water levels ranges Below 5 mbgl is observed in Dumerpali and Basanpali villages. Water levels are between 5 - 8 mbgl is observed in the villages namely Saraipali, Kenapali and Badadhara villages. Water level greater than 8 mbgl is observed in the remaining parts of the study area as shown in Fig 5.2.

5.2.1.3 Seasonal water level fluctuation (Nov.’ 2025 Vs May’ 2025).

Based on the pre-monsoon & post-monsoon data water level fluctuation in the study area is calculated & respective map (as shown in Fig 5.3) has also been prepared. It is observed that in the study area water level fluctuation varies from 0.96 to 4.38 meters.

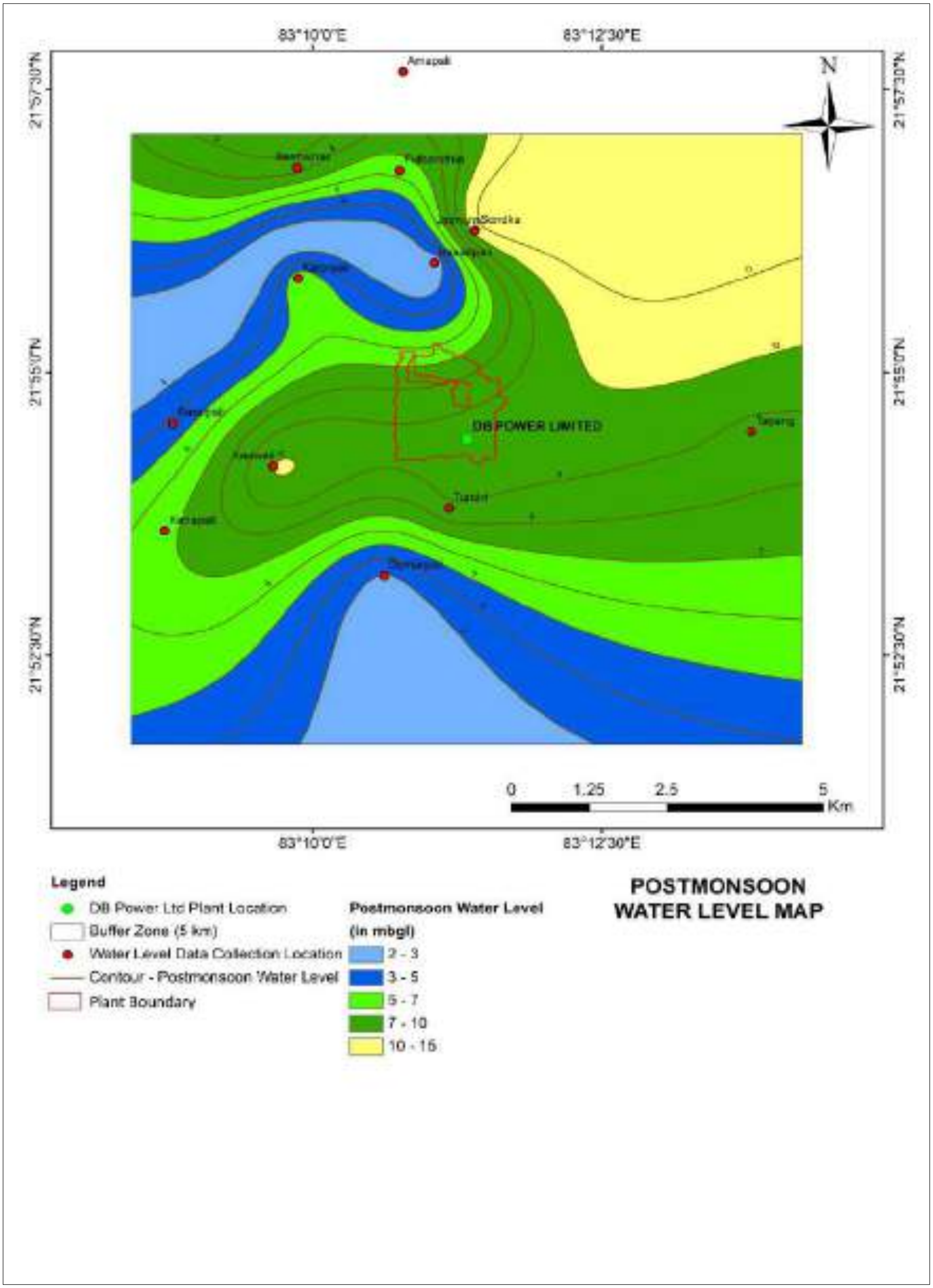


Fig.5.1: Post-monsoon Depth to Water level map (Nov'2025)

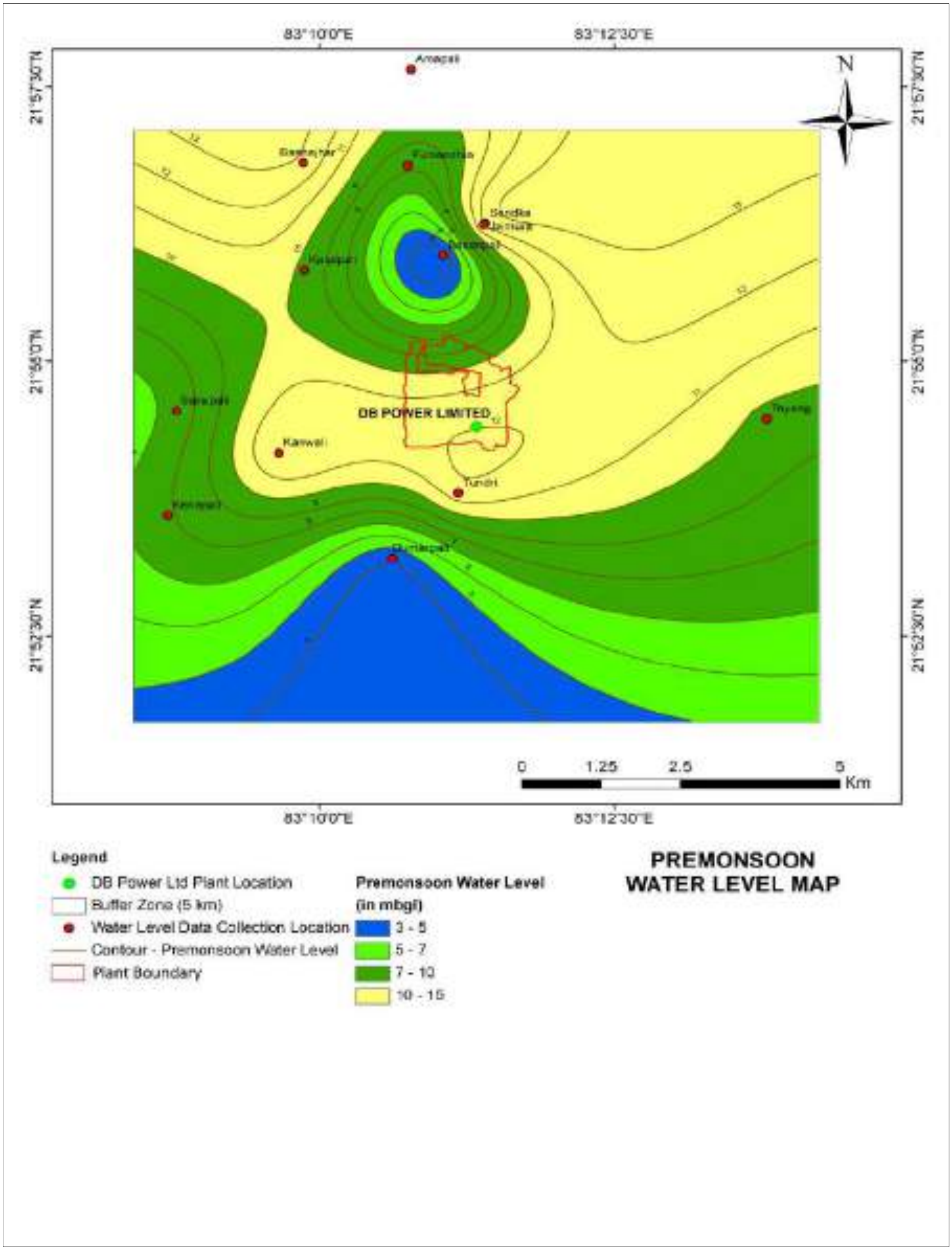


Fig.5.2: Pre-monsoon Depth to Water level map (May'2025)

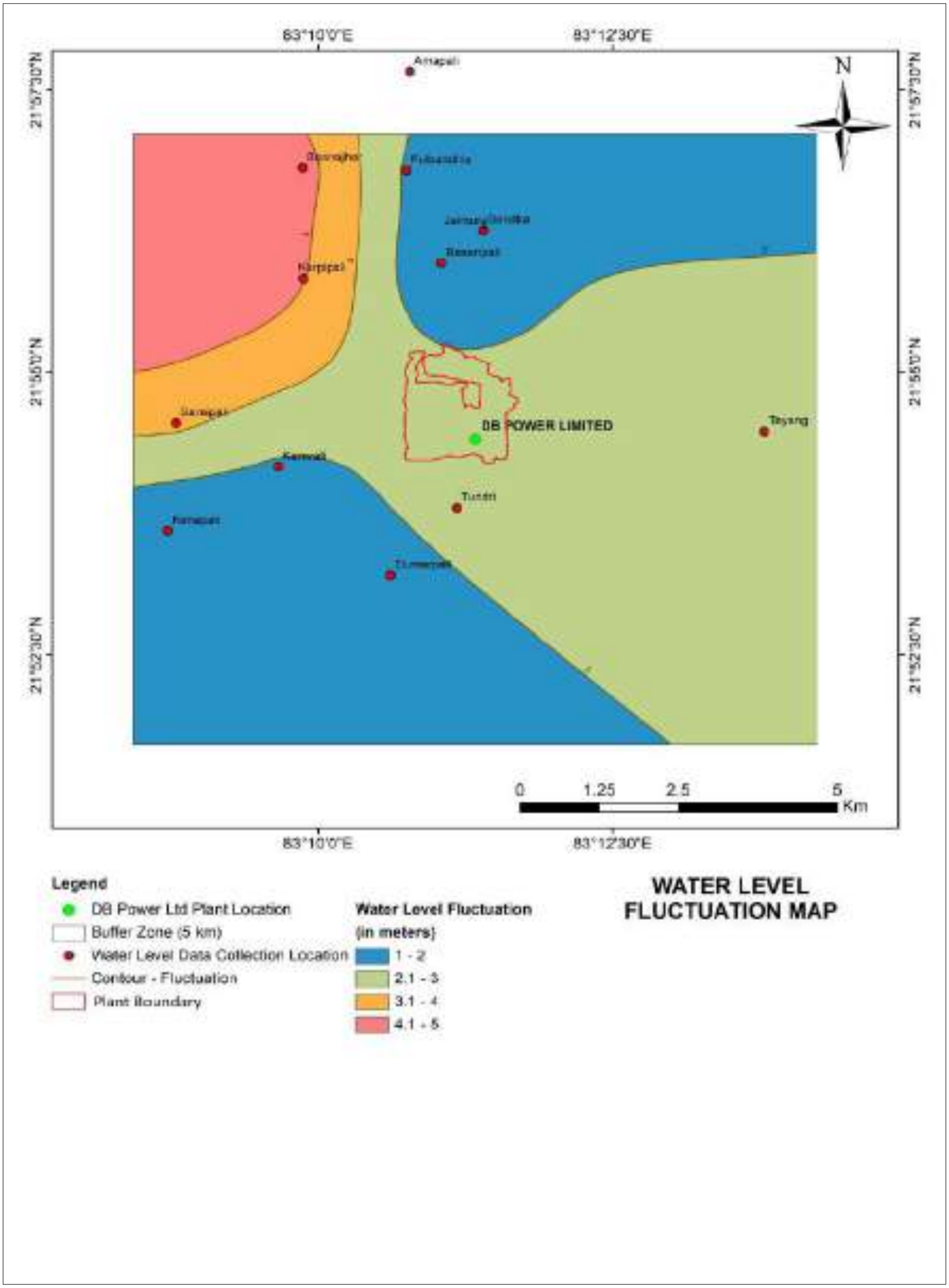
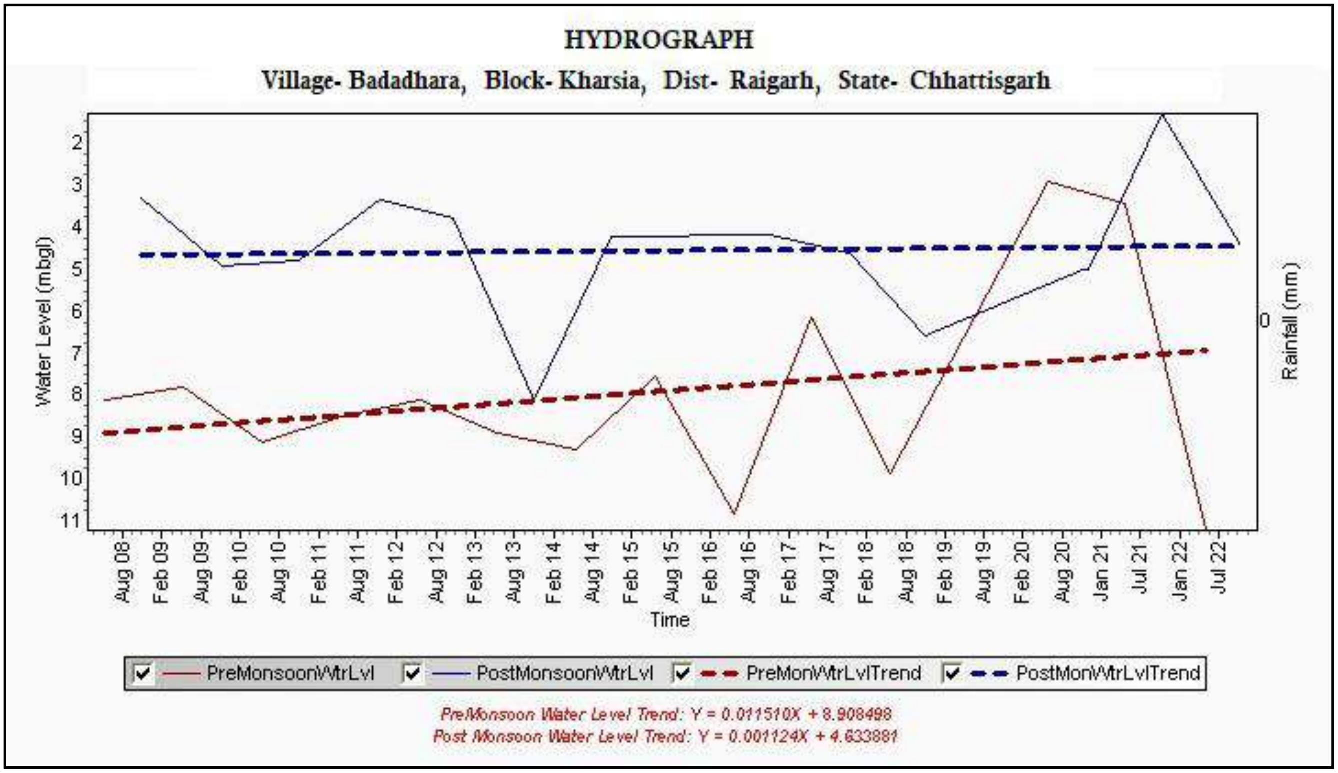
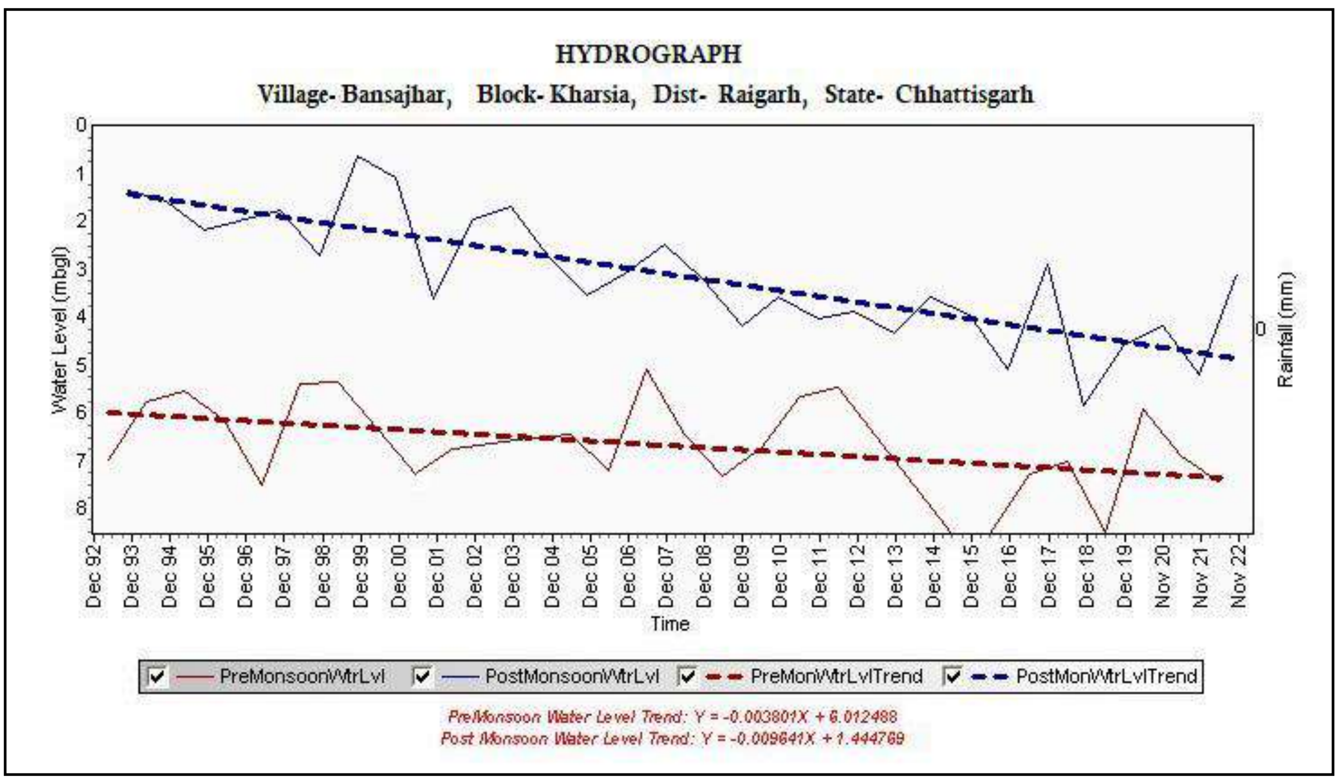


Fig 5.3: Seasonal Water Level Fluctuation map (Nov.' 2025 Vs May' 2025)

5.2. Ground Water Trends or Hydrographs of the Study Area





5.3 COMPARISONS OF WATER LEVELS OVER THE YEARS

The ground water levels in the area have been monitored 2 times in a year as mentioned earlier. Mean water level (2024) has been compared with water levels of year 2025, for pre-monsoon and post-monsoon period separately in the study area, to assess the change in ground water levels over the years. The said water levels of year 2024 (mean) compared with respect to year 2025 both for pre-monsoon and post-monsoon period separately for core and buffer zones are presented in Table 5.2.

Water level Changes

The water level data for last two years have been analysed to assess decline or rise in the ground water level through fluctuation in water level within the study area. Ground water level data for year 2025 has been analyzed for core and buffer zones and changes in water levels through fluctuation with respect to the mean water levels (2024) for different seasons is observed and presented in Table 5.2.

Pre-monsoon depth to water level Trend:

While comparing mean pre-monsoon average water levels of 2024 with that of 2025 (Table 5.2), it is found that 70% the villages in the study area which are considered for analysis showing decreasing in the range of -0.36 to -5.34 m. Three villages namely Dumerpali, Tayang and Jaimura ground water level increase upto 0.23 to 2.7 Mtr. Kanwali is the village where there is no wise and fall of water level during pre-monsoon period.

Table 5.2: Comparisons of water levels (2024) with reference to water levels of the year 2025

Sn	Village	pre-monsoon (May 24) (mbgl)	post-monsoon (Nov 24) (mbgl)	pre-monsoon May 2025 (mbgl)	Post-monsoon Nov 2025 (mbgl	Change(m) Pre-monsoon	Change (m) post-monsoon
5 Km Radius							
1	Amapali	8.24	5.3	10.21	7.68	-1.97	-2.38
2	Sondka	10.84	6.95	13.24	11.56	-2.4	-4.61

3	Badadhara	5.98	3.30	6.57	2.95	-0.59	0.35
4	Basnajhar	7.44	5.34	12.78	8.40	-5.34	-3.06
5	Fulbandhia	7.85	5.8	8.21	6.4	-0.36	-0.6
6	Karpipali	6.35	2.66	9.74	5.70	-3.39	-3.04
7	Tundri	7.45	4.33	11.47	8.70	-4.02	-4.37
8	Basanpali	4.03	1.6	3.20	2.10	0.83	-0.5
9	Kenapali	7.35	5.6	7.84	6.70	-0.49	-1.1
10	Saraipali	6.84	4.6	7.41	4.20	-0.57	0.4
11	Kanwali	11.87	7.13	11.87	10.00	0	-2.87
12	Dumarpali	6.8	2.20	4.1	2.90	2.7	-0.7
13	Tayang	9.99	6.84	9.70	8.74	0.29	-1.9
14	Jaimura	11.44	8.32	11.21	9.40	0.23	-1.08

Post-monsoon depth to water level Trend

While comparing mean post-monsoon average water levels of 2024 with that of 2025 (Table 5.2), it is found that 85% the villages in the study area which are considered for analysis showing decreasing in the range of -0.6to -4.61 m. Only two villages namely Badadhara and Saraipali ground water level increase upto 0.4 Mtr.

.

From the above it is observed that more than 75-80 % of the study area ground water level decreased in both pre and post monsoon period for last two years.

5.4 AQUIFER PARAMETERS:

Pumping test has been carried out for determination of aquifer parameters accurately. The aquifer parameters of study area covered by Sandstone are described below.

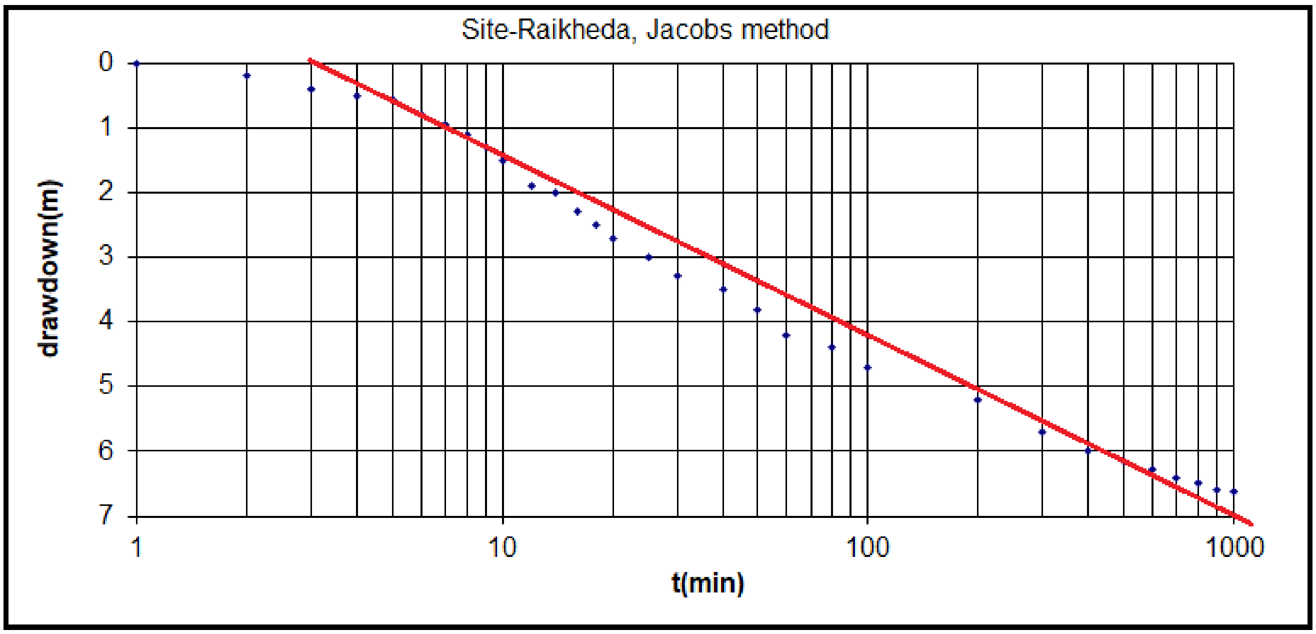
The transmissivity values of phreatic aquifer tapped in open well in general varies from 4 to 8.5 m^2/day while specific capacity ranges from 15 to 40 lpm/m/day. However for deep aquifer the transmissivity ranges from 15-32 m^2/day and at places it ranges up to 40m^2/day.

To verify the aquifer parameters of the aquifer present in the area pumping test has been carried out on a private /public bore well at Badadharha village (close to Project). The results and data interpretation is discussed below

Village	Badadharha
Block	Dabhra
District	Janjgir-Champa
State	Chattisgarh
Duration of test	1000 minutes
Capacity of pump	5 hp
Distance of OW from pump well	45 m.
Thickness of the aquifer	10
MP(magl)	0.8
SWL(mbmp)	6.5
Discharge(lps)	5

Table 5.3: Pumping Data observation well						
Sl.no.	Time since pumping started (min)	Tape Reading (m)		DTW (mbmp)	Draw Down (m)	Remarks
		Hold	Cut			
1	1	20	13.50	6.50	0.00	
2	2	20	13.30	6.70	0.20	
3	3	20	13.10	6.90	0.40	
4	4	20	13.00	7.00	0.50	
5	5	20	12.95	7.05	0.55	
6	6	20	12.70	7.30	0.80	
7	7	20	12.55	7.45	0.95	
8	8	20	12.40	7.60	1.10	
9	9	20	12.20	7.80	1.30	
10	10	20	12.00	8.00	1.50	
11	12	20	11.60	8.40	1.90	
12	14	20	11.50	8.50	2.00	
13	16	20	11.20	8.80	2.30	
14	18	20	11.01	8.99	2.49	
15	20	20	10.80	9.20	2.70	
16	25	20	10.50	9.50	3.00	
17	30	20	10.20	9.80	3.30	
18	40	20	10.00	10.00	3.50	
19	50	20	9.68	10.32	3.82	
20	60	20	9.30	10.70	4.20	
21	80	20	9.10	10.90	4.40	
22	100	20	8.80	11.20	4.70	
23	200	20	8.30	11.70	5.20	
24	300	20	7.80	12.20	5.70	

25	400	20	7.50	12.50	6.00	
26	500	20	7.35	12.65	6.15	
27	600	20	7.22	12.78	6.28	
28	700	20	7.09	12.91	6.41	
29	800	20	7.00	13.00	6.50	
30	900	20	6.90	13.10	6.60	
31	1000	20	6.88	13.12	6.62	



The pumping test data has been analyzed by Jacob's straight line method of the pumping data of the observation well. The calculation is given below.

Formulae: T= 2.3Q/4πΔs

K==T/b &

S= 2.25 T t_o/r^2

Where,

T =kD = Transmissivity, m^2/day

K =Permeability

B= Thickness of aquifer

Q = Discharge m^3/day

r = Distance (m) between PW & OW

Δs = Slope of straight line per log cycle of time

S = Storage coefficient

t_o= time in days at zero drawdown

On the basis of above formulae, the calculated parameters are as follows.

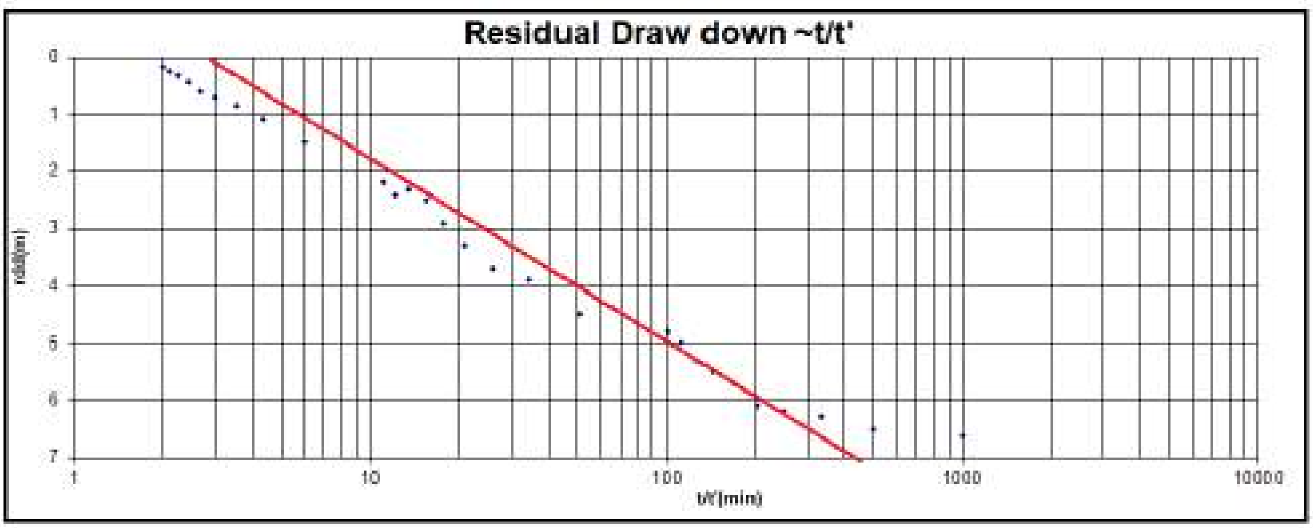
T= 30.42 m^2/day, K=2.3765 m/day&

S= 7.041 $X10^{-5}$

Table 5.4: Recuperation Data

Time since pumping started in min(t)	Time since pumping stopped in min (t')	t/t'	Tape reading (m)		DTW (mbmp)	RDD (m)	Remarks
			Hold	Cut			
1001	1	1001.00	20	6.88	13.12	6.62	
1002	2	501.00	20	7	13	6.5	
1003	3	334.33	20	7.1	12.9	6.4	
1004	4	251.00	20	7.29	12.71	6.21	
1005	5	201.00	20	7.4	12.6	6.1	
1006	6	167.67	20	7.5	12.5	6	
1007	7	143.86	20	7.66	12.34	5.84	
1008	8	126.00	20	7.89	12.11	5.61	
1009	9	112.11	16	4.1	11.9	5.4	
1010	10	101.00	16	4.5	11.5	5	
1020	20	51.00	16	5	11	4.5	
1030	30	34.33	16	5.6	10.4	3.9	

1040	40	26.00	16	5.8	10.2	3.7	
1050	50	21.00	16	6.2	9.8	3.3	
1060	60	17.67	16	6.6	9.4	2.9	
1070	70	15.29	16	6.99	9.01	2.51	
1080	80	13.50	16	7.18	8.82	2.32	
1090	90	12.11	16	7.1	8.9	2.4	
1100	100	11.00	16	7.3	8.7	2.2	
1200	200	6.00	16	8	8	1.5	
1300	300	4.33	16	8.4	7.6	1.1	
1400	400	3.50	16	8.64	7.36	0.86	
1500	500	3.00	16	8.8	7.2	0.7	
1600	600	2.67	16	8.9	7.1	0.6	
1700	700	2.43	16	9.05	6.95	0.45	
1800	800	2.25	16	9.18	6.82	0.32	
1900	900	2.11	16	9.26	6.74	0.24	
2000	1000	2.00	16	9.32	6.68	0.18	



Formulae:

$T = 2.3Q/4\pi\Delta s$, $K = T/b$&

$S = 2.25\ T\ t_o/r^2$

On the basis of above formulae, the calculated parameters are as follows.

T= 30.42 m^2/day, K=2.3765 m/day& S= 7.041 X10^{-5}

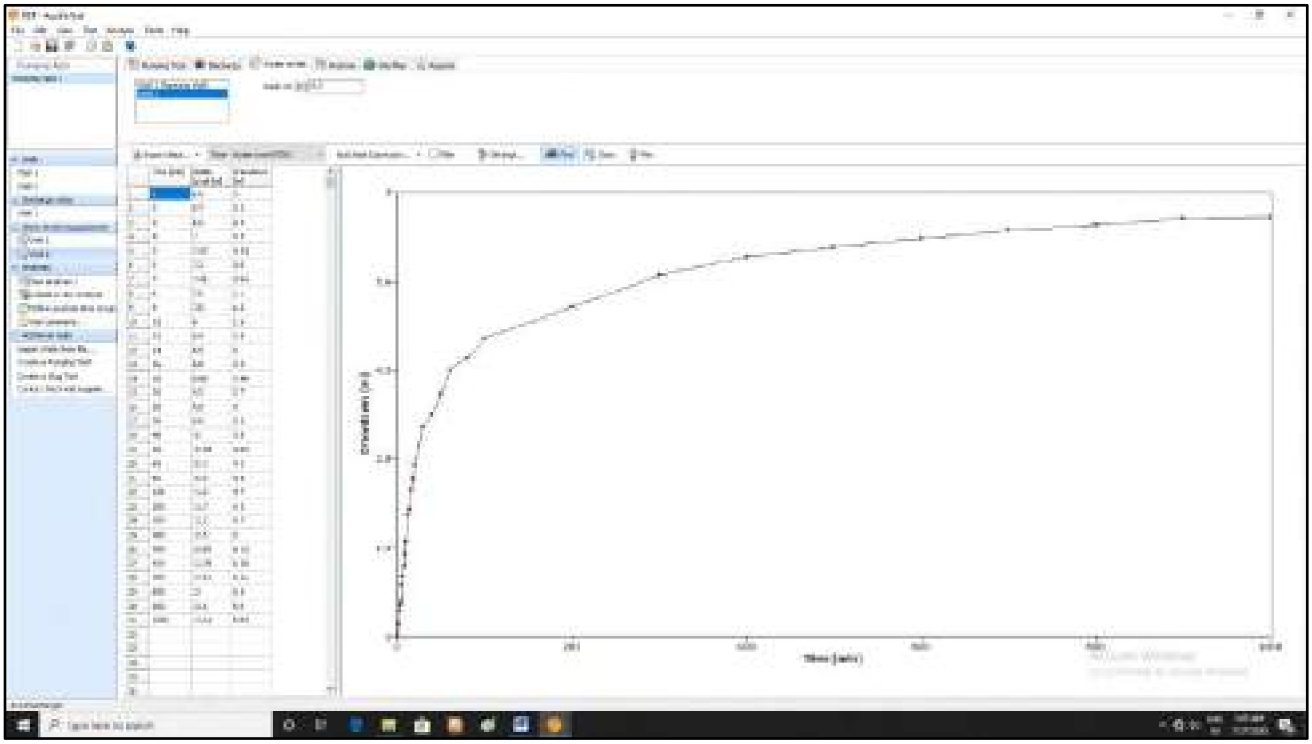


Fig 5.4: Pumping water level data plot in Aquifer test soft ware

6. SURFACE GEOPHYSICAL SURVEY

Surface geophysical survey comprised of one Vertical Electrical Sounding (VES) has been conducted at the project of M/S DB Power Ltd, Village-Badadhara, Block-Dabhra, District-Shakti , Chhattisgarh on 12.01.2024 to know the subsurface condition in the area. The VES location is given in the location map. The VES location is given in Fig No: 6.1.

Fig6.1: Location Map of Geophysical Survey

6.1 Resistivity Survey:

Using Ohm’s law electrical resistivity of sub-surface geologic formation is determined through artificially energizing the subsurface and carrying measurements on the ground surface. Contrast in resistivity value of an individual layer with the surrounding or effective presence (dependent of its relative resistivity and thickness) makes it detectable.

In the electrical resistivity method, a known amount of electrical current (I) is sent into the ground through a pair of electrode (called current electrodes) and the potential (δV) developed because of the resistance offered by the subsurface due to the passage of this current is measured across another pair of electrodes (potential electrodes) planted into the ground. The ratio between the potential measured and the corresponding current sent into the ground yields the resistance 'R' of the ground to a depth depending upon the spacing between the two current electrodes. Through the multiplication of this value of `R' by a geometric factor a parameter called the apparent resistivity "ρ_a" is computed. Both the parameters, apparent resistivity 'ρ_a' and the resistance 'R' contain the information on the geo-electric characteristics of the subsurface. In practice, there exist several configurations but most commonly used are the Wenner and Schlumberger configurations.

In this survey microprocessor based resistivity meter CRM-500 was used. For the present study Vertical Electrical Sounding (VES) have been carried out using Schlumberger configuration.Maximum spreads were 200m (AB) for sounding.

6.2 Vertical Electrical Sounding (VES)

VES is a process by which the depth investigation is made. In this, the centre is fixed and the measurements are made by successively increasing the electrode spacing. The apparent resistivity values obtained with increasing values of electrode separations are used to estimate the thickness and resistivity's of the subsurface formations. In Schlumberger sounding arrangement (Figure-6), all the four electrodes are kept in a line symmetrically over a point '0', with inner (Potential) electrodes kept closer. For increasing the depth of investigation the current electrodes C_1 and C_2 are moved apart symmetrically from the centre point `0' keeping the potential electrodes fixed. The separation between the potential electrodes is changed only when the potential between them drops to allow value during the course of sounding. The apparent resistivity for each electrode separation is calculated by multiplying the resistance `R' with Schlumberger configuration factor 'K' (which is called as geometrical factor).

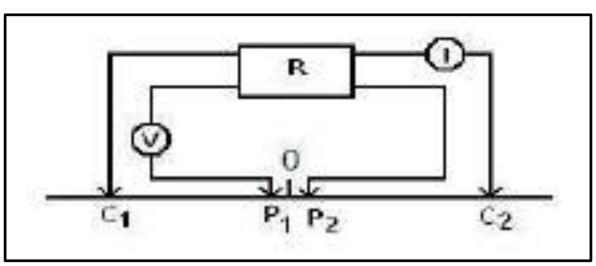


Fig 6.2 (A): Schlumberger electrode configuration

The formula is: $\rho_a = \pi R \{(C_1C_2/2)^2 - (P_1P_2/2)^2\} / P_1P_2$ or $\rho_a = KR$

Where 'K' is the geometric factor for Schlumberger configuration,

C_1C_2 is current electrode spacing

P_1P_2 is potential electrode spacing

Equipment

The geophysical methods are useful in constructing a picture of the subsurface hydrogeological conditions in totally virgin areas. It is based upon measurement of earth electrical properties. In the present study the resistivity surveys have been carried out by using Aquameter CRM 500 an indigenous microprocessor based Resistivity Meter (Fig.-6.2 B).

Aquameter CRM 500 is a high power version (40 Watt) which is useful for any type of soil specially preferred for low resistivity soil of the coastal region. It can penetrate current down to 500 meters. It is a popular instrument, because of its single button operation deep penetration, accurate and reliable result, even in adverse field conditions. The instrument has a facility to measure self-potential (SP) which is useful in mineral prospecting and environmental studies.

Fig 6.2 (B): Aquameter CRM 500

6.3 Data Analysis and Interpretation

Surface geophysical survey comprised of two Vertical Electrical Sounding (VES) has been conducted at the premises of M/S DB Power Ltd, , Village-Badadhara, Block-Dabhra, District-Jangir-Champa on 12.01.2024 to know the subsurface condition in the area. The observed resistance values from the instrument have been multiplied with geometric factor (K) to get the apparent resistivity values for each electrode spacing. The apparent resistivity values for different potential dipole were brought to single common potential dipole. The field apparent resistivity data were plotted on log-log graph paper against the half current electrode separation to get the VES curves (X axis-C1C2/2 value and Y axis apparent resistivity value).

These data of $C_1C_2/2$ and apparent resistivity were interpreted with the help of two layer master curve by curve matching technique and further checked with the help of IPI2WIN software. The final results were corroborated with the known hydrogeological conditions existing in the area. The geoelectric layer parameters (layer resistivity and layer thickness) were obtained for each VES. The field data of VES and field curves of VES are given in Table 6.1 and Fig-6.3, 6.4 & 6.5.

6.4 Discussion of result

The VES has been carried out at the premises of M/S D B Power Ltd, Village-Badadhara, Block-Dabhra, District-Jangir-Champa, Chhattisgarh on 10.1.2024 (See fig.1). DDR-3 Resistivity Meter has been used for conducting the VES. Schlumberger configurations have been used for conducting the VES survey. The maximum current electrode spread for conducting VES was 200m (AB).

The data is plotted on double logarithmic graph paper and matched with standard curves to know the true resistivity and thickness of various layers. The data is also interpreted by Computer using IPI2WIN software to verify the results of partial curve matching. From interpreted results of VES is discussed below.

VES-1:

It is an HA type curve and it has four layer. The topmost soil layer having resistivity value of 120 Ω-m is top whereas the second layer may be weathered Sandstone with resistivity of 80 Ω-m. The third layer is hard and compact sandstone with resistivity of 485 Ω-m. The last layer may be shale having resistivity of 66 Ω-m. The thickness of topmost layer is 3.05 m, second layer is 8.7 m and the third layer thickness is 21.5 m.

VES-2: It is also an HA type curve and it has four layer. The topmost soil layer having resistivity value of 106 Ω-m is top whereas the second layer may be weathered Sandstone with resistivity of 85 Ω-m. The third layer is hard and compact sandstone with resistivity of 296 Ω-m. The last layer may be shale having resistivity of 79 Ω-m. The thickness of topmost layer is 1.36, second layer is 67.8 m and the third layer thickness is 28.7 m.

VES-3:

It is also an HA type curve and it has four layer. The topmost soil layer having resistivity value of 87 Ω-m is top whereas the second layer may be weathered Sandstone with resistivity of 68 Ω-m. The third layer is hard and compact sandstone with resistivity of 419 Ω-m. The last layer may be shale having resistivity of 60 Ω-m. The thickness of topmost layer is 2.01, second layer is 6.7 m and the third layer thickness is 19.2 m.

Table-6.1: Interpreted Results of VES

VES No	Layer Resistivity (in Ohm-m)				Layer Thickness (in m)			Probable Fracture Zones
	ρ_1	ρ_2	ρ_3	ρ_4	h_1	h_2	h_3	
VES-1	120	80	485	66	3.05	8.7	21.5	17 to 21 m and 47-50 m
VES-2	106	85	296	79	1.36	7.8	28.7	15 to 19 m and 38-42 m
VES-3	87	68	419	60	2.01	6.7	19.2	22 to 26 m and 43-48 m

Conclusions & Recommendations

From the interpretation of resistivity survey data we got the following outcome.

The thickness of topsoil varies from 1.36 to 3.05 m with resistivity range of 87 to 120 Ω-m.

The thickness of weathered sandstone from 6.7 to 8.7 m with resistivity range of 68 to 85 Ω-m.

The thickness of hard sandstone from 19.2 to 28.7 m with resistivity range of 296 to 485 Ω-m.

The last layer is shale resistivity range of 60 to 79 Ω-m.

At point VES-1 probable fracture zones are there in between 17 to 21 m and 47 to 50 m.

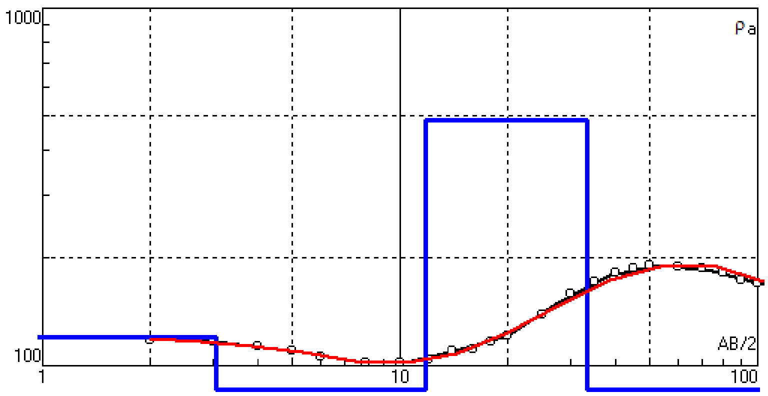
At point VES-2 probable fracture zones are there in between 15 to 19 m and 38 to 42 m.

At point VES-3 probable fracture zones are there in between 22 to 26 m and 43-48 m.

Bore hole may be drilled down to 100m to get a good amount of ground water.

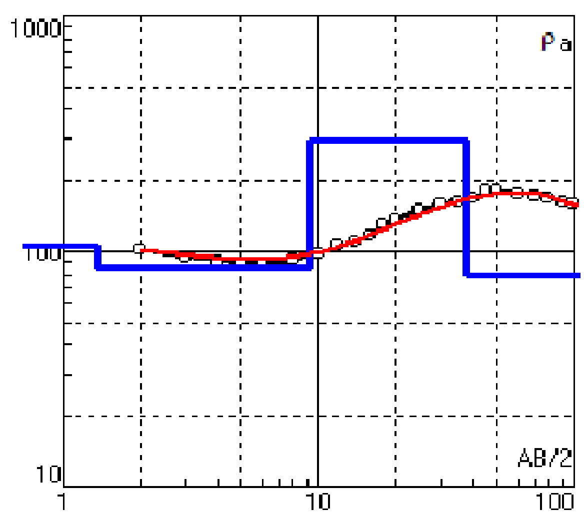
Table-6.2: **VES Data**					
VES1		**VES2**		**VES 3**	
Location: Urja road, inside plant		**Location: Near Resevior, Inside Plant Area**		**Location: Near Coal Yard, Outside of plant area**	
Latitude: N 21°56'14.5"		**Latitude:** N 21°56' 11.99"		**Latitude:** N 21°56’ 11.9"	
Longitude: E 83°11'36.5"		**Longitude:** E 83°11' 1.03"		**Longitude:** E 83°11' 31.04"	
Altitude: 234m		**Altitude:** 235m		**Altitude:** 239 m	
AB/2	**App. R**	**AB/2**	**App. R**	**AB/2**	**App. R**
2	118	2	102.36	2	91.42
3	117.12	3	94.35	3	83.26
4	113.2	4	91.47	4	82.47
5	110.36	5	88.47	5	75.48
6	106.45	6	89.74	6	78.46
8	102.36	8	92.47	8	82.15
10	102.34	10	97.48	10	90.15
12	103.49	12	106.49	12	94.26
14	110.48	14	111.05	14	99.45
16	111.32	16	116.87	16	108.64
18	116.32	18	131.56	18	117.45
20	121.45	20	137.56	20	125.63
25	139.35	25	149.74	25	135.29

30	158.34	30	158.94	30	148.65
35	171.45	35	162.47	35	151.42
40	181.47	40	170.23	40	162.38
45	187.45	45	182.36	45	168.47
50	190.32	50	183.26	50	170.32
60	188.47	60	176.49	60	166.52
70	186.47	70	173.45	70	163.29
80	181.47	80	168.49	80	158.49
90	172.65	90	161.23	90	148.75
100	170.16	100	159.74	100	149.52



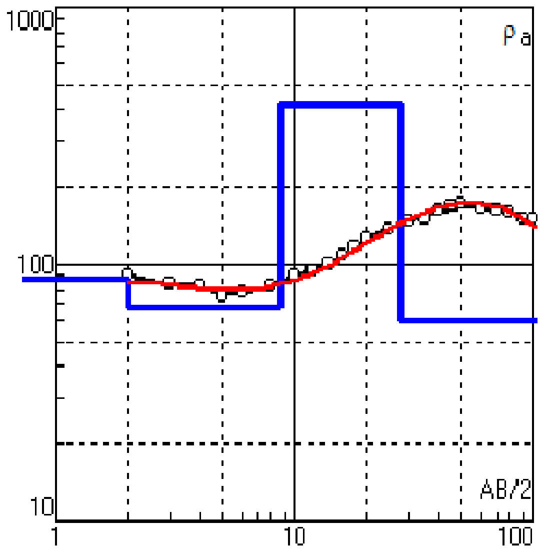
N	ρ	h	d	Alt
1	120	3.05	3.05	-3.0497
2	80.46	8.73	11.78	-11.78
3	485.5	21.56	33.34	-33.344
4	66.08			

Fig-6.3: VES Curve and interpreted results at Badadhara (Near Urja Road, Inside plant area) (VES 1)



N	ρ	h	d	Alt
1	106	1.36	1.36	-1.363
2	85.7	7.89	9.26	-9.255
3	296	28.7	38	-38.01
4	79.3			

Fig-6.4:VES Curve and interpreted results at Badadhara (Near Resevior, Inside Plant Area) (VES 2)



N	ρ	h	d	Alt
1	87.3	2.01	2.01	-2.007
2	67.9	6.73	8.73	-8.733
3	419	19.2	27.9	-27.89
4	60.5			

Fig-6.5:VES Curve and interpreted results at Badadhara (Near Coal Yard, Outside of plant area)(VES3)

FIG 6.6: PHOTOGRAPHS OF GEOPHYSICAL SURVEY IN DIFFERENT LOCATION IN STUDY AREA

7. ARTIFICIAL RECHARGE AND RAIN WATER HARVESTING

Artificial recharge to ground water through scientifically designed structures has been proven as a viable option for augmentation of ground water resources. It also provides an opportunity to utilize the surplus monsoon run-off which otherwise lost to sea unutilized.

Artificial recharge aims at augmenting the natural replenishment of ground water storage by some method of construction, spreading of water, or by artificially changing natural conditions. It is useful for reducing overdraft, conserving surface run-off, and increasing available ground water supplies. Recharge may be incidental or deliberate, depending on whether or not it is a by-product of normal water utilization. Artificial recharge is becoming increasingly necessary to ensure sustainable ground water supplies to satisfy the needs of a multi-pronged demand. The benefits of artificial recharge can be both tangible and intangible.

The concept of rainwater harvesting involves 'tapping the rainwater where it falls'. A major portion of rainwater that falls on the earth's surface runs off into streams and rivers and finally into the sea. The technique of rainwater harvesting involves collecting the rain from localized catchment surfaces such as roofs, plain/sloping surfaces etc., either for direct use or to augment the ground water resources depending on local conditions. Construction of small barriers across small streams to check and store the running water also can be considered as water harvesting.

During monsoon season, whatever rainwater is collected in the premises of project area, i.e. through, Building/roof area, Road/Paved area, Green belt area and Open land will be utilized to recharge the ground water. It is proposed to implement rain water harvesting structures at feasible, viable and sustainable location, catchment wise by diverting the runoff that is generated from the roof area, paved area, roads and green belt area for recharging into the specified recharge structure for putting into ground water system. The runoff generated from the two catchments needs to be suitably diverted through storm water drains to the recharge structures in order to augment the ground water. Overflow water from recharge structures is to be stored into two proposed ponds to be constructed at the western fringe of the plant area as a water conservation measures. Special care needs to be taken for locating the recharge structures and water conservation storage ponds so that the ground water augmentation as well as conservation is optimal. Implementation of water conservation structures and recharge mechanism shall ensure the balance between the discharge vis-à-vis recharge relationships of the aquifer system and provide the sustainable ground water supply. Based on the site plan and the land use pattern of the project area, the computation of runoff for each unit has been worked out and the details are tabulated below.

Total Area available for recharge – **2549521.8 sq.m.**

Rainfall – 1100 mm. (60-65 rainy days)

Formations –Shale & Sandstone.

7.1. Runoff Available for Recharge:

7.1.1: Surrounding area of 5 K.m. from Plant Boundary:

S. N.	Land use type	Area (m^2)	Rainfall (m)	Amount of water that received Through Rain (Cub meter)	Co-efficient of runoff	Quantity of Rainwater (m^3)
1.	Build - up Area	4509691	1.10	4960660.1	0.85	4216561.08
2.	Green belt area Approx.	5387960	1.10	5926756	0.15	889013.4
3.	Open land area	6741150	1.10	7415265	0.20	1483053
4.	Water Bodies	2523190	1.10	2775509	0.60	1665305.4
5.	Agriculture Land	105195540	1.10	115715094	0.30	34714528.2
6.	Total Area	**124357531**	……	……	…….	42968461.08
6.	Assuming 10% is not Suitable for recharge, hence available quantum of Rain water for Recharge is about **38671614.97 m^3** [90% **42968461.08 m^3**]					

From the above, it is observed that a total potential of **38671614.97** cum of rainfall runoff can be collected from the surrounding of 5 k.m. radius from plant boundary.

7.1.2: Recharge from Plant Complex Area:

S. N.	Land use type	Area (m^2)	Rainfall (m)	Amount of water that received Through Rain (Cub meter)	Co-efficient of runoff	Quantity of Rainwater (m^3)
1.	Construction area	1003621.28	1.10	1103983.40	0.85	938385.89
2.	Green belt area Approx.	837700.02	1.10	921470.02	0.15	138220.50
3.	Open land area	465388.1	1.10	511926.91	0.20	102385.38
4.	Raw Water Reservoir	242811.6	1.10	267092.76	0.60	160255.65
5.	Total Area	**2549521**	……	……	…….	1339247.42
6.	Assuming 10% is not Suitable for recharge, hence available quantum of Rain water for Recharge is about **1205322.67 m^3** [90% **1339247.42 m^3**]					

From the above, it is observed that a total potential of **1205322.67** cum of rainfall runoff can be harvested at feasible, viable and sustainable location annually.

Plant Complex area:

The main interest in rainwater harvesting methods is the collecting and conserving rainwater at an early stage in the water cycle to ensure the best use of rainfall before it runs away into rivers and groundwater, or disappears as evaporation. The appropriate choice of rainwater harvesting and artificial recharge techniques depends on the amount of rainfall and its distribution, land topography, soil type, vadose zone thickness and its hydraulic characteristics, depth and type of aquifers, hydraulic parameters of aquifer systems, source and quality of recharge water, and socio-economic factors, among others; these factors tend to be location specific.

Thus, the selection of water harvesting structures and artificial recharge methods strongly depends on local conditions, which calls for proper scientific investigations prior to the design and execution of artificial recharge and/or rainwater harvesting schemes. Water harvesting methods include such widely differing practices as 'roof top water harvesting', 'land surface water harvesting' and 'groundwater harvesting'. On the other hand, a variety of methods have been developed to artificially recharge groundwater and mostly of combinations of direct surface, direct subsurface or indirect recharge techniques. Commonly used artificial recharge techniques, however, are through drainage canals, from surface water bodies like ponds and lakes, recharge through pits/shafts and tube wells/ bore wells etc.

The increasing stress on ground water needs, preventive measures like rain water harvesting structures and recharge measures are to be taken. It has been found that the plant areas of M/S DB Power Limited offers enough scope and options for rain water harvesting and recharge measures. In view of this, detailed topographical, hydro-geological and hydrological study has been undertaken in the area, so as to formulate a comprehensive recharge plan outlining measures with recommended site specific designs for rain water conservation and recharge measures along with the implementing modalities.

Since, the selection and design of artificial recharge and water harvesting structures are highly dependent on the local feasible and suitable conditions and the availability of local materials for their construction. A successful design of artificial recharge and rain water harvesting structures necessitates proper understanding of hydrology and hydro-geology of the project area.

Total recharge potential of **1205322.67** cum of rainfall runoff can be harvested at feasible, viable and sustainable location annually, based on hydrogeological condition trench and recharge pits use for ground water artificial recharge.

The plant is already constructed recharge trench & recharge reservoir to recharge the ground water of the study area.

Fig 7.1: Rain water Harvesting in the plant premises

Fig 7.2: Piezometric Point for Ground water level Monitoring in the plant area

7.3: Stages of Ground water Development:

The Total Ground water Storage, net annual ground water availability (ham), ground water draft (ham), ground water for future use (ham) and stage of ground water development (%) is given in 7.3.

Total Area of Assessment Unit (Ha) is 42064. Total Annual Ground Water (Ham) Recharge is 5528.96. Annual Extractable Ground Water Resource (Ham) is **5400.31**. Total Extraction (Ham) is **3707.93**. Net Ground Water Availability for future use (Ham) is 1046.8. Stage of Ground Water Extraction (%) is 74.04.

As per ground water resources data the Block Dabhara is categorized as **Semi-critical zone**.

Table: 7.2: Ground Water Resource of Dabhara Tehsil

Assessment Unit Name	Total Area of Assessment Unit (Ha)	Recharge Worthy Area(Ha)	Recharge from Rainfall-Monsoon Season	Recharge from Other Sources-Monsoon Season	Recharge from Rainfall-Non Monsoon Season	Recharge from Other Sources-Non Monsoon Season	Total Annual Ground Water (Ham) Recharge	Total Natural Discharges (Ham)
In ham								
Dabhara	**42064**	**42064**	**2471.65**	**1211.64**	**27.73**	**1817.94**	**5528.96**	**410.36**

Table: 7.3: Ground Water Resource of Dabhara Tehsil

Assessment Unit Name	Annual Extractable Ground Water Resource (Ham)	Ground Water Extraction for Irrigation Use (Ham)	Ground Water Extraction for Industrial & Domestic Use (Ham)	Total Extraction (Ham)	Annual GW Allocation for Domestic Use as on 2025 (Ham)	Net Ground Water Availability for future use (Ham)	Stage of Ground Water Extraction (%)
In ham							
Dabhara	**5400.31**	**3273.122**	**434.801**	**3707.93**	**488.76**	**5008.01**	**74.04**

Ground water recharge by rainfall infiltration Method

Rrf= NAR x A x rfi, Where Rrf= Recharge from Rain fall, NAR= Normal Annual Rainfall, A= Area of unit in ha

RIF = Rain fall infiltration Factor

Total Annual water availability= Rain fall recharge + seepage from irrigation + Recharge from tanks/Ponds

Net ground water availability = total recharge – Base Flow

Total Annual Demand in Ham = Population X Average Per Capita Consumption (60) X 365/1000 X 10000

Ground Water Draft for Irrigation = Number of Ground Water Structure X Unit Draft in Ham

Ground Water Balance = Annual Utilizable GW Resource – Gross Ground Water Draft

Stage of Ground Water Development = Gross Ground Water Draft X 100/ Annual Utilizable GW Resource.

8. GROUND WATER QUALITY

The suitability of ground water for drinking/irrigation/industrial purposes is determined keeping in view the effects of various chemical constituents present in water on the growth of human being, animals, and various plants and also on industrial requirement. However, many ions are very essential for the growth of plants and human body but when present in excess, have an adverse effect on health and growth. For estimation of the quality of ground water, 7 ground water samples have been collected in study area. The ground water samples were analysed for major as well as heavy chemical constituents. The ranges of different chemical constituents present in ground water are given in **Table 8.1 and location of sampling is given in fig 8.1**.

Table 8.1: Village wise chemical constituents

Village	Desirable limit	Permissible limit	Reservior Pond	Ash Pond	Main gate Pond Water	Badadadhra Village	Basanpali Village	Jaimura Village River Water	Tayang village	Tundri village
G.P.			Badadadhra	Badadadhra	Badadadhra	Badadadhra	Sandka	Jaimura	Jaimura	Tundri
Block			Dabhra	Dabhra	Dabhra	Dabhra	Dabhra	Dabhra	Dabhra	Dabhra
Dist			Shakti	Shakti	Shakti	Shakti	Shakti	Shakti	Shakti	Shakti
Latitude			N 21^{O} 54’ 50.17”	N 21^{O} 54’ 29.12”	N 21^{O} 54’ 01.67”	N 21^{O} 55’ 06.69”	N 21^{o} 55' 48.6"	N 21^{O} 55’ 45.73”	N 21^{O} 54’ 28.57”	N 21^{O} 53’ 33.8”
Longitude			E 83^{o} 11’ 37.84”	E 83^{o} 11’ 18.64”	E 83^{o} 11’ 17.70”	E 83^{o} 10’ 50.78”	E83^{o} 10'50.6"	E 83^{o} 12’ 25.50”	E 83^{o} 13’ 47.95”	E 83^{o} 11’ 29.79”

Sample taken from			Surface Water	Surface Water	Surface Water	Ground water	Ground water	Surface Water	Ground water	Ground water
PH Value	6.5-8.5	No relaxation	7.9	7.10	6.98	7.01	7.13	7.23	7.50	7.18
Turbidity (NTU)	1	5	2.3	2.9	4.3	<1	<5	5	<5	<1
Conductivity	>1000	3200	560	620	600	180	553	220	700	500
Total Disolved Solid (mg/l)	500	2000	364	403	390	116	360	143	455	325
Total Hardness (as Caco3) (mg/l)	200	600	260	380	270	88	168	100	380	200
Calcium (Ca) (mg/l)	75	200	51.30	76.95	53.98	32.06	35.27	28.8	80.16	40.08
Calcium Hardness in (mg/l)	-	-	127.99	191.99	134.68	79.98	87.99	71.99	199.9	99.9
magnesium (As mg) (mg/l)	30	100	32.07	45.68	32.88	1.9	19.44	6.8	43.74	24.3
Magnesium Hardness(As mg) (mg/l)	-	-	132	188	135.31	8.02	80.01	28.01	180.1	100.0
Carbonates As c03	-	-	108.24	213.2	73.8	65.62	65.6	59.04	229.6	147.6
Bi-carbonates as Hco3	-	-	161.04	341.6	109.8	97.6	97.6	87.84	341.6	219.6
chloride (As Cl) (mg/l)	250	1000	21.99	61.98	15.99	5.9	19.99	11.99	50.6	59.98

Total Alkalinity (as Caco3) (mg/l)	200	600	132	260	90	80	80	72	280	180
Fluride (as F) (mg/l)	1	1.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.16	<0.1
Sulphate (As So4) (mg/l)	200	400	10	4	2	<1	2.3	1.6	4.9	2.6
iron (as Fe) (mg/l)	1	No relaxation	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.19	<0.1
Nitrate (As No3) (mg/l)	45	No relaxation	<1	<1	<1	<0.1	<1	<1	1.28	<1
Sodium (Na) (mg/l)	-	-	<1	1.2	<1	1	1	1.3	6	1.8
Potasium (K) (mg/l)			<1	<1	<1	<1	<1	<1	2	<1

Table 8.2: Village wise chemical constituents

SN	Parameters	Prescribed limits as per IS 10500		Observed value	
		Desirable limit	Permissible limit	Min	Max
1	PH Value	6.5-8.5	No relaxation	6.98	7.9
2	Turbidity (NTU)	1	5	<1	<5
3	Conductivity	>1000	3200	180	700
4	Total Disolved Solid (mg/l)	500	2000	116	455
5	Total Hardness (as Caco3) (mg/l)	200	600	88	380
6	Calcium (Ca) (mg/l)	75	200	28.8	76.95
7	Calcium Hardness in (mg/l)	-	-	71.99	199.9
8	magnesium (As mg) (mg/l)	30	100	1.9	45.68

9	Magnesium Hardness(As mg) (mg/l)	-	-	8.02	188
10	Carbonates As c03	-	-	59.04	229.6
11	Bi-carbonates as Hco3	-	-	87.84	341.6
12	chloride (As Cl) (mg/l)	250	1000	5.9	61.98
13	Total Alkalinity (as Caco3) (mg/l)	200	600	72	280
14	Fluride (as F) (mg/l)	1	1.5	<0.1	0.16
15	Sulphate (As So4) (mg/l)	200	400	<1	10
16	iron (as Fe) (mg/l)	1	No relaxation	<0.1	0.19
17	Nitrate (As No3) (mg/l)	45	No relaxation	<0.1	1.28
18	Sodium (Na) (mg/l)	-	-	<1	6
19	Potasium (K) (mg/l)			<1	2

According to above table, majority of chemical constituent of all samples are within permissible limit and suitable for drinking, irrigation and industrial use.

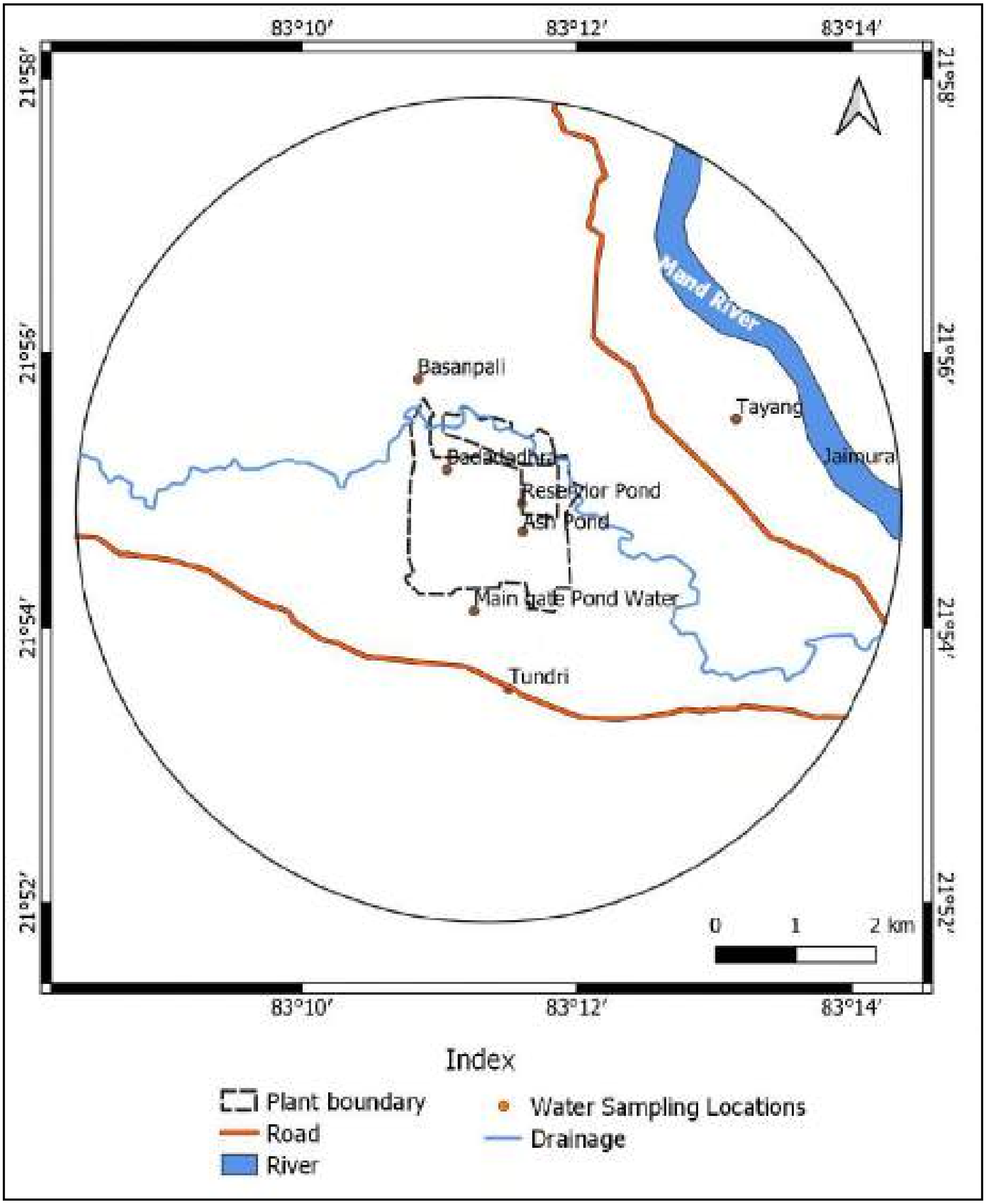


Fig 8.1 location of water sampling stations

Geochemical Classification of Ground Water

The geochemical classification of ground water, of study area has been carried out by using Piper Diagrams the ground water is of Ca/Mg-CO3/HCO_3 type. The analysis of ground water samples collected from the area suggests that type of water in the major part is bicarbonate dominating type, The type of ground water found in each ground water sample collected is given in the **Table 8.3**

Table 8.3. The type of ground water

SN	Sample ID	Station ID	X	Y	Water Type	pH	El. Cond. uS/cm	TDS (mg/l)
1	SW1	Reservior Pond	E 83^o 11’ 37.56”	N 21^O 54’ 50.21”	Ca-Mg-CO3-HCO3	7.9	560	364
2	SW2	Ash Pond	E 83^o 11’ 45.39”	21 ^{O} 54’ 46.69”	Mg-Ca-SO4-Cl	7.10	620	403
3	SW3	Main gate Pond	E 83^o 11’ 16.21”	N 21^O 54’ 4.88”	Mg-Ca-CO3-HCO3	6.98	600	390
4	SW4	Badadadhra	E 83^o 11’03.55”	N 21^{O}55’ 09.06”	Ca-Mg-Cl-CO3-HCO3	7.01	180	116
5	SW5	Basanpali	E 83^o 10’ 50.2”	N 21^O 55’ 48.4”	Ca-Mg-CO3-HCO3	7.13	553	360
6	SW6	Jaimura River	E 83^o 14’ 04.6”	N21^O 55’ 09.5"	Mg-Ca-CO3-HCO3-Cl	7.23	220	143
7	SW7	Tayang	E 83^0 11' 37.56"	N21^0 55' 31.1"	Ca-Mg-CO3-Cl-HCO3	7.50	700	455
8	SW8	Tundri	E 83^o 11’ 29.79”	N 21^O 53’ 33.8”	Mg-Ca-CO3-HCO3	7.18	500	325

SUITABILITY OF GROUND WATER FOR DRINKING AND IRRIGATION PURPOSES

The suitability of ground water for drinking purpose

The suitability of ground water for drinking purpose is determined keeping in view the effects of various chemical constituents present in water on the biological system of human being. The standards proposed by the Bureau of Indian Standards (BIS) for drinking water (BIS-2012, revised) were used to decide the suitability of ground water that occur in study area for drinking purpose. The classification of ground water samples falling below desirable limit (DL), between desirable &

maximum permissible limit (DL-MPL) and above maximum permissible limit (MPL) for drinking water purpose limit is shown in the following **Table 8.4**

Table 8.4: Classification of Ground Water Samples for Drinking Purposes.

Parameters	Drinking water Standards (IS-10500-91, Revised 2012)		Total No. of GW Samples	Samples (< DL)		Samples (DL-MPL)		Samples (>MPL)	
	Desirable Limit (DL)	Maximum Permissible Limit (MPL)		No.	%	No.	%	No.	%
PH	6.5-8.5	No relaxation	8	0	0	8	100	0	0
TDS (mg/L)	500	2000	8	8	100	0	0	0	0
TH (mg/L)	200	600	8	4	50	4	50	0	0
Ca (mg/L)	75	200	8	5	62.5	3	37.5	0	0
Mg (mg/L)	30	100	8	4	50	4	50	0	0
Cl (mg/L)	250	1000	8	8	100	0	0	0	0
SO_4 (mg/L)	200	400	8	8	100	0	0	0	0
NO_3 (mg/L)	45	-	8	8	100	0	0	0	0

It is observed from the above **table 8.4**, that than 100 % of samples are suitable for drinking purposes. Therefore, it is concluded that the portability of ground water in study area.

The suitability of ground water for Irrigation purpose

Water is one of the most important constituents, which is required for plant growth, which not only provides the liquid for food processing of the plants but also provides important nutrients for the growth of the plants. But when concentration of ions, are found in excess in the water, it affects the plant growth and reduces the plant yield. Therefore, it is necessary to know the quality of the water before applying in the field, so that the maximum crop yield can be obtained.

Sodium Adsorption Ratio (SAR)

SAR is an expression pertaining to cation makes up of water and soil solution and is used for characterizing the sodium hazard of irrigation water. The main problem with high sodium concentration is its effect on soil permeability & water irrigation. Sodium also contributes directly to the total salinity of the water and may be toxic to sensitive crops such as fruit trees. SAR is calculated from the following equation-

$$SAR = \frac{Na^{+}}{\sqrt{(Ca^{2+} + Mg^{2+})/2}}$$

Where the concentration of cations are expressed in meq/L.

Residual Sodium Carbonate (RSC)

Water containing carbon dioxide on way gets saturated with carbon dioxide and forms bicarbonates. The excess bicarbonates of Mg and Ca are precipitated out as carbonates. This produces impermeability to the top soil. Bicarbonate concentration of water has been suggested as additional criteria of suitability of irrigation water. Residual sodium carbonate is determined by using the following formula.

RSC = (CO3+ HCO3) - (Ca+Mg)

The suitability of ground water of study area for irrigation purpose was considered on the basis of U. S Salinity diagram in which electrical conductivity value in μS/cm at 25°C upto 2250 μS/cm at 25°C is plotted on one axis and the SAR values upto 10 on the other. The electrical conductivity and the corresponding SAR & RSC values of each ground water sample collected from the study area is given in the **Table 8.5**, and the EC and SAR values are plotted in **Wilcox Diagram (Fig 8.2)** and **Piper(Fig 8.3).**

The number of ground water samples based on Sodium Absorption Ratio (SAR) characteristics falling under Good, Good to Permissible, Doubtful & Bad (Unsuitable) categories is shown in the following **Table 8.5**

From the Table 8.5, it is observed that 100% of samples show SAR values below 10 and falling in the Low Sodium (alkali) Hazard Zone (S1). Such type of water can be used for irrigation on almost all soils with little danger of development of sodium exchangeable problem. Out of 8 samples collected from study area all samples having EC < 2250 μS/cm at 25° .

The High Salinity Water (C3) cannot be used on soils with poor drainage. Even with adequate drainage, special management for salinity control may be required and plants with good salt tolerance should be selected.

Table 8.5: Classification of ground water for irrigation based on SAR values

EC microsiemens/cm at 25°C		SAR Value			
		<10 (S1)	10-18 (S2)	18-26 (S3)	>26 (S4)
	Quality	Good	Good to Permissible	Doubtful	Bad (Unsuitable)
	Total No. of GW Samples	No. of samples	No. of samples	No. of samples	No. of samples
< 100	-	-	-	-	-
100-250 (C1)	2	2	-	-	-
250-750 (C2)	6	6	-	-	-
750-2250 (C3)	0	0	-	-	-
2250-5000 (C4)	-	-	-	-	-
> 5000	-	-	-	-	-
Total	8	8			
Overall Percentage		100%			

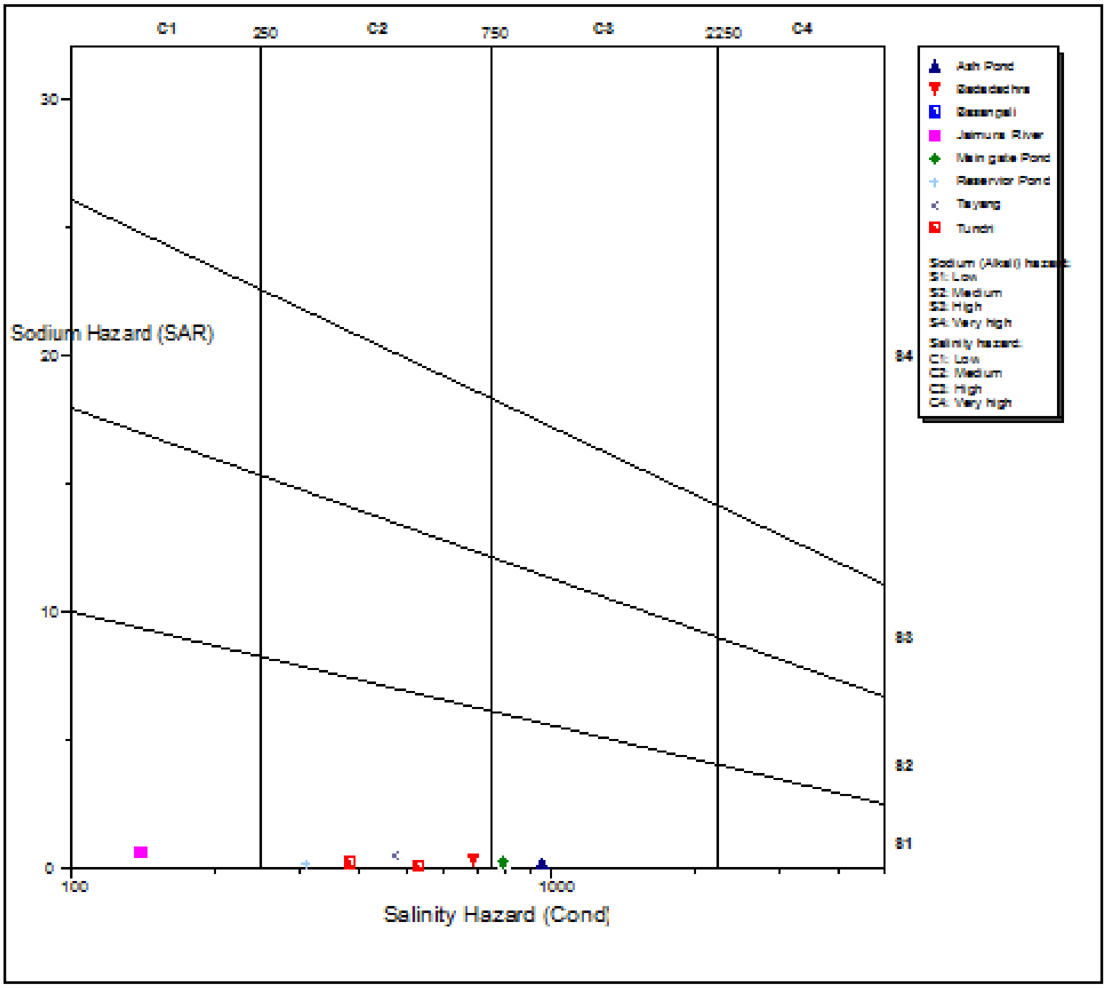


Fig 8.2 Wilcox Diagram

The Very High Salinity Water (C4) is not at all suitable for irrigation under ordinary conditions, but may be used occasionally if the soil is permeable by providing adequate drainage and irrigation water must be applied in excess to provide considerable leaching and very salt tolerant crops should be selected.

Based on above **table 8.5**, ground water samples are classified with respect to salinity and sodium hazard is presented in **Table 8.6.**

Table 8.6: Classification of ground water samples with respect to salinity and sodium hazards

Type of Classification	Characteristics	No. of samples falling	%
C1S1		2	25
C1S2			
C2S1	Medium salinity and low sodium water	4	50
C3S1	High salinity and low sodium water	2	25
C4S1	Very high salinity and low sodium water		
Total		**8**	**100**

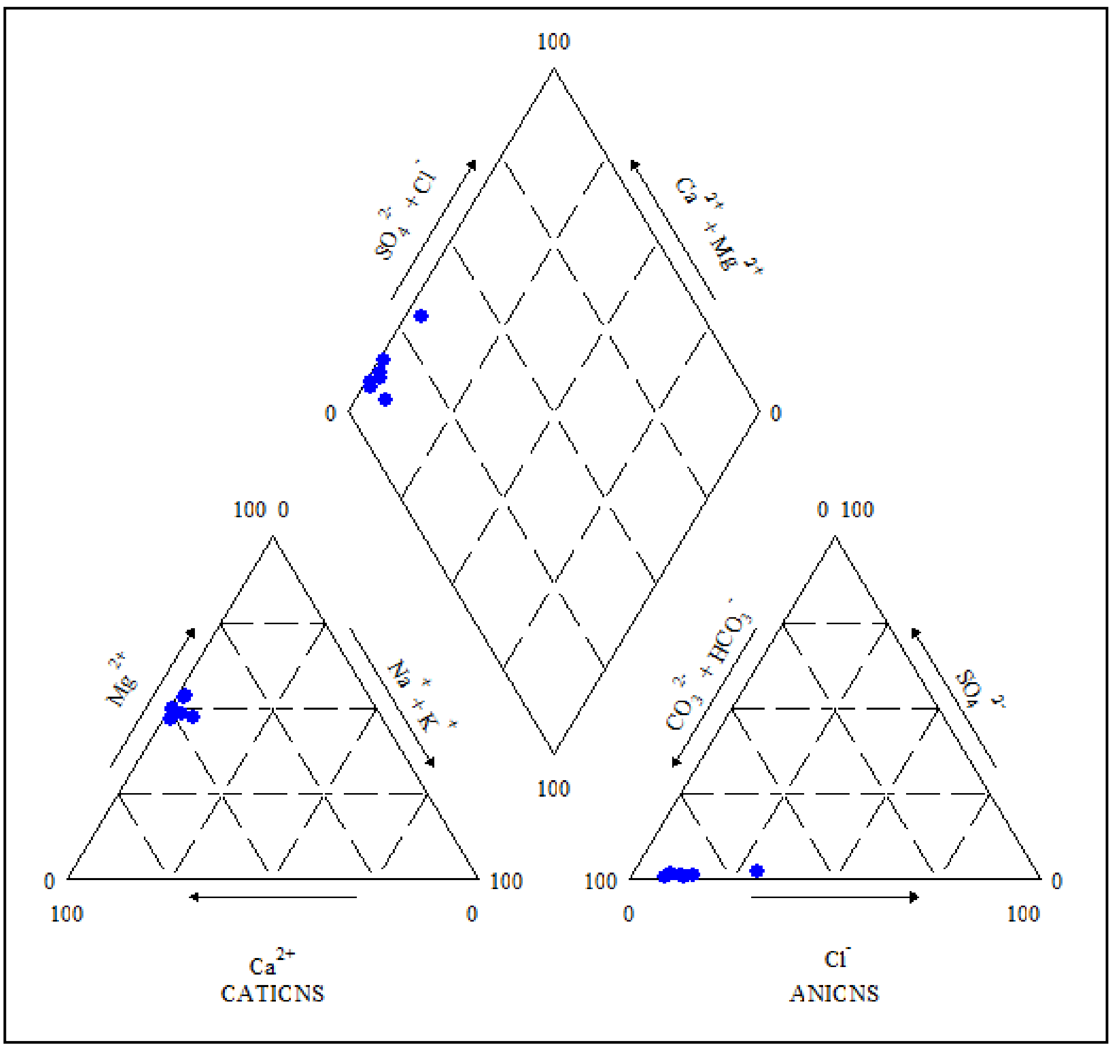


Fig 8.3: Trainer piper diagram

The iso-conductivity map of ground water has been prepared and presented as **Fig 8.4**. On perusal of the iso-conductivity, it is observed that the electrical conductivity for shallow Aquifer in study area ranges from 220 μMhos/cm (Jaimura river sample) to 780 μMhos/cm (Tayang and main gate Pond), the electrical conductivity for shallow aquifer is within Permissible Limit (750-2250 μMhos/cm @ 25°C) Fig **8.4.**

On perusal of the chloride content, it is observed that the chloride content of the study area ranges from 15.92 (Jai Mura river water) to 111.85 (Main gate pond surface water). Maximum study area chloride content is within 60 to 80 mg/l. **fig 8.5.**

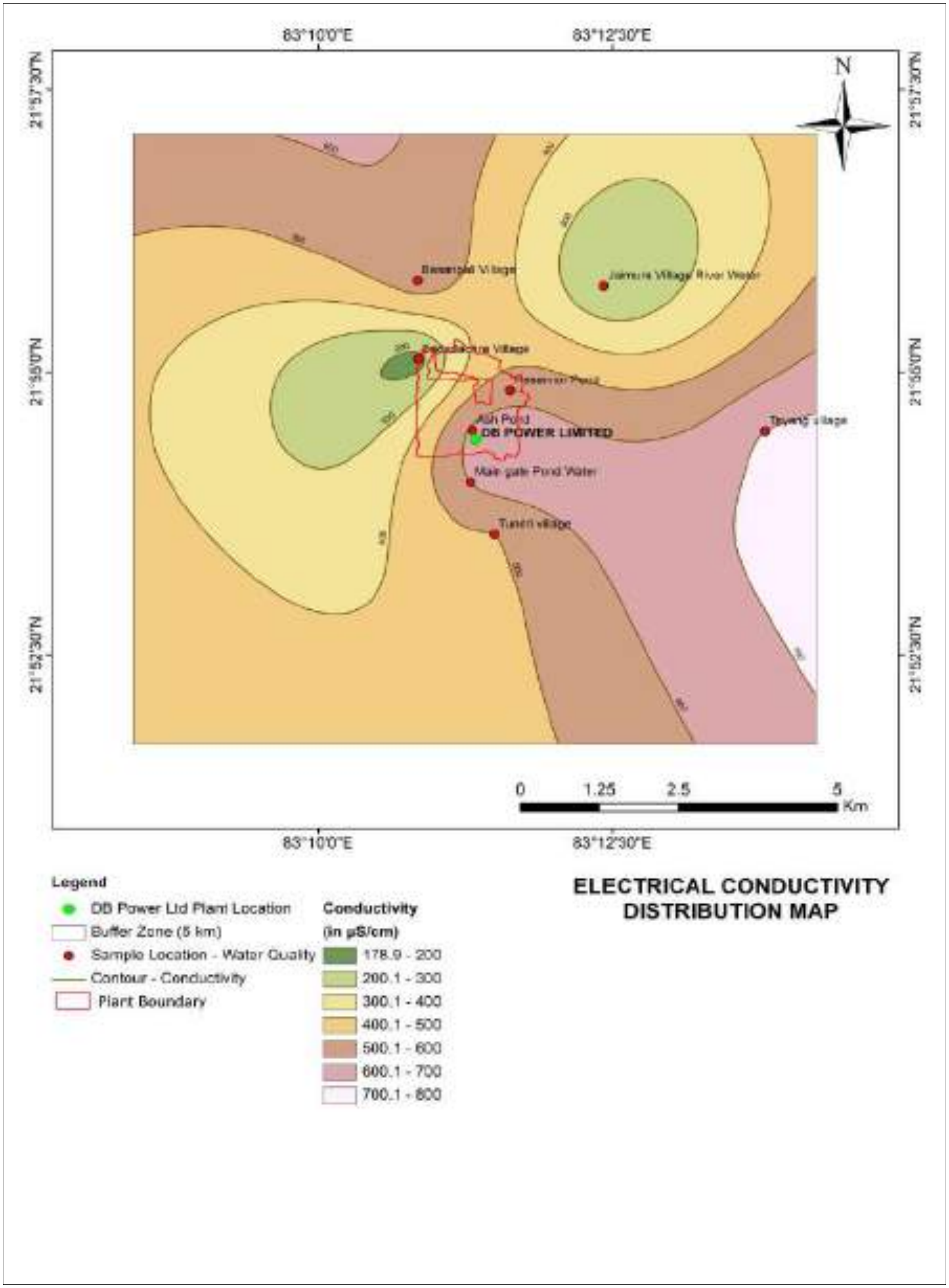


Fig 8.4: EC map of ground water

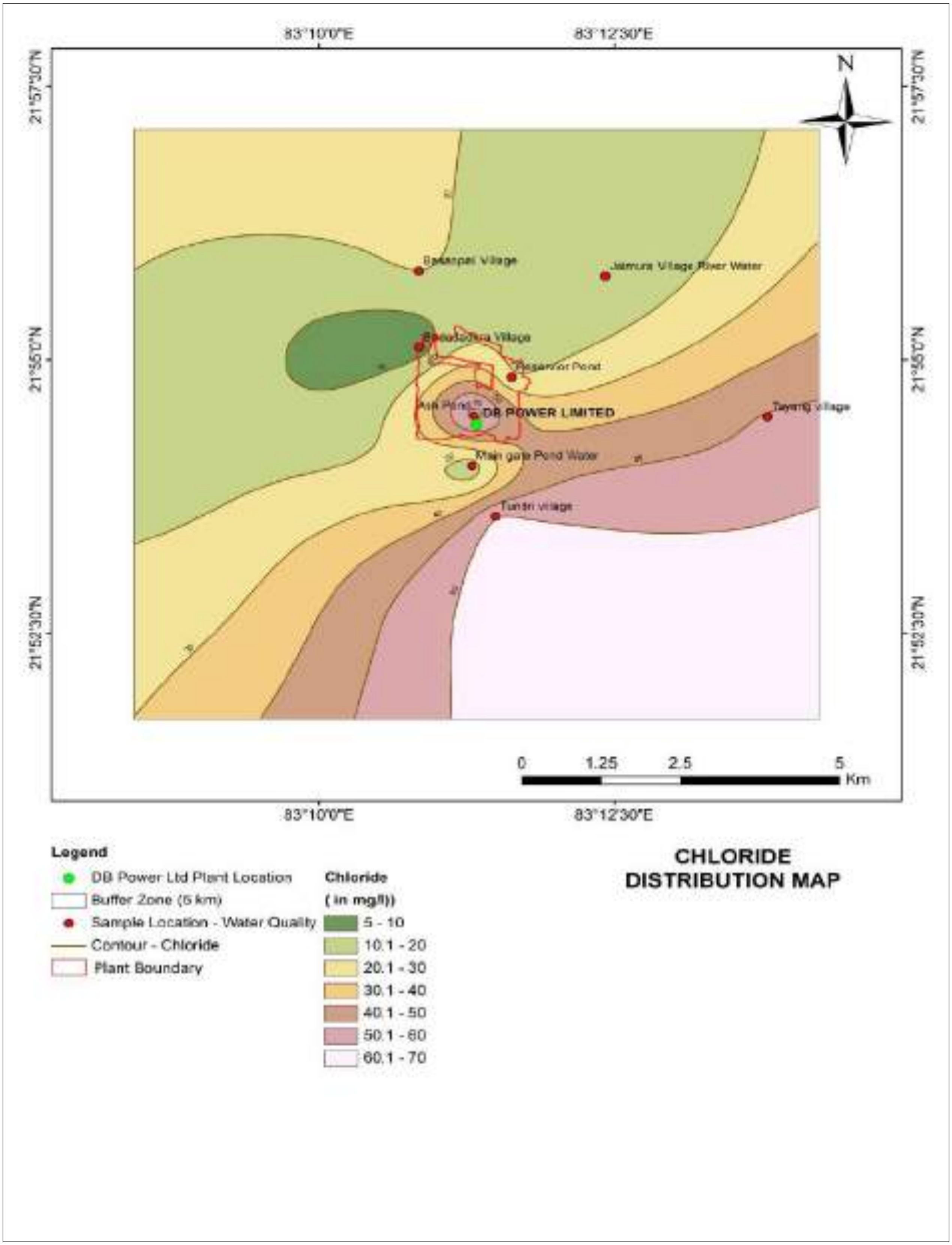
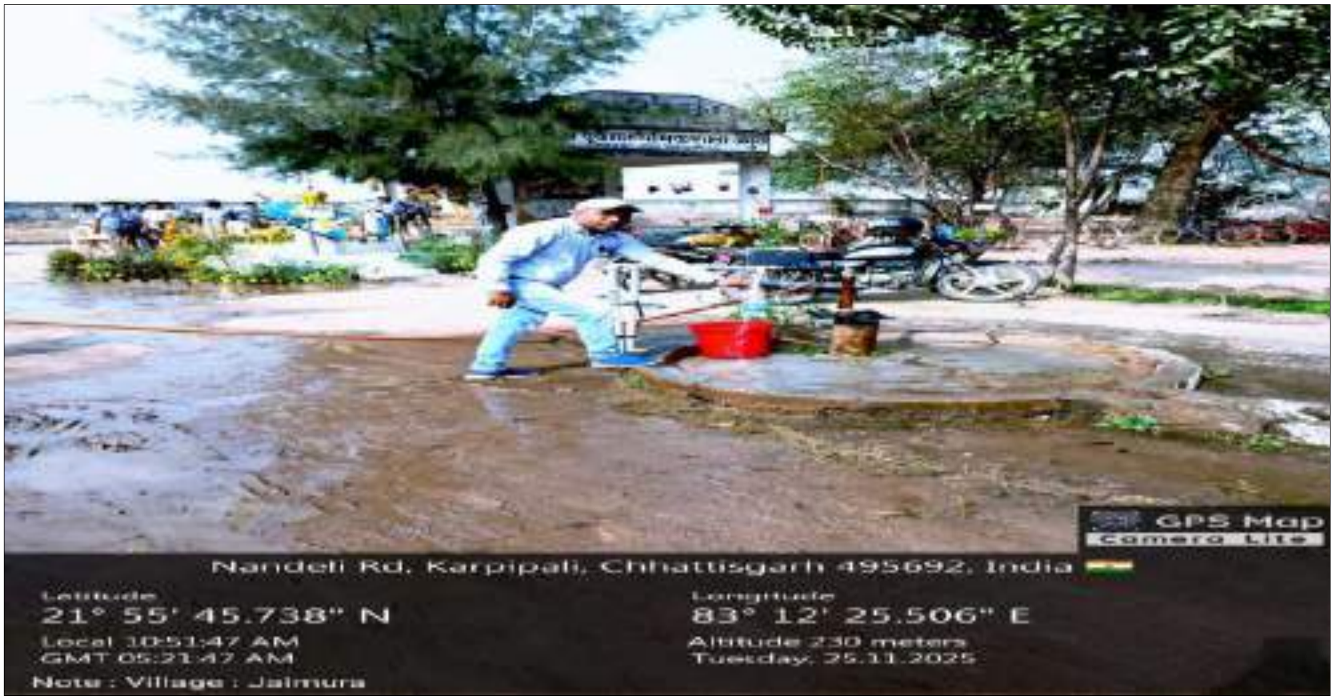


Fig 8.5: Chloride map of ground water

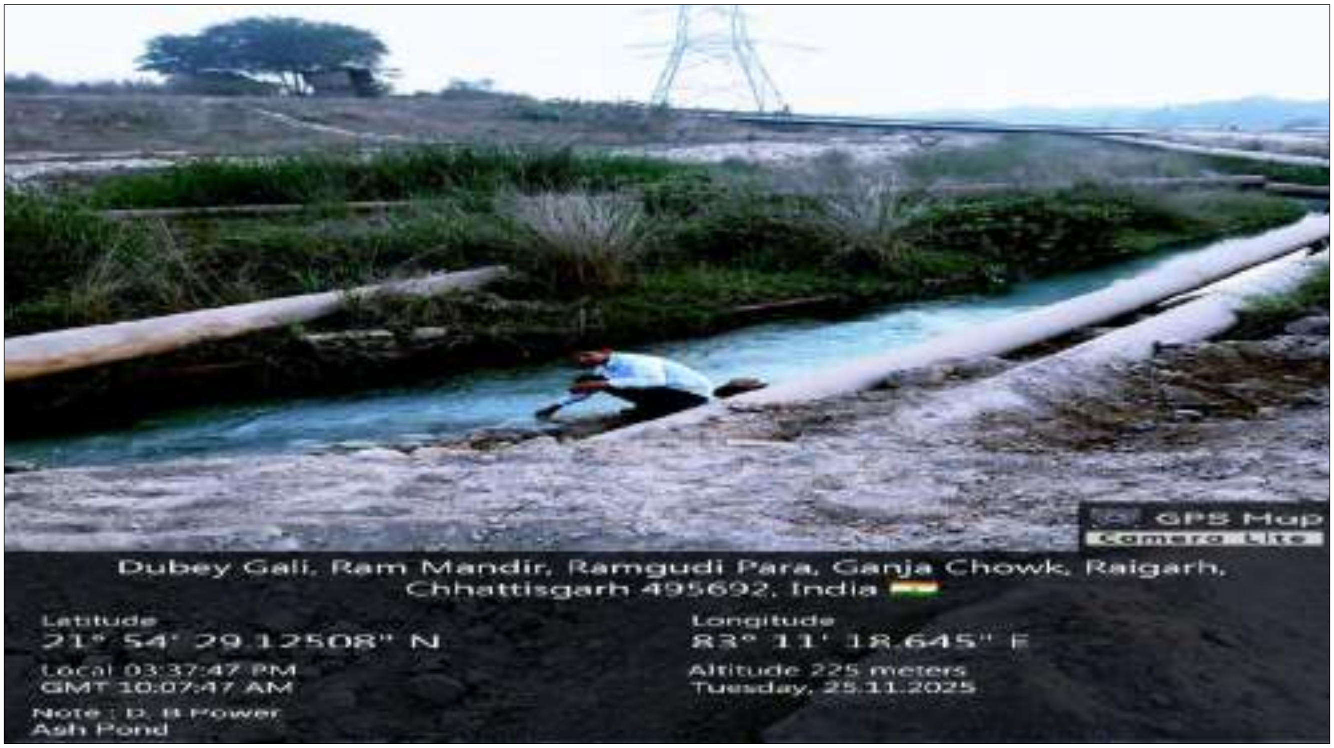

GPS Map Camera Lite
00, Raigarh, Tayang, Chhattisgarh 496661, India
Latitude
21° 54' 28.572" N
Local 10:35:43 AM
GMT 05:05:43 AM
Note : Village : Bayang
Longitude
83° 13' 47.958" E
Altitude 224 meters
Tuesday, 25.11.2025


GPS Map Camera Lite
Nandeli Rd, Karpipali, Chhattisgarh 495692, India
Latitude
21° 55' 45.738" N
Local 10:51:47 AM
GMT 05:21:47 AM
Longitude
83° 12' 25.506" E
Altitude 230 meters
Tuesday, 25.11.2025
Note : Village : Jaimura


GPS Map Camera Lite
W5WH+FGV, Phoolbandhia, Basnajhar, Chhattisgarh 496661, India
Latitude
21° 56' 50.37216" N
Local 11:29:49 AM
GMT 05:59:49 AM
Longitude
83° 10' 41.27088" E
Altitude 234 meters
Tuesday, 25.11.2025
Note : Village : Fulbandhia


GPS Map
Camera Lite
V5XP+CVX, Nandeli Rd, Tundri, Chhattisgarh 495692, India
Latitude
21° 54' 1.674" N
Local 02:36:16 PM
GMT 09:06:16 AM
Note : Village : Main Gate Pond
Longitude
83° 11' 17.706" E
Altitude 242 meters
Tuesday, 25.11.2025


GPS Map
Camera Lite
Nandeli Rd, Karpipali, Chhattisgarh 495692, India
Latitude
21° 54' 50.172" N
Local 03:28:42 PM
GMT 09:58:42 AM
Note : D. B Power
Reservoir
Longitude
83° 11' 37.842" E
Altitude 227 meters
Tuesday, 25.11.2025


GPS Map Camera Lite
Dubey Gali, Ram Mandir, Ramgudi Para, Ganja Chowk, Raigarh, Chhattisgarh 495692, India
Latitude
21° 54' 29.12508" N
Longitude
83° 11' 18.645" E
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GMT 10:07:47 AM
Altitude 225 meters
Tuesday, 25.11.2025
Note : D. B Power
Ash Pond

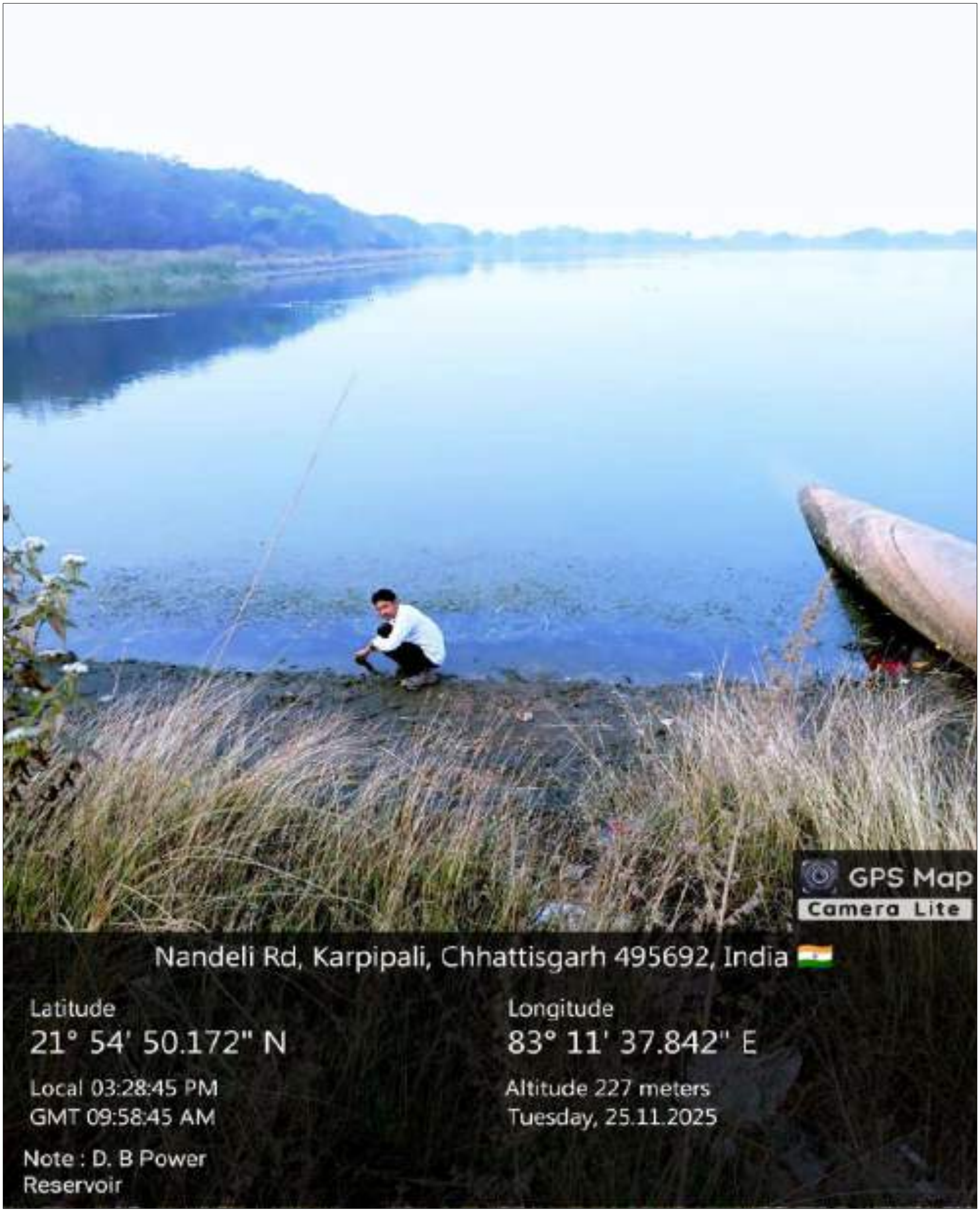

Fig 8.5: Water Sampling in Plant premises and buffer Zone of the Study Area

9. CONCLUSIONS & SUMMARY

DB Power Limited is a coal-based thermal power plant located at Village: Badadarha, Block: Dabhra, Shakti district in the state of Chhattisgarh. The plant has produced thermal power having capacity of 1200 MW (2*600 MW).

The area is drained by tributaries of Mand River. The project area is in the interfluves zone of Dantar Nala, Pathari Nala & Mand River.

The study area is characterized by flat undulating terrain with regional slope to the north-east and south west. The average elevation in the southern portion is around 280m while in the north is 275 mamsl. The average land slope of the area is works out about 4 per km from toposheets (1:50000scale), Survey of India.

Geo-morphologically the study area comes under Pediplain, Denudation Hills & Floods Plan. The Physiography of the basin is controlled by geological formations namely Sandstone and shale.

In the area, ground water occurs under phreatic or unconfined condition in weathered portion of rocks and semi-confined to confined conditions in fractures/cavernous part of rocks i.e. Sandstone & shale at depths.

The depth to water level map has been prepared based on ground water monitoring data of Nov 2025. On perusal of the data and map given at Fig.5.1, it is observed that the overall depth to water level remains between 2.10 to 11.56 meters below ground level. The post-monsoon depths to water level range of 4 to 8 mbgl are observed at Kenapali, Saraipali, Karpipali, amapali & Fulbandhia villages. Ground water levels more than 8 mbgl are observed in the villages Kanwali, Sondaka, Tayang and Jaimura Villages. Water level less than 4 mbgl are observed in the remaining parts of the study area.

The depth to water level map has been prepared based on ground water monitoring data of May 2025. From the perusal of Table 5.1, it is observed that the overall depth to water level remains between 3.20 to 13.28 meters below ground level. The pre-monsoon depth to water levels ranges Below 5 mbgl is observed in Dumerpali and Basanpali villages. Water levels are between 5 - 8 mbgl is observed in the villages namely Saraipali, Kenapali and Badadhara villages. Water level greater than 8 mbgl is observed in the remaining parts of the study area

Based on the pre-monsoon & post-monsoon data water level fluctuation in the study area it is observed that in the study area water level fluctuation varies from 0.96 to 4.38 meters.

While comparing mean pre-monsoon and Post Monsoon average water levels of 2024 with that of 2025 it is observed that more than 75-80 % of the study area ground water level decreased in both pre and post monsoon period for last two years.

The flow direction is of two directions i.e. in western, South and northern part of the study area it is towards East Direction and in central and east part of the study area it is towards North-East direction indicating the surface water divide in the central portion of the study area near to project area.

In the area the yield ranges between 2 to 5 lps in Central, Northern, sothern indicating the area is covered by Sandstone while in major part of the area it is 1-3 lps which is covered with shale.

The shallow aquifers of the area are mostly developed by way of dug wells in the area with depth ranges from 7 to 16 m. In general the yield of dug wells ranges from 25 to $40m^3$/day. Deeper aquifer in the area mainly formed of Raipur group of rocks constituted of Raigarh formation comprising Sandstone and shale.

The aquifer parameters of the study area covered by sandstone for deep aquifer the transmissivity values of phreatic aquifer tapped in open well in general varies from 4 to $8.5m^2$/day while specific capacity ranges from 15 to 40 lpm/m/day. However for deep aquifer the transmissivity ranges from 15-32 m^2/day and at places it ranges up to $40m^2$/day.

Total recharge potential of **1205322.67** cum of rainfall runoff can be harvested at feasible, viable and sustainable location annually, based on hydrogeological condition trench and recharge pits use for ground water artificial recharge. The plant is already constructed recharge trench & recharge reservoir to recharge the ground water of the study area.

The detailed chemical analysis for water samples drawn at seven locations of plant study area (Ash Dyke ponds, reservoir pond and various villages) for non-metallic ingredients like pH, Turbidity, TDS, TSS, CaCO3, Ca, Cl, Mg, SO4 & SiO2 and metallic ingredients like Nitrate, Fe, etc. were done in-2023.

From the chemical analysis of water it is observed that than 100 % of samples are suitable for drinking purposes.

It is observed that 100% of samples show SAR values below 10 and falling in the Low Sodium (alkali) Hazard Zone (S1). Such type of water can be used for irrigation on almost all soils with little danger of development of sodium exchangeable problem

The geochemical classification of ground water, of study area has been carried out by using Piper Diagrams the ground water is of Ca/Mg/Na-HCO_3 Cl type. The analysis of ground water samples collected from the area suggests that type of water in the major part is bicarbonate dominating type, The suitability of ground water of study area for irrigation purpose was considered on the basis of U. S Salinity diagram in which electrical conductivity value in μS/cm at 25°C upto 5000 μS/cm at 25°C is plotted on one axis and the SAR values upto 30 on the other. The electrical conductivity and the corresponding SAR & RSC values of each ground water sample collected from the study area.

It is observed that 100% of samples show SAR values below 10 and falling in the Low Sodium (alkali) Hazard Zone (S1). Such type of water can be used for irrigation on almost all soils with little danger of development of sodium exchangeable problem. Out of 8 samples collected from study area is having EC below 2250 μS/cm at 25°.

The High Salinity Water (C3) cannot be used on soils with poor drainage. Even with adequate drainage, special management for salinity control may be required and plants with good salt tolerance should be selected.

The Very High Salinity Water (C4) is not at all suitable for irrigation under ordinary conditions, but may be used occasionally if the soil is permeable by providing adequate drainage and irrigation water must be applied in excess to provide considerable leaching and very salt tolerant crops should be selected.

On perusal of the iso-conductivity, it is observed that the electrical conductivity for shallow Aquifer in study area ranges from 220 μMhos/cm (Jaimura river sample) to 780 μMhos/cm (main gate plant and Tayang), the electrical conductivity for shallow aquifer is within Permissible Limit (750-2250 μMhos/cm @ 25°C).

On perusal of the chloride content, it is observed that the chloride content of the study area ranges from 15.92 (Jai Mura river water) to 111.85 (Main gate pond surface water). Maximum study area chloride content is within 60 to 80 mg/l. **The present study reveals that there is no adverse impact of Ash Pond on ground water regime of the area both on water levels as well as water quality**.

Annexure-6

SOCIAL AUDIT REPORT

APRIL 2024 -MARCH 2025

Of

DB Power Limited

DB Power Ltd

Village: Badadarha

Block & Tehsil: Dabhra

Distt: Sakti

Chhattisgarh - 495695

Prepared By: Dr Vikram Singh

Associate Professor

Department of Social Work

Regional Campus Manipur

Indira Gandhi National Tribal University

(A Central University)

Amarkantak Madhya Pradesh-484887

19|2|2026

Dr. Vikram Singh

Department of Social Work

3.	Construction of a 10,000-litre capacity water tank at Beech Basti, Village Badadarha, to strengthen local water infrastructure	52
4.	Borewell drilling completed at Mahant Mohalla, Badadarha, ensuring reliable water supply for the community	52
5.	The boundary wall of the Government Primary School at Rampur and the backside boundary wall of the Government Higher Secondary School at Tundri	55
6.	The boundary wall of the Government Primary School at Amapali has been constructed to ensure a secure and well-defined school	56
7.	Bathing steps have been constructed at Santoshi Pond in Village Fulbandhia and at Chamrin Pond in Village Tundri	59
8.	Existing bathing steps at Dadu Pond in Village Badadarha have been repaired to improve safety and accessibility for the community	60
9.	The construction of cremation sheds has been completed in Villages Kunkuni and Khairpali to ensure a secure and dignified facility for conducting funeral rites	63
10.	A Hume pipe culvert has been constructed on the bypass road connecting Fulbandhiya to Khairpali.	65
11.	The bypass road connecting Fulbandhiya to Khairpali has been repaired and strengthened with murum to improve connectivity and ensure smoother transportation	65
12.	Cleaning and deepening work of Dadu Pond at Village Badadarha has been completed to enhance water storage capacity and improve overall water resource management	67
13.	An awareness programme on Energy Conservation was organised for students at the Government Higher Secondary School in Sondka	76
14.	An awareness programme on HIV and TB prevention was conducted at the DBPL Hospital to educate the community about disease prevention, early detection, and treatment options. A total of 41 individuals benefited from these initiatives	77
15.	Ambulance referral services have been provided to 395 individuals from the nearby plant-affected villages	78

16.	Regular water sprinkling is carried out on the main roads near the plant-affected villages. Additionally, the main roads are cleaned through routine brooming to maintain cleanliness and improve the surrounding environment.	80
17.	**A Beauty Parlour and Tailoring Training Centre is being operated in Village Badadarha to promote skill development and livelihood opportunities.**	88
18.	**The Tailoring Training Centre is being run in Village Tundri to enhance vocational skills and support income generation among residents.**	89
19. & 20.	**Certificates were awarded to 52 girls and women upon successful completion of Tailoring and Beauty Parlour training programmes conducted at the DBPL Skill Development Centre.**	91
21.& 22.	**Educational and stationery materials, such as Navodaya Guide and Practice Books, whiteboards, chalk, and dusters, were provided to 23 students enrolled at the DBPL Coaching Centre to support their preparation for the Jawahar Navodaya Vidyalaya Class 6 entrance examination.**	93
23. & 24.	**Self-Help Group (SHG) members in Villages Badadarha and Tundri are undertaking income-generating activities**	96
25.	**A total of 463 villagers participated in and benefited from the religious tour to Puri and Bhubaneswar, organised as part of the community welfare initiative**	103
26.	**Gift sets – including a refrigerator, steel almirah, dinner set, and gas stove – were provided to 22 girls (15 + 7) from plant-affected villages by the DBPL management on the occasion of their marriage**	105
27.	**Essential grocery supplies were facilitated for underprivileged families, and water tanker services were arranged to assist them in conducting social and community events.**	106

1. Introduction to DB Power Limited (DBPL)

DB Power Limited (DBPL) is a significant private-sector entity operating within India's energy sector. The company established a coal-based Super Thermal Power Plant (TPP) in the state of Chhattisgarh through a Special Purpose Vehicle (SPV) structure. Since its commissioning in 2015, the plant has played an important role in strengthening regional power infrastructure by supplying electricity under a mix of long-term and short-term Power Purchase Agreements (PPAs) to state-owned distribution companies, private utilities, and industrial consumers.

India's growing industrialisation and urbanisation have led to a steady increase in electricity demand. Thermal power, particularly coal-based generation, continues to form a major component of the country's energy mix despite increasing diversification into renewable energy sources. In this context, DBPL's 1200 MW plant—comprising two units of 600 MW each—contributes substantially to base-load power generation in central India. Its presence in a coal-rich region enhances fuel security and logistical efficiency.

The plant is located in the village of Badadarha, District Sakti, approximately 25 km from Raigarh. Its proximity to transportation networks—including road connectivity, a nearby railway station at Robertson (about 15 km away), and an airport in Raipur (approximately 250 km away)—facilitates operational efficiency and supply-chain coordination. The project reflects a strategic alignment between resource availability, infrastructure access, and regional development priorities.

1.1. Background and Incorporation

DB Power Limited was incorporated on October 12, 2006, as a subsidiary of Diligent Power Private Limited (DPPL), an associate entity of the Dainik Bhaskar Group.

The establishment of DBPL as an SPV was a strategic initiative designed to capitalise on the availability of coal resources in Chhattisgarh and contribute to India's expanding power generation capacity.

The SPV model allowed the parent organisation to isolate project-specific risks while ensuring operational specialisation and focused governance. The commissioning of the plant in 2015 marked a milestone in private-sector participation in India's thermal power expansion. Beyond energy generation, the plant has had multiplier effects on local employment, infrastructure development, and economic activity.

However, large-scale industrial projects also generate environmental and social externalities, including land acquisition challenges, displacement concerns, and ecological pressures. Recognising these impacts, DBPL has emphasised Corporate Social Responsibility (CSR) initiatives to mitigate adverse consequences and foster inclusive development.

1.2 Corporate Social Responsibility (CSR) at DBPL

Corporate Social Responsibility (CSR) has evolved from a philanthropic activity to a strategic business imperative. In India, CSR received legislative backing under Section 135 of the Companies Act, 2013, which mandates that certain companies allocate a portion of their profits to social development initiatives. DBPL aligns its CSR programs with both statutory requirements and broader ethical commitments.

CSR Focus Areas

a. Education

Education forms a core pillar of DBPL's CSR strategy. The company supports local schools by upgrading infrastructure, providing scholarships, distributing educational materials, and promoting digital literacy. Such initiatives contribute to human capital development and align with the understanding that education enhances long-term socio-economic mobility.

Carroll and Shabana (2010) argue that CSR initiatives in education create both societal and corporate value by improving community goodwill and strengthening stakeholder relationships. DBPL's interventions reflect this dual-benefit model.

b. Environmental Conservation

Operating a coal-based thermal power plant necessitates robust environmental safeguards. DBPL undertakes afforestation programs, pollution control measures, water conservation initiatives, and awareness campaigns on sustainable practices. These activities align with environmental management frameworks that seek to minimise ecological footprints while maintaining industrial productivity.

Environmental responsibility enhances corporate legitimacy and reduces reputational risks (Porter & Kramer, 2006). By integrating environmental stewardship into CSR, DBPL contributes to sustainable development objectives.

c. Community Development

DBPL engages with local communities through participatory consultations and need-based assessments. CSR interventions include healthcare camps, sanitation infrastructure, drinking water facilities, and support for local infrastructure development. Partnerships with NGOs and local authorities enable coordinated action. Community engagement reflects stakeholder theory, which posits that corporations must respond to the expectations of all stakeholders, not merely shareholders (Freeman, 1984). DBPL's participatory approach strengthens social license to operate.

d. Livelihood Enhancement

Skill development programs, vocational training, and entrepreneurship support initiatives aim to create sustainable livelihoods. These programs are particularly significant in plant-affected and railway-corridor-affected villages, where economic transitions may occur due to industrialisation.

Livelihood interventions contribute to inclusive growth and align with the Sustainable Development Goals (SDGs), particularly SDG 1 (No Poverty) and SDG 8 (Decent Work and Economic Growth).

2. Social Audit and Corporate Social Responsibility

2.1 Conceptual Foundations of CSR

Corporate Social Responsibility is defined as the voluntary integration of social and environmental concerns into business operations and stakeholder interactions (Carroll & Shabana, 2010). It encompasses economic, legal, ethical, and philanthropic responsibilities.

Porter and Kramer (2006) introduced the concept of "strategic CSR," emphasising that businesses can create shared value by aligning social initiatives with competitive advantage. CSR thus becomes not merely an obligation but a source of innovation and long-term sustainability.

However, CSR initiatives must be credible and measurable. Without accountability mechanisms, CSR risks becoming symbolic rather than substantive. This necessity gave rise to social auditing frameworks.

2.2 Emergence of Social Audit

A social audit is an independent and systematic evaluation of an organisation's social, economic, and environmental performance (Bendell, 2000). Unlike financial audits, social audits assess qualitative and participatory dimensions of organisational impact.

In India, social audits gained prominence following the 73rd Constitutional Amendment, which strengthened local self-governance through Panchayati Raj Institutions. Participatory oversight mechanisms became integral to democratic accountability (Paul, 2019).

Social audits promote transparency, citizen participation, and public accountability—principles critical in contexts involving large-scale industrial operations affecting local communities.

2.3 Principles and Objectives of Social Audit

Four core principles guide social audits:

1. **Transparency** – Ensuring open access to information.
2. **Participation** - Actively involving stakeholders, especially marginalised groups
3. **Accountability** - Holding organisations answerable for commitments.
4. **Learning and Improvement** – Using findings for institutional enhancement.

Gonella et al. (1998) emphasises that social audits bridge the gap between organisational vision and operational realities. They help measure, understand, report, and improve social performance.

2.4 Process of Social Auditing

The social audit of DBPL's CSR initiatives for FY 2024-2025 followed a structured methodology:

a. Planning and Scope Definition

The audit covered eight villages categorised into:

- Plant Affected Villages (PAVs)
- Railway Corridor Affected Villages (RCAVs)

Key CSR domains—education, environment, health, infrastructure, and livelihoods—were included.

b. Data Collection

Data sources included:

- CSR expenditure records
- Beneficiary surveys
- Focus group discussions
- Interviews with village leaders
- Public hearings

c. Stakeholder Engagement

Participatory consultations ensured inclusion of women, youth, marginalised groups, and local governance representatives. Public forums enhanced transparency.

d. Evaluation and Analysis

Quantitative and qualitative data were analysed to assess:

- Relevance of interventions
- Resource utilisation efficiency
- Beneficiary satisfaction
- Sustainability of outcomes

e. Reporting and Disclosure

Findings were compiled into a comprehensive report shared with stakeholders to promote accountability.

f. Action and Follow-up

Recommendations were provided to enhance impact, with mechanisms for monitoring progress in subsequent years (Estes, 1976).

3. Social Audit of CSR (FY 2024-2025)

The social audit evaluated CSR initiatives across eight villages affected by plant operations and railway infrastructure development.

Key Observations

1. **Education Programs**
   Infrastructure improvements and scholarship distribution were widely appreciated. However, stakeholders recommended greater emphasis on digital learning tools.

2. **Healthcare Initiatives**
   Medical camps and sanitation programs improved access to primary healthcare services. Regular health monitoring was suggested for sustained impact.

3. **Environmental Measures**
   Afforestation and pollution control initiatives were visible, but community members emphasised the need for continued environmental monitoring.

4. **Livelihood Programs**
   Skill development initiatives enhanced employability among youth. Expansion into women-centric entrepreneurship programs was recommended.

5. **Community Infrastructure**
   Drinking water facilities and road improvements significantly benefited daily life. Maintenance mechanisms need strengthening.

Overall, the audit revealed a positive perception of DBPL's CSR initiatives while identifying areas for improvement in documentation, sustainability planning, and stakeholder feedback integration.

4. Future of Social Audits and CSR

Technological innovations such as blockchain and digital platforms can enhance transparency and data reliability in social audits (Kshetri, 2017). Digital dashboards and community-based monitoring systems may improve participatory oversight.

Furthermore, aligning CSR initiatives with the United Nations Sustainable Development Goals strengthens global accountability frameworks (Scheyvens et al., 2016). Social audits can measure contributions toward SDG indicators, enhancing strategic alignment.

As ecological and social challenges intensify, corporations must integrate responsible governance into their core strategy. Social audits will remain indispensable tools for ensuring credibility, transparency, and sustainable impact.

DB Power Limited has established itself as a significant contributor to India's energy sector while demonstrating commitment to social responsibility. Its CSR initiatives across plant-affected and railway-corridor-affected villages reflect a structured and participatory approach to community development.

The social audit of FY 2024–2025 underscores the importance of transparency, stakeholder engagement, and continuous improvement. By integrating robust social auditing mechanisms with strategic CSR planning, DBPL strengthens its role as a responsible corporate citizen. Sustainable industrial development requires balancing economic growth with social equity and environmental stewardship. Social audits bridge this balance by translating corporate commitments into measurable outcomes. As CSR continues to evolve, organisations that embrace accountability and participatory governance will be better positioned to contribute meaningfully to inclusive and sustainable development

5.0 Objectives of the Social Audit of CSR Initiatives (FY 2024–2025)

The social audit of Corporate Social Responsibility (CSR) initiatives undertaken by DB Power Limited during the financial year 2024–2025 was designed as a participatory and evidence-based assessment of development interventions carried out in plant-affected and railway corridor-affected villages in Chhattisgarh. Social audits, as instruments of democratic accountability and participatory governance, aim to bridge the gap between institutional commitments and community-level realities (Bendell, 2000; Paul, 2019). The present audit framework was structured around clearly defined objectives to evaluate the relevance, efficiency, inclusiveness, and sustainability of CSR initiatives.

Table 1: Plant-Affected Villages (PAVs)

S. No	Name of Village
1	Badadarha
2	Tundri

Table 2: Railway Corridor-Affected Villages (RCAVs)

S. No	Name of Village
1	Basanpali
2	Phulbadhiya
3	Amapali
4	Khedapali
5	Bendojahriya
6	Kunkuni

These eight villages were categorised based on the nature of project exposure – direct plant-related impacts and railway infrastructure-related impacts. The objectives of the social audit were aligned with participatory development theory, stakeholder theory (Freeman, 1984), and strategic CSR frameworks (Porter & Kramer, 2006).

a. Assessing the Actual Needs of Village Development and Resources Provided by DB Power

The first and foundational objective of the social audit was to evaluate the genuine developmental needs of the village communities and compare them with the resources provided under CSR interventions. Development planning that does not incorporate community voice risks misalignment between supply and demand (Chambers, 1994). Therefore, this objective required a detailed socio-economic profiling of each village.

The audit examined demographic composition, occupational patterns, literacy levels, health indicators, infrastructure access, and livelihood vulnerabilities. This assessment helped determine priority sectors such as drinking water, road connectivity, sanitation, skill development, women's empowerment, and environmental sustainability.

Simultaneously, CSR resource allocation was reviewed in terms of financial outlay, project design, and implementation strategies. The analysis sought to determine whether CSR investments addressed core community concerns or reflected top-down planning biases. The objective was not merely to evaluate expenditure but to assess developmental relevance and sustainability.

By identifying gaps between needs and provisions, the audit contributed to improving allocative efficiency and ensuring that CSR funds generate maximum social returns (Carroll & Shabana, 2010).

b. Providing Suggestions to Enhance Efficacy and Effectiveness

The second objective focused on strengthening program implementation. Effectiveness in CSR requires both operational efficiency and long-term impact (Porter & Kramer, 2006). Through stakeholder consultations, the audit identified areas where program strategies could be refined.

Recommendations included:

- Enhanced monitoring mechanisms
- Strengthened grievance redressal systems
- Greater involvement of Panchayati Raj Institutions
- Adoption of digital tools for tracking progress
- Increased focus on women-centric livelihood models

This objective emphasised learning and continuous improvement, aligning with the principle that social audits are not punitive but developmental (Gonella et al., 1998).

c. Stakeholder-Centric Analysis of Development Work

Stakeholder engagement is central to modern CSR governance. Freeman's (1984) stakeholder theory highlights that corporations must consider the interests of all affected parties. The audit evaluated development initiatives through the perspectives of villagers, local leaders, women's groups, youth, and vulnerable populations.

Special attention was given to marginalised groups, including landless labourers, Scheduled Castes, and women-headed households. By centring village voices, the audit ensured inclusiveness and legitimacy. This objective contributed to building trust between the corporation and communities, reinforcing the company's social license to operate.

d. Assessing Infrastructural Development and Quality of Life

Infrastructure plays a pivotal role in rural transformation. Roads, electricity, water supply, sanitation, and community buildings directly affect quality of life and economic opportunities (World Bank, 2018).

The audit evaluated:

- Accessibility and reliability of drinking water
- Road connectivity improvements
- Sanitation infrastructure and waste management
- Electrification and public lighting
- Community centres and educational infrastructure

The analysis considered not only physical availability but also usability, maintenance, and inclusivity. Improved infrastructure was linked to outcomes such as better school attendance, improved health indicators, and increased income-generation potential.

e. Assessing Physical and Financial Gaps

A crucial objective was to identify discrepancies between developmental needs and resource availability. Physical gaps included shortages in infrastructure, manpower, and technology. Financial gaps related to insufficient funding or delayed disbursement. Gap analysis provided an evidence base for prioritization and resource reallocation. By mapping needs against CSR budgets, the audit highlighted areas requiring additional investment or improved efficiency. This aligns with accountability frameworks emphasizing transparency in resource utilization (Bendell, 2000).

f. Creating Awareness Among Beneficiaries and Service Providers

Awareness-building is integral to participatory governance. Villagers must understand their entitlements and available services to engage effectively (Paul, 2019).

Simultaneously, service providers must remain informed about community expectations.

The audit process included awareness sessions on:

- CSR entitlements
- Health and sanitation practices
- Skill development opportunities
- Environmental protection

Empowered communities are better positioned to demand accountability and ensure the sustainability of interventions.

g. Increasing Efficacy of Local Development Programs

Continuous improvement was embedded as a core audit objective. By identifying best practices and systemic bottlenecks, the audit aimed to enhance program impact. Learning loops – where feedback informs redesign – were emphasised.

Adoption of innovative approaches such as public dashboards, participatory monitoring committees, and convergence with government schemes was suggested. This objective aligns with adaptive governance frameworks in development practice (Estes, 1976).

h. Scrutiny of Policy Decisions from the Perspective of the Rural Poor

Policy decisions influence the distribution of benefits and burdens. The audit critically examined whether CSR and related policies adequately addressed the needs of rural poor households.

Special attention was given to:

- Inclusion of women and marginalised groups
- Equity in benefit distribution
- Accessibility of grievance mechanisms

- Fair compensation and rehabilitation concerns

This objective is aligned with principles of social justice and inclusive development.

i. Estimating Opportunity Costs Due to Service Delays

Delays in accessing services can impose economic and social costs. For example, inadequate healthcare access may result in lost wages, while poor road connectivity may limit market access.

The audit estimated opportunity costs by analysing:

- Income loss due to delayed infrastructure
- Educational disruptions
- Health-related economic burdens

By quantifying these costs, the audit underscored the urgency of timely service delivery and responsive governance.

6.0 Methods Used for Social Audit

The methodology adopted for the social audit was comprehensive, participatory, and multi-method in design. It incorporated quantitative and qualitative tools to ensure reliability and inclusiveness (Chambers, 1994).

I. Preliminary Surveys

Structured questionnaires were administered across all eight villages. Data collected included demographic profiles, income levels, occupation patterns, education access, healthcare availability, and environmental concerns.

Door-to-door surveys ensured inclusivity and trust-building. Baseline data enabled comparative analysis and identification of priority needs.

II. Personal Interviews

Semi-structured interviews were conducted with:

- Village leaders
- Women's self-help group members
- Youth representatives
- CSR officials
- School teachers and health workers

Key themes explored included livelihood impacts, quality of life changes, community engagement, and environmental perceptions.

Qualitative narratives enriched understanding beyond statistical indicators.

III. Focus Group Discussions (FGDs)

Separate FGDs were conducted for women, youth, and SHGs to ensure safe spaces for dialogue. Discussions focused on empowerment, capacity-building needs, project outcomes, and unmet priorities.

FGDs facilitated collective reflection and identification of shared concerns, enhancing participatory validity.

IV. Community Meetings

Community-wide meetings were organized to present preliminary findings and invite validation. This step strengthened transparency and accountability.

Activities included:

- Presentation of key findings
- Open discussion and feedback
- Collaborative action planning
- Commitment to follow-up

Such participatory dissemination aligns with democratic governance principles and reinforces ownership (Paul, 2019).

The social audit of CSR initiatives in plant-affected and railway corridor-affected villages demonstrated the importance of participatory evaluation in strengthening corporate accountability. By combining need assessment, stakeholder engagement, gap analysis, and action-oriented recommendations, the audit provided a comprehensive evaluation of development interventions. The methodology ensured inclusivity, transparency, and responsiveness – core pillars of effective social auditing (Bendell, 2000). Through structured objectives and participatory tools, the audit not only assessed performance but also empowered communities to engage actively in shaping their development trajectory.

As CSR continues to evolve within India's regulatory and ethical landscape, robust social audit mechanisms remain indispensable for translating corporate commitments into measurable and equitable outcomes.

7.0 Sources of Data for Social Audit

A social audit is a structured and participatory mechanism for evaluating an organisation's social, ethical, and environmental performance. Unlike financial audits, which primarily assess fiscal accuracy, social audits focus on accountability, transparency, and responsiveness to stakeholders (Bendell, 2000). In the context of Corporate Social Responsibility (CSR), social audits help determine whether corporate commitments translate into measurable and equitable outcomes at the community level.

For the social audit of DB Power Limited in FY 2024-2025, a mixed-methods approach was adopted, integrating primary and secondary data sources. The integration of these data streams enabled triangulation, strengthened reliability, and enhanced the credibility of findings. The villages included in the audit comprised two Plant Affected Villages (Badadarha and Tundri) and six Railway Corridor Affected Villages (Basanpali, Phulbadhiya, Amapali, Khedapali, Bendojahriya, and Kumkuni), all located in Chhattisgarh.

The use of diverse data sources aligns with participatory rural appraisal principles (Chambers, 1994) and stakeholder-based evaluation frameworks (Freeman, 1984), ensuring that both institutional documentation and lived experiences inform the audit process.

I. Primary Data Sources

Primary data refers to firsthand information collected directly from stakeholders and project sites. In social audits, primary data plays a vital role in capturing perceptions, experiences, and community realities that may not be fully reflected in official records. It provides qualitative depth and contextual understanding, which are essential for evaluating the real impact of CSR initiatives (Gonella et al., 1998).

a. Interviews and Surveys

Structured surveys and semi-structured interviews were conducted among:

- Beneficiaries of CSR programs
- Village leaders and Panchayat representatives
- Women's self-help group (SHG) members
- Youth and skill training participants
- School teachers and healthcare workers
- CSR officials and project coordinators

Surveys generated quantitative data on income levels, employment status, access to services, educational attainment, and awareness of CSR initiatives. Interviews, on the other hand, provided qualitative insights into lived experiences, satisfaction levels, and perceived gaps.

For example, respondents discussed improvements in road infrastructure, access to drinking water, and participation in livelihood programs. At the same time, some stakeholders highlighted challenges related to maintenance of infrastructure or limited coverage of certain schemes.

The combination of surveys and interviews aligns with mixed-method research principles, enabling auditors to validate statistical findings with experiential evidence (Creswell & Plano Clark, 2018).

b. Focus Group Discussions (FGDs)

Focus Group Discussions were conducted separately for:

- Women beneficiaries
- Youth groups
- Farmers
- SHG members
- Railway corridor-affected households

FGDs encourage collective dialogue and help uncover shared concerns or divergent viewpoints that may not emerge in individual interviews (Morgan, 1997). In this audit, FGDs revealed:

- Increased awareness about sanitation and hygiene practices
- Improved confidence among women engaged in skill development programs
- Concerns about environmental issues such as dust pollution
- Suggestions for expanding digital literacy initiatives

By facilitating group reflection, FGDs enhanced participatory accountability and strengthened community voice in the audit process.

c. Direct Observations

Direct field observations were conducted at:

- School infrastructure sites
- Drinking water facilities
- Road construction and repair locations

- Community centers
- Skill development and sewing centers

Observational methods allowed auditors to verify physical assets and assess functionality, accessibility, and maintenance status. For example, while records indicated installation of water tanks, field visits confirmed whether the tanks were operational and equitably accessible.

Observation is particularly important in social audits because it reduces reliance on self-reported data and strengthens evidence-based assessment (Estes, 1976).

II. Secondary Data Sources

Secondary data comprises pre-existing documentation and records maintained by the organization or regulatory authorities. In CSR evaluation, secondary data provides structured, quantitative evidence of commitments, expenditures, and performance metrics. For the audit of DB Power Limited, key secondary data sources included:

a. Stock Records

Stock registers documented materials procured and utilised for CSR projects, such as construction materials, educational supplies, medical equipment, and vocational training kits.

Analyzing stock records allowed auditors to assess:

- Resource allocation efficiency
- Environmental impact of material consumption
- Inventory management practices

Resource efficiency is closely linked to sustainable business practices and environmental responsibility (Porter & Kramer, 2006). Discrepancies between procurement records and on-site observations were cross-verified to ensure transparency.

b. Meeting Registers

Meeting registers provided documentation of:

- CSR committee meetings
- Community consultation sessions
- Stakeholder engagement forums
- Board-level discussions on CSR budgeting

These records revealed the decision-making process, frequency of stakeholder consultations, and extent of community participation in project planning. Transparent documentation of meetings strengthens governance accountability (Bendell, 2000).

c. Quarterly and Monthly CSR Reports

CSR reports contained:

- Financial expenditure details
- Activity-wise performance indicators
- Beneficiary numbers
- Photographic documentation
- Monitoring and evaluation summaries

These reports helped evaluate alignment with statutory requirements under the Companies Act, 2013, and CSR guidelines issued by the Department of Public Enterprises, Government of India.

Comparing report claims with primary data findings ensured triangulation and minimised reporting bias.

8.0. Integration of Primary and Secondary Data

The integration of both data sources allowed for triangulation—a process of cross-verifying information from multiple perspectives (Creswell & Plano Clark, 2018). For instance:

- Beneficiary satisfaction data (primary) was compared with CSR expenditure reports (secondary).
- Infrastructure functionality (observational) was cross-checked against stock and procurement records.
- Community consultation claims were verified against meeting registers.

This comprehensive approach enhanced the validity, reliability, and transparency of the audit findings.

9.0 Major Thrust Areas of CSR at DB Power Limited

Corporate Social Responsibility at DB Power Limited extends beyond statutory compliance. It reflects a commitment to inclusive development and sustainable community engagement in plant-affected and railway corridor villages in Chhattisgarh.

CSR philosophy at DB Power aligns with the broader conceptualisation of CSR as a multi-dimensional responsibility encompassing economic, legal, ethical, and philanthropic components (Carroll & Shabana, 2010). The company's CSR initiatives during FY 2023-2024 were implemented in collaboration with village communities, district administration, and local governance institutions. The major thrust areas include:

1. Rural Infrastructure Development

Infrastructure development remains a central pillar of DB Power's CSR strategy. Infrastructure improvements have multiplier effects on education, health, mobility, and economic productivity (World Bank, 2018).

Key initiatives included:

- Construction and repair of village roads
- Installation of solar street lights
- Drinking water supply systems
- Community halls and public utility buildings
- Sanitation infrastructure

Improved road connectivity reduced travel time to markets, schools, and health facilities. Water infrastructure enhanced access to safe drinking water, reducing disease incidence. The social audit found that infrastructure projects were among the most visible and appreciated interventions. However, maintenance mechanisms require further strengthening to ensure long-term sustainability.

2. Education and Skill Development

Education is widely recognised as a driver of human development and social mobility (UNESCO, 2015). DB Power's CSR initiatives in education included:

- School infrastructure upgrades
- Distribution of educational materials
- Scholarships for meritorious students
- Digital literacy programs
- Skill development and vocational training

Skill development initiatives focused on youth employability, including tailoring, electrical work, and computer literacy. Women beneficiaries reported increased self-confidence and financial contribution to household income. The audit highlighted the need for scaling up digital education initiatives and linking vocational training to market demand for sustainable livelihood outcomes.

3. Health and Sanitation

Health interventions included:

- Free medical camps
- Distribution of medicines
- Health awareness campaigns
- Support for sanitation infrastructure

Health camps improved access to primary healthcare in villages where public health facilities were limited. Awareness campaigns addressed maternal health, hygiene, and nutrition. The audit emphasised the importance of periodic health monitoring and collaboration with government health schemes to ensure continuity.

4. Women's Empowerment

Women's empowerment formed a significant thrust area. Initiatives included:

- Formation and strengthening of Self-Help Groups (SHGs)
- Skill training for income generation
- Financial literacy programs
- Sewing centres and microenterprise support

Empowering women enhances community resilience and social equity (Kabeer, 1999). Women participants reported increased decision-making power within households and improved social participation. However, the audit recommended expanding access to micro-credit linkages and market integration for SHG products.

5. Livelihood Enhancement and Social Welfare

Livelihood programs targeted marginalised households and unemployed youth. These initiatives aimed to reduce economic vulnerability and dependency. Programs included:

- Agricultural support initiatives
- Entrepreneurship training
- Equipment distribution
- Employment facilitation

Livelihood diversification is critical in regions affected by industrialisation, where traditional occupations may decline.

6. Environmental Sustainability

As a coal-based power plant operator, DB Power undertook environmental initiatives such as:

- Tree plantation drives
- Dust suppression measures
- Awareness programs on waste management

These efforts align with sustainable development frameworks emphasising ecological balance (Scheyvens et al., 2016). Community feedback suggested continued monitoring and expansion of green initiatives.

The social audit of DB Power Limited's CSR initiatives demonstrates a structured and participatory approach to development in plant-affected and railway corridor villages. By integrating primary and secondary data sources, the audit ensured transparency, accountability, and stakeholder engagement.

The major thrust areas—rural infrastructure, education, health, women empowerment, livelihood enhancement, and environmental sustainability—reflect a holistic development model. While significant progress has been achieved, continuous monitoring, improved maintenance systems, and enhanced community participation are essential for sustaining impact. CSR, when implemented strategically and evaluated through robust social audits, can catalyse inclusive and sustainable rural development.

A. Rural Infrastructure Programme

Corporate Social Responsibility (CSR) in the infrastructure domain plays a transformative role in rural development, particularly in regions experiencing industrial expansion. In the case of DB Power Limited, the Rural Infrastructure Programme has emerged as one of the most significant thrust areas of CSR interventions in plant-affected and railway corridor villages in Chhattisgarh. Infrastructure development is widely recognised as a catalyst for socio-economic transformation, enhancing productivity, improving quality of life, and fostering inclusive growth (World Bank, 2018).

Infrastructure, in development discourse, is not merely about physical assets; it represents a foundation for human development and social mobility. Roads, water supply systems, electrification, and community buildings are essential enablers of access to education, healthcare, markets, and public services. CSR-led infrastructure development complements state initiatives and often addresses localised gaps that may not be immediately covered by public schemes.

1. Road Connectivity and Transportation

One of the central initiatives under the Rural Infrastructure Programme has been the construction and maintenance of rural roads. Improved connectivity reduces travel time, enhances market access for agricultural produce, and facilitates mobility for education and healthcare services. According to development economics literature, rural road connectivity significantly influences income generation and poverty reduction by linking communities to broader economic networks (Porter & Kramer, 2006).

In the plant-affected villages such as Badadarha and Tundri, road infrastructure has improved access to nearby towns, enabling villagers to transport goods more efficiently and seek employment opportunities beyond local boundaries. Similarly, railway corridor villages such as Basanpali and Kunkuni have benefited from improved feeder roads connecting them to transport hubs. The social audit findings indicate that improved roads have:

- Reduced transportation costs for farmers
- Increased school attendance rates
- Improved emergency medical access
- Facilitated small-scale trade and entrepreneurship

However, sustainable infrastructure requires maintenance mechanisms and community participation to ensure long-term usability. Public-private collaboration in maintaining rural roads enhances both durability and accountability (Bendell, 2000).

2. Water Supply and Sanitation Infrastructure

Access to clean water and sanitation is central to public health and human dignity. The World Health Organization has consistently emphasized that safe drinking water and sanitation facilities significantly reduce water-borne diseases and improve life expectancy (WHO, 2019).

Under its CSR initiatives, DB Power Limited has implemented:

- Installation of potable water systems
- Construction of hand pumps and overhead tanks
- Support for household and community toilets
- Hygiene awareness campaigns

These interventions align with Sustainable Development Goal 6 (Clean Water and Sanitation) and reflect the broader CSR principle of ethical responsibility toward community well-being (Carroll & Shabana, 2010).

Social audit observations revealed measurable reductions in water-borne illnesses such as diarrheal infections and seasonal gastrointestinal diseases. Women beneficiaries reported reduced drudgery associated with fetching water from distant sources, thereby increasing time available for income-generating activities or education. Nevertheless, infrastructure sustainability depends on community ownership and technical maintenance. The audit recommended training local water committees to oversee maintenance and ensure equitable access.

3. Electrification Initiatives

Electrification is a cornerstone of rural transformation. Access to reliable electricity enhances educational outcomes, facilitates small businesses, improves household safety, and strengthens digital connectivity (International Energy Agency, 2020).

DB Power Limited has undertaken electrification projects aimed at:

- Providing electricity connections in underserved areas
- Installing solar street lights
- Supporting electrification of schools and community centres

Electricity availability has contributed to:

- Extended study hours for students
- Improved household security
- Growth of microenterprises such as tailoring units and small retail shops

The social audit found that electrification initiatives had a multiplier effect on socio-economic development, particularly among youth engaged in vocational training programs.

However, ensuring reliability and addressing voltage fluctuations remain critical for sustaining impact. Continuous monitoring and coordination with local electricity boards are necessary to maximise benefits.

4. Community Centres and Public Spaces

Community centres constructed under the CSR program serve as multipurpose hubs for:

- Skill development workshops
- Cultural and social events
- Health camps
- Community meetings

Community infrastructure fosters social cohesion and strengthens participatory governance (Freeman, 1984). By providing spaces for dialogue and collective action, DB Power Limited has contributed to strengthening social capital within affected villages.

The social audit highlighted that these centers have become focal points for women's self-help groups (SHGs), youth meetings, and awareness campaigns, thereby enhancing community engagement.

Impact of Rural Infrastructure Programme

The cumulative impact of the Rural Infrastructure Programme has been transformative. Improved infrastructure has:

- Stimulated economic activity
- Reduced health vulnerabilities
- Enhanced educational participation
- Strengthened community solidarity

Infrastructure investments reflect the strategic CSR perspective that long-term community well-being enhances corporate legitimacy and social license to operate (Porter & Kramer, 2006). However, continuous evaluation, participatory planning, and maintenance mechanisms are essential for sustaining gains.

B. Education and Skill Development

Education and skill development are central to human capability expansion and sustainable development. Amartya Sen's capability approach underscores the importance of expanding individual freedoms and opportunities through education (Sen, 1999). Recognizing this, DB Power Limited has prioritized education and skill development as core components of its CSR strategy.

1. School Renovation and Educational Support

Improving educational infrastructure enhances learning environments and student outcomes (UNESCO, 2015). DB Power Limited has undertaken:

- Renovation of school buildings
- Provision of furniture and teaching materials
- Support for digital classrooms
- Scholarship programs for economically disadvantaged students

These interventions address both physical and financial barriers to education. Scholarships have particularly benefited girls and marginalized students, promoting gender equity and social inclusion.

Social audit findings indicate improved attendance rates and enhanced student motivation in villages receiving educational support. Teachers reported better classroom engagement due to improved infrastructure.

However, sustained impact requires alignment with state education programs and continuous monitoring of learning outcomes.

2. Vocational Training Centres

Skill development addresses unemployment and enhances employability. Vocational training initiatives under CSR are aligned with India's national Skill Development Mission and reflect strategic CSR principles emphasising shared value creation (Porter & Kramer, 2006). DB Power Limited has established vocational training centres offering courses in:

- Tailoring

Participants receive certification and, in some cases, job placement assistance. Women beneficiaries have leveraged tailoring skills to establish microenterprises, contributing to household income.

The social audit revealed increased self-confidence and economic independence among trainees. However, stronger market linkages and entrepreneurship mentoring are necessary to ensure long-term sustainability.

3. Career Counseling and Youth Guidance

Career counseling sessions provide guidance on educational pathways, vocational options, and employment opportunities. By offering exposure to diverse career possibilities, DB Power Limited encourages youth to pursue informed and aspirational choices.

Such initiatives align with empowerment frameworks emphasizing agency and informed decision-making (Kabeer, 1999).

Audit findings suggest that youth engagement in counselling sessions has increased awareness about higher education opportunities and government employment schemes.

Impact of Education and Skill Development Initiatives

Education and skill initiatives have contributed to:

- Improved employability
- Enhanced gender equity
- Increased educational aspirations
- Strengthened human capital

Investment in human capital not only benefits individuals but also stimulates broader socio-economic development (World Bank, 2018). Continued integration with digital literacy and emerging skill domains will further enhance impact.

C. Health, Hygiene & Sanitation

Health is a prerequisite for productivity and social participation. CSR interventions in health reflect ethical and philanthropic dimensions of corporate responsibility (Carroll & Shabana, 2010).

1. Medical Camps and Health Check-Ups

Regular medical camps provide free consultations, diagnostics, and medicines. These camps are especially valuable in rural areas with limited healthcare infrastructure.

The social audit documented:

- Early detection of chronic illnesses
- Improved maternal health awareness
- Increased immunisation uptake

Early intervention reduces long-term healthcare costs and enhances community resilience (WHO, 2019).

2. Health Awareness Campaigns

Awareness programs on nutrition, hygiene, and disease prevention empower communities with knowledge. Such campaigns are particularly important in reducing preventable diseases.

Women participants reported improved understanding of maternal and child health practices, reflecting positive behavioural change.

3. Sanitation Drives

Sanitation initiatives include:

- Construction of household and community toilets
- Waste management programs
- Hygiene education sessions

Improved sanitation reduces the incidence of communicable diseases and enhances dignity, particularly for women and girls.

4. Partnerships with Healthcare Providers

Collaborations with local hospitals and clinics enhance access to specialised care. Referral mechanisms ensure continuity of treatment beyond health camps. Such partnerships strengthen institutional capacity and improve service reach (Bendell, 2000).

Overall Impact of Health, Hygiene & Sanitation Initiatives

CSR interventions in health have:

- Reduced disease prevalence
- Increased health awareness
- Improved sanitation practices
- Enhanced overall quality of life

Health improvements contribute to workforce productivity and educational continuity, reinforcing sustainable development. The Rural Infrastructure Programme, Education and Skill Development initiatives, and Health, Hygiene & Sanitation interventions represent comprehensive thrust areas of CSR at DB Power Limited. These initiatives reflect a strategic and ethical approach to community development, aligned with stakeholder theory and sustainable development frameworks.

By investing in infrastructure, human capital, and health systems, DB Power Limited has contributed to socio-economic transformation in plant-affected and railway corridor villages. However, sustaining impact requires continuous monitoring, participatory governance, and integration with public schemes. CSR, when implemented strategically and evaluated through robust social audits, can serve as a powerful instrument for inclusive and sustainable rural development

D. Women Empowerment

Gender equality and women's empowerment are widely recognised as central pillars of sustainable and inclusive development. The United Nations Sustainable Development Goals (SDG 5) emphasise that empowering women and girls has multiplier effects on poverty reduction, health improvement, education outcomes, and economic growth (United Nations, 2015). In rural and semi-urban regions affected by industrial projects, gender-sensitive Corporate Social Responsibility (CSR) interventions become even more crucial in mitigating socio-economic disparities.

In this context, DB Power Limited has positioned women's empowerment as a key thrust area within its CSR framework in plant-affected and railway corridor villages in Chhattisgarh. Recognising that women often bear disproportionate socio-economic burdens in transitional rural economies, the company has implemented targeted programs aimed at enhancing women's economic agency, leadership, and health security.

Empowerment, as conceptualised by Kabeer (1999), involves expanding women's access to resources, strengthening their agency in decision-making, and achieving tangible outcomes that enhance their well-being. DB Power Limited's initiatives align with this tripartite framework of resources, agency, and achievements.

1. Self-Help Groups (SHGs)

Self-Help Groups (SHGs) have become one of the most effective grassroots instruments for women's economic and social empowerment in India. SHGs provide a platform for collective savings, credit access, mutual support, and entrepreneurial activities (NABARD, 2020).

Under its CSR initiatives, DB Power Limited has:

- Facilitated the formation of new SHGs in affected villages
- Strengthened existing SHGs through capacity-building programs
- Provided seed funding and revolving funds

- Organized financial literacy sessions
- Linked SHGs with banking institutions

Through SHGs, women have gained access to micro-credit, enabling them to initiate small-scale enterprises such as tailoring units, poultry farming, grocery shops, and handicraft production. The collective model enhances social solidarity and risk-sharing, reducing financial vulnerability.

The social audit revealed that SHG participation has:

- Increased women's household income contribution
- Strengthened decision-making roles within families
- Enhanced savings culture
- Reduced dependence on informal moneylenders

These findings resonate with empirical research suggesting that SHGs significantly enhance women's bargaining power and socio-economic status (Kabeer, 1999).

However, the sustainability of SHGs depends on consistent mentoring, market linkages, and digital financial literacy to ensure integration with formal economic systems.

2. Skill Development Workshops

Skill enhancement is critical for improving women's employability and entrepreneurial capacity. DB Power Limited has conducted skill development workshops in:

- Tailoring and garment stitching
- Handicrafts and embroidery
- Food processing
- Entrepreneurship and small business management

Such initiatives align with the concept of "strategic CSR," where corporate interventions contribute to long-term economic resilience within communities (Porter & Kramer, 2006).

Women beneficiaries reported increased self-confidence, financial independence, and improved social standing within the community. Some participants transitioned from unpaid domestic roles to income-generating activities, contributing to household expenditures such as education and healthcare.

Skill development also reduces gendered economic vulnerability by diversifying income sources. However, ensuring market access for products remains critical. The social audit recommended establishing local marketing cooperatives and exploring e-commerce platforms to expand outreach.

3. Leadership and Advocacy Training

Economic empowerment alone does not guarantee social transformation; leadership capacity and civic participation are equally vital. Leadership training initiatives conducted by DB Power Limited focused on:

- Public speaking and communication skills
- Understanding local governance structures
- Advocacy for rights and entitlements
- Participation in Gram Sabha meetings

Freeman's (1984) stakeholder theory emphasizes the importance of inclusive participation in decision-making processes. By equipping women with leadership skills, DB Power Limited has enabled them to actively engage in community governance. Social audit findings indicate increased female participation in village meetings and local committees. Women trained under these programs have taken leadership roles within SHGs and community groups, advocating for improved sanitation, drinking water, and educational facilities.

Leadership development fosters long-term social change by creating local champions for development initiatives.

4. Health and Nutrition Programs for Women

Women's health remains a critical development concern, particularly in rural India, where access to healthcare services is often limited. DB Power Limited has implemented women-centric health programs focusing on:

- Maternal and child health awareness
- Anaemia prevention campaigns
- Nutrition supplementation programs
- Regular health check-ups

According to the World Health Organisation (WHO, 2019), improved maternal health contributes to intergenerational benefits, reducing child mortality and enhancing long-term productivity.

The social audit found improved awareness regarding prenatal care, immunisation schedules, and balanced nutrition among participating women. Health interventions also reduced absenteeism in livelihood activities and strengthened community resilience. Nevertheless, sustained impact requires integration with public health systems and continuous monitoring.

Impact of Women Empowerment Initiatives

The cumulative impact of women empowerment programs includes:

- Increased economic participation
- Strengthened community leadership
- Improved health outcomes
- Enhanced social inclusion

By addressing structural gender inequalities, DB Power Limited is contributing to inclusive growth and sustainable development.

E. Social Welfare and Development Programme

The Social Welfare and Development Programme represents a holistic extension of CSR interventions aimed at addressing vulnerabilities and promoting inclusive community development. CSR literature emphasises that ethical and philanthropic responsibilities complement economic objectives in responsible business practice (Carroll & Shabana, 2010).

1. Support for Vulnerable Groups

Targeted interventions for vulnerable groups—including elderly persons, differently abled individuals, and marginalised communities—reflect a commitment to social justice.

Initiatives include:

- Financial assistance for medical emergencies
- Distribution of assistive devices
- Support for social welfare schemes
- Community-based inclusion programs

Such interventions align with the principles of distributive justice and inclusive governance. By addressing vulnerabilities, DB Power Limited strengthens social cohesion and reduces inequality.

2. Environmental Conservation

As a coal-based power producer, environmental stewardship is particularly significant. CSR-driven environmental initiatives include:

- Tree plantation drives
- Waste management programs

- Awareness campaigns on environmental conservation
- Promotion of sustainable practices

Environmental CSR aligns with global sustainable development frameworks and corporate accountability principles (Scheyvens et al., 2016).

The social audit observed improved green cover in certain villages and increased awareness of waste segregation practices. However, long-term ecological sustainability requires systematic monitoring and community ownership.

3. Community Engagement and Participatory Development

Community engagement forms the backbone of effective CSR implementation. Participatory development ensures that interventions are responsive to local needs and aspirations (Chambers, 1994).

DB Power Limited has facilitated:

- Village-level consultations
- Participatory planning sessions
- Public dissemination of CSR activities
- Feedback mechanisms

Such engagement enhances transparency and builds trust between the corporation and community. Participatory governance also strengthens social accountability (Bendell, 2000).

Rural Infrastructure as the Backbone of Sustainable Development

Rural infrastructure is widely recognised as a foundational driver of economic growth and poverty reduction. According to the World Bank (2018), infrastructure investments have multiplier effects on employment generation, productivity enhancement, and human development.

In India, where a substantial population resides in rural areas, infrastructure development addresses:

- Market access constraints
- Health service accessibility
- Educational disparities
- Employment generation

CSR interventions supplement public sector efforts by addressing localised gaps and accelerating development.

Components of Rural Infrastructure

1. **Transportation Infrastructure** – Roads and connectivity improve trade and mobility.
2. **Water and Sanitation** – Reduces disease burden and enhances dignity.
3. **Electrification** – Facilitates digital inclusion and entrepreneurship.
4. **Community Facilities** – Strengthens social capital and civic engagement.

These components collectively improve living standards and economic opportunities.

CSR's Role in Enhancing Rural Infrastructure

Corporate interventions in rural infrastructure:

- Generate local employment during construction
- Enhance market linkages for small producers
- Strengthen local governance structures
- Promote inclusive growth

Strategic CSR integrates business interests with community development, creating shared value (Porter & Kramer, 2006).

The Women Empowerment and Social Welfare initiatives of DB Power Limited reflect a comprehensive and inclusive CSR framework. By investing in gender equity, vulnerable populations, environmental sustainability, and participatory governance, the company demonstrates responsible corporate citizenship.

Rural infrastructure development remains central to sustainable community transformation. Through targeted interventions in education, health, skill development, and infrastructure, DB Power Limited contributes to employment generation, poverty reduction, and enhanced living standards in the affected villages of Chhattisgarh. CSR, when implemented strategically and evaluated through social audits, can catalyse inclusive growth and sustainable development.

10.0. Expenses of Budget Allocated in Financial Year 2024-2025 for CSR Activities:

Financial Year	Rural Infrastructure Development	Health & Sanitation	Education & Skill Development	Women Empowerment	Social & Cultural Programmes	Total
2024-2025	21711585	10971568	128677449	14005664		17,53,66,266

11.0. Activities Carried Out under Rural Infrastructure:

Rural infrastructure encompasses the physical framework and services that facilitate economic activities and improve the quality of life in rural areas. It includes transportation systems, power generation and distribution, telecommunications, water supply and sanitation, irrigation systems, educational facilities, healthcare centres, and markets. The development of these facilities is vital for several reasons:

Economic Growth: Infrastructure is a key driver of economic growth. Improved transportation networks, such as roads and bridges, facilitate the movement of goods and people, reducing costs and increasing efficiency.

Access to reliable power and telecommunications enables businesses to operate effectively and reach broader markets.

Poverty Alleviation: By improving access to essential services and creating job opportunities, rural infrastructure development plays a significant role in poverty alleviation. Infrastructure projects can create employment opportunities during both the construction and operational phases, providing income to local communities.

Human Development: Access to education and healthcare facilities is crucial for human development. Improved infrastructure ensures that rural populations have access to quality education and healthcare services, which are essential for improving living standards and breaking the cycle of poverty.

Agricultural Productivity: Agriculture is the primary livelihood for many rural households. Infrastructure such as irrigation systems and rural roads enhance agricultural productivity by providing reliable water sources and efficient means of transporting produce to markets.

Social Cohesion: Infrastructure development can also strengthen social cohesion by connecting isolated communities and promoting social interaction. This connectivity can lead to a greater sense of community and shared purpose.

Figure: 01 Conceptual Framework of DB Power Ltd CSR Unit in Rural Infrastructure

The image presents a conceptual framework for Corporate Social Responsibility (CSR) as applied by DB Power Ltd in the context of rural infrastructure. The framework outlines how various dimensions of CSR are integrated to achieve specific outcomes in community development, sustainable livelihoods, and environmental protection. Let's break down the elements of this framework to understand its implications. The framework starts by identifying four key dimensions of CSR:

Philanthropic: This dimension focuses on the company's voluntary actions to contribute to society. Philanthropy may include charitable donations, sponsorships, and other activities that benefit the community. This element of CSR reflects the company's commitment to giving back and enhancing social welfare beyond profit-making activities.

Ethical: Ethical responsibility pertains to conducting business fairly and morally. It involves adherence to ethical standards and principles, ensuring that the company operates with integrity and transparency. Ethical behaviour fosters trust and positive relationships with stakeholders, including employees, customers, and the community.

Legal: Legal responsibility encompasses compliance with laws and regulations. Companies must operate within the legal frameworks set by governments and regulatory bodies. Legal compliance ensures that businesses do not engage in practices that harm society or the environment, protecting both the company and the public.

Economic: Economic responsibility refers to the company's obligation to be profitable and economically sustainable. It involves making sound financial decisions that benefit the company and its stakeholders. By being economically responsible, a company can generate wealth, create jobs, and contribute to the economic development of the communities it serves.

The framework illustrates that these CSR dimensions collectively lead to initiatives focused on **Rural Infrastructure**. This focus is significant because rural areas often lack essential infrastructure, such as roads, schools, healthcare facilities, and utilities.

By investing in rural infrastructure, DB Power Ltd can address critical gaps that hinder community development and economic growth in these areas. The central oval labelled Impact suggests that the efforts in rural infrastructure have tangible and measurable outcomes. The impact reflects the effectiveness of CSR initiatives in transforming the community. It indicates that CSR activities should not only be about implementing projects but also about assessing their effects on improving the quality of life for rural populations. The framework culminates in three primary outcomes:

Community Development: By enhancing rural infrastructure, the company can significantly contribute to community development. Improved infrastructure can lead to better education, healthcare, and overall living standards, empowering communities to thrive.

Sustainable Livelihood: Infrastructure improvements can create sustainable livelihoods by providing communities with access to markets, resources, and opportunities. For instance, better roads can facilitate trade and commerce, while access to electricity can enable small businesses to operate efficiently.

Environmental Protection: CSR activities in rural infrastructure should also prioritise environmental protection. Sustainable practices can ensure that development does not come at the expense of natural resources. Environmental initiatives might include renewable energy projects, conservation efforts, and sustainable agricultural practices.

In summary, the conceptual framework of DB Power Ltd's CSR in rural infrastructure illustrates a holistic approach to corporate responsibility. By integrating philanthropic, ethical, legal, and economic dimensions, the company aims to achieve significant impacts in rural areas. The focus on community development, sustainable livelihoods, and environmental protection underscores the company's commitment to creating positive social and economic change. This framework highlights the importance of strategic CSR planning that aligns business goals with societal needs, ultimately fostering a sustainable future for rural communities.

Rural infrastructure development is a critical component of sustainable development in rural areas. It plays a vital role in economic growth, poverty alleviation, and human development. CSR interventions have made significant contributions to enhancing rural infrastructure, creating employment opportunities, and improving living standards for rural populations. By addressing challenges and focusing on collaboration, scalability, and sustainability, CSR initiatives can continue to play a transformative role in rural development, ensuring that rural communities have the infrastructure they need to thrive and prosper.

This section covered the details of CSR intervention in rural infrastructure, public relations, and activities based on preserving the environment, like pollution prevention programs and awareness programs in the community. It also analysed how CSR activities have provided significant employment to the local community people and the production of crops and enhancement in services. Infrastructure assets such as rural roads, tracks, bridges, irrigation schemes, water supplies, schools, health Centre and markets are needed in rural areas for the local population to fulfil their basic needs and live a socially and economically productive life.

Photo 1: The foundation ceremony (Bhoomi Poojan) for the construction of the Community Centre at Village Badadarha

"The foundation ceremony (Bhoomi Poojan) for the construction of the Community Centre at Village Badadarha" signifies more than a ceremonial beginning of a construction project; it reflects a strategic Corporate Social Responsibility (CSR) intervention undertaken by DB Power Limited under its Rural Infrastructure Programme in Chhattisgarh.

From a CSR perspective, the Bhoomi Poojan marks the formal initiation of a community-centric infrastructure project aimed at enhancing social capital and participatory development in a plant-affected village. In rural development discourse, the establishment of a community centre is not merely a physical addition to the village landscape but a socio-institutional investment. It creates a shared public space that facilitates collective decision-making, capacity-building activities, cultural events, and welfare programs. Such infrastructure strengthens local governance mechanisms and encourages inclusive participation, especially among women, youth, and marginalized groups.

The ceremony itself symbolizes respect for local traditions and cultural values, reflecting the ethical dimension of CSR. By conducting Bhoomi Poojan—a culturally significant ritual—the CSR unit demonstrates sensitivity toward community sentiments, thereby strengthening trust and social legitimacy. This aligns with stakeholder theory, which emphasizes meaningful engagement with local communities to ensure sustainable and mutually beneficial relationships.

Furthermore, the construction of a community centre under rural infrastructure development contributes to long-term socio-economic benefits. It can function as a venue for vocational training, health camps, awareness programs, and Self-Help Group meetings, thereby supporting livelihood enhancement and social empowerment. In this sense, the activity integrates philanthropic intent with strategic development objectives. Thus, the foundation ceremony represents the commencement of a transformative intervention that supports community development, institutional strengthening, and inclusive growth. It exemplifies how

CSR initiatives, when culturally embedded and development-oriented, can foster sustainable rural progress beyond mere compliance obligations.

Photo 2: The Solar-Powered Drinking Water System has been installed at Rampur, Badadarha.

The statement, *"The Solar-Powered Drinking Water System has been installed at Rampur, Badadarha,"* reflects a significant Corporate Social Responsibility (CSR) intervention undertaken by DB Power Limited under its Rural Infrastructure Programme in Chhattisgarh. This initiative represents a strategic effort to address one of the most fundamental development needs in rural communities – access to safe and sustainable drinking water.

From a developmental perspective, the installation of a solar-powered water system integrates two critical dimensions: public health and environmental sustainability. Access to potable water is directly linked to reduced incidence of water-borne diseases, improved sanitation outcomes, and enhanced overall community health. In many rural settings, women and children bear the burden of fetching water from distant sources. By establishing a local drinking water system, the CSR intervention reduces physical drudgery, saves time, and allows greater participation in education and income-generating activities. The use of solar energy further strengthens the intervention's sustainability dimension. Solar-powered systems reduce dependency on conventional electricity sources, lower operational costs, and minimise carbon emissions. This aligns with the environmental responsibility component of CSR, reflecting a commitment not only to social welfare but also to ecological stewardship.

In addition, such infrastructure enhances community resilience by ensuring a reliable water supply even in areas with irregular power availability. The installation signifies more than a technical upgrade; it represents an investment in long-term rural well-being and inclusive growth. Thus, the activity demonstrates how CSR, when strategically aligned with community needs and sustainable technologies, can create measurable social, economic, and environmental impact in plant-affected villages like Badadarha.

Photo 3: Construction of a 10,000-litre capacity water tank at Beech Basti, Village Badadarha, to strengthen local water infrastructure.

Photo 4: Borewell drilling completed at Mahant Mohalla, Badadarha, ensuring reliable water supply for the community.

The construction of a 10,000-litre capacity water tank at Beech Basti, Village Badadarha, represents a strategic rural infrastructure intervention undertaken by DB Power Limited as part of its Corporate Social Responsibility (CSR) initiatives in Chhattisgarh. This initiative addresees one of the most fundamental determinants of rural development—access to safe, adequate, and reliable water supply.

Water infrastructure plays a critical role in improving public health, reducing vulnerability to water-borne diseases, and enhancing overall quality of life. In rural settlements such as Beech Basti, limited water storage capacity often leads to irregular supply, dependency on seasonal sources, and inequitable distribution. The installation of a 10,000-litre storage facility ensures a centralized and regulated water distribution system, thereby improving accessibility and sustainability.

From a developmental perspective, the intervention contributes to multiple dimensions of well-being. First, it reduces the burden on women and children, who traditionally bear the responsibility of fetching water from distant or unsafe sources. Time saved from water collection can be redirected toward education, household productivity, or income-generating activities. Second, the availability of stored potable water enhances sanitation practices, thereby supporting hygiene-related behavioral change.

The construction of such infrastructure also reflects a participatory CSR approach. Social audits and community consultations often reveal water scarcity as a primary concern in plant-affected villages. By responding to locally identified needs, DB Power Limited strengthens stakeholder trust and reinforces its social license to operate. This aligns with stakeholder theory, which emphasizes the importance of corporate responsiveness to community priorities.

Economically, reliable water infrastructure supports small-scale enterprises, livestock management, and agricultural activities, indirectly contributing to livelihood enhancement. The tank's capacity suggests foresight in planning for population needs rather than short-term relief, thereby integrating sustainability into CSR planning.

Furthermore, water infrastructure is aligned with Sustainable Development Goal 6 (Clean Water and Sanitation), underscoring the company's alignment with broader global development frameworks. In plant-affected areas, such interventions help mitigate perceptions of environmental stress associated with industrial operations.

In essence, the construction of the 10,000-litre water tank at Beech Basti symbolizes more than an infrastructural addition – it represents an investment in health security, gender equity, community resilience, and sustainable rural development. Through such initiatives, the CSR unit of DB Power Limited demonstrates a transition from philanthropic charity to strategic, impact-oriented rural infrastructure development.

The completion of borewell drilling at Mahant Mohalla, Badadarha, under the CSR framework of DB Power Limited reflects a targeted intervention aimed at strengthening decentralized water access in plant-affected communities in Chhattisgarh. Borewell installation is particularly significant in rural settings where groundwater serves as a primary source of drinking water.

Unlike centralized water storage systems, borewells provide localized and direct access to groundwater, ensuring continuity of supply even in periods of surface water scarcity. In hamlets such as Mahant Mohalla, water insecurity may stem from seasonal depletion, uneven distribution, or population growth. The drilling of a borewell thus addresses immediate supply gaps while reinforcing long-term water resilience.

From a public health standpoint, reliable access to groundwater reduces dependence on contaminated or stagnant water sources, lowering the risk of water-borne diseases. Improved water accessibility also enhances household hygiene practices, contributing to better sanitation outcomes and overall community health.

The CSR intervention demonstrates responsiveness to micro-level needs. While large infrastructure projects often benefit entire villages, localised solutions such as borewells address specific neighbourhood challenges. This micro-targeted approach reflects inclusive and equitable CSR planning, ensuring that smaller or marginalised sections within a village are not overlooked.

Additionally, the borewell contributes to socio-economic stability. Access to dependable water supports livestock rearing, kitchen gardening, and small-scale agricultural practices, thereby supplementing household income. For women, proximity to water sources significantly reduces physical labor and time expenditure, enhancing their capacity for economic participation.

Environmental sustainability considerations are also relevant. Responsible groundwater management requires monitoring of water tables and promotion of conservation practices. The CSR initiative can be strengthened through community-based water management committees to ensure sustainable extraction and maintenance.

Symbolically, the borewell drilling activity reinforces corporate accountability and visible engagement in addressing essential community needs. It strengthens the relationship between the company and local stakeholders by translating CSR commitments into tangible outcomes. Hence, the borewell installation at Mahant Mohalla represents a focused, needs-based rural infrastructure intervention that enhances water security, promotes health, reduces gendered labour burdens, and supports economic resilience. Together with the water tank at Beech Basti, it reflects a comprehensive approach by DB Power Limited's CSR unit toward sustainable water resource management and inclusive rural development.

Photo 5: The boundary wall of the Government Primary School at Rampur and the backside boundary wall of the Government Higher Secondary School at Tundri

Photo 6: The boundary wall of the Government Primary School at Amapali has been constructed to ensure a secure and well-defined school

The construction of the boundary wall of the Government Primary School at Rampur represents a significant rural infrastructure intervention undertaken by DB Power Limited under its Corporate Social Responsibility (CSR) initiatives in Chhattisgarh. Although boundary walls may appear to be a minor infrastructural addition, their developmental implications are substantial, particularly in rural educational settings.

In many rural schools, the absence of proper boundary demarcation exposes children to safety risks such as stray animals, unauthorised entry, and traffic hazards. By constructing a secure perimeter, the CSR unit enhances the physical safety of students and staff. Safety is a foundational precondition for effective learning; without a secure environment, educational engagement and attendance may be adversely affected.

Beyond safety, the boundary wall establishes a defined institutional space that reinforces discipline, school identity, and community ownership. It protects school assets, including classrooms, playgrounds, and educational materials, from damage or encroachment. Such infrastructure investment reflects a long-term commitment to strengthening the educational ecosystem.

From a gender perspective, secure school premises encourage parents – especially of girl students – to feel confident in sending their children to school regularly. Thus, the intervention indirectly supports gender equity and improved enrollment rates.

The construction activity also demonstrates a needs-based CSR approach. Social audits and community consultations frequently highlight school safety as a priority concern. By responding to this demand, DB Power Limited strengthens stakeholder trust and reinforces its social license to operate in plant-affected regions. Economically, a secure educational infrastructure contributes to human capital development, which in turn supports long-term socio-economic progress. Therefore, the boundary wall at Rampur symbolises more than a structural enhancement – it represents an investment in child safety, educational continuity, and sustainable rural development.

The completion of the backside boundary wall of the Government Higher Secondary School at Tundri under the CSR framework of DB Power Limited reflects a targeted intervention aimed at addressing specific infrastructural vulnerabilities. Higher secondary schools cater to adolescents who are at a critical stage of academic and personal development, making a secure learning environment even more essential.

Often, partial boundary protection leaves certain sections of school premises exposed, particularly at the backside, where unauthorised entry, encroachment, or safety risks may arise. By constructing the backside boundary wall, the CSR initiative ensures comprehensive campus protection rather than partial coverage.

This intervention enhances institutional integrity by safeguarding infrastructure, laboratories, libraries, and other facilities essential for higher education. For older students, especially girls, a secure campus is closely linked to parental trust and consistent attendance. Safety concerns frequently influence dropout rates at the secondary level, and addressing such infrastructural gaps contributes to retention and academic progression.

Moreover, this activity reflects micro-level problem identification within CSR planning. Rather than adopting a one-size-fits-all model, the CSR unit assessed the specific requirements of the Tundri school and addressed the incomplete boundary condition. This demonstrates adaptive and context-sensitive CSR implementation. The boundary wall also protects school grounds from encroachment and misuse after school hours, ensuring that public assets remain preserved for educational purposes. Over time, this contributes to institutional sustainability and reduces maintenance costs.

Symbolically, the project reinforces DB Power Limited's commitment to educational infrastructure as a pillar of rural development. By investing in higher secondary education facilities, the company supports youth development, employability prospects, and long-term community resilience.

Thus, the backside boundary wall at Tundri is not merely a construction activity but a strategic intervention aimed at securing educational infrastructure, promoting adolescent safety, and strengthening rural human capital formation. The construction of the boundary wall of the Government Primary School at Amapali under the CSR initiatives of DB Power Limited further illustrates the company's commitment to strengthening rural educational infrastructure in the affected villages of Chhattisgarh.

Primary schools serve as the foundation of formal education, shaping cognitive development and social skills among young children. In rural areas, inadequate infrastructure often discourages attendance and compromises safety. The construction of a boundary wall at Amapali ensures that children have a protected and clearly demarcated learning space. The boundary wall minimises the risk of stray animals entering the premises and prevents unauthorised access. It also provides psychological security to students, teachers, and parents. For young learners, a well-defined campus enhances discipline and helps create an environment conducive to focused learning.

From a community development perspective, the intervention strengthens public infrastructure without replacing government responsibility. Instead, it supplements state efforts by addressing gaps that may otherwise persist due to budgetary or administrative constraints. The boundary wall also symbolises respect for educational institutions as formal community assets. When infrastructure is improved, community perception of the school's value increases, potentially leading to greater parental engagement and community support.

Furthermore, such infrastructure projects generate short-term local employment during construction, thereby contributing to livelihood opportunities within the village. Although temporary, these economic benefits reinforce positive community-corporate relationships.

By ensuring secure and functional school premises, DB Power Limited contributes indirectly to sustainable development and intergenerational progress. Therefore, the construction of boundary walls at Rampur, Tundri, and Amapali reflects a coherent CSR strategy centred on rural educational infrastructure strengthening. Each intervention addresses safety, institutional integrity, gender inclusion, and long-term human capital development. Collectively, these activities demonstrate how targeted infrastructure support under CSR can create meaningful, lasting impact in plant-affected communities.

Photo 7: Bathing steps have been constructed at Santoshi Pond in Village Fulbandhia and at Chamrin Pond in Village Tundri

Photo 8: Existing bathing steps at Dadu Pond in Village Badadarha have been repaired to improve safety and accessibility for the community.

The construction of bathing steps at Santoshi Pond in Village Fulbandhiya represents a meaningful rural infrastructure intervention undertaken by DB Power Limited under its Corporate Social Responsibility (CSR) initiatives in Chhattisgarh. While at first glance the development of pond bathing steps may appear to be a small-scale civic activity, its socio-cultural and public health implications are substantial in rural contexts.

In many villages, ponds serve as multi-functional community assets used for bathing, washing clothes, livestock care, and religious activities. However, the absence of structured and safe access points often exposes residents—especially women, children, and elderly persons—to risks such as slipping, drowning, and water contamination. The construction of properly designed bathing steps improves accessibility, ensures safer entry and exit, and enhances the usability of the pond.

From a public health perspective, improved bathing infrastructure reduces the risk of accidents and contributes to hygienic practices. Structured steps prevent soil erosion at the pond's edge and reduce contamination caused by indiscriminate access. By organizing water use spaces, the intervention indirectly supports sanitation and environmental management.

Culturally, ponds often hold religious and social significance. Constructing bathing steps strengthens the preservation of traditional water bodies while modernizing their functionality. Such infrastructure development reflects sensitivity toward local customs and practices, reinforcing community trust and engagement.

Economically, improved pond access can support ancillary livelihood activities, including small-scale fishing and livestock management. Moreover, the construction process may generate short-term employment opportunities for local workers, contributing to income support within the village.

From a CSR standpoint, this intervention demonstrates a needs-based and participatory approach. Community consultations frequently identify pond safety and usability as priority concerns in rural areas. By addressing these issues, DB Power Limited strengthens its social license to operate and demonstrates responsiveness to grassroots needs.

Thus, the construction of bathing steps at Santoshi Pond signifies a holistic rural infrastructure initiative that integrates safety, cultural preservation, environmental sustainability, and community well-being under CSR intervention.

The construction of bathing steps at Chamrin Pond in Village Tundri under the CSR framework of DB Power Limited reflects a targeted effort to improve public utility infrastructure in plant-affected communities in Chhattisgarh. Similar to Santoshi Pond, Chamrin Pond serves as an essential community resource for daily domestic and social activities.

In rural villages, water bodies are central to community life, yet their accessibility is often unstructured and unsafe. By constructing bathing steps, the CSR unit ensures safer and more organized access, particularly for vulnerable groups such as women and elderly residents. The steps reduce the gradient and stabilize the entry point, minimizing accidents and enhancing comfort during usage.

This intervention also contributes to environmental management. Structured steps help prevent soil erosion and degradation of the pond embankment. When pond edges are reinforced and properly maintained, the longevity of the water body is enhanced, supporting sustainable water resource management.

The activity reflects inclusive development planning. By focusing on communal assets used by the entire village, the CSR initiative promotes shared benefits rather than targeting only specific households. Such collective infrastructure fosters social cohesion and reinforces a sense of shared ownership among residents.

Moreover, safe bathing infrastructure contributes indirectly to improved hygiene and dignity. Organised spaces reduce congestion and create safer environments for women and girls, thereby addressing gender-sensitive concerns in public spaces.

From a corporate responsibility perspective, the intervention illustrates DB Power Limited's commitment to holistic rural development. Instead of focusing solely on large-scale infrastructure, the CSR unit has recognised the importance of micro-level improvements that significantly impact daily life. In summary, the construction of bathing steps at Chamrin Pond exemplifies a context-specific, community-oriented CSR intervention aimed at enhancing safety, environmental sustainability, and inclusive access to shared rural resources.

The repair of existing bathing steps at Dadu Pond in Village Badadarha demonstrates a maintenance-oriented CSR intervention by DB Power Limited in Chhattisgarh. Unlike new construction projects, repair and rehabilitation activities reflect a commitment to sustainability and preservation of existing infrastructure. Over time, pond steps may deteriorate due to erosion, weather exposure, and continuous use. Damaged or broken steps pose safety hazards, particularly during monsoon seasons when surfaces become slippery. By repairing the bathing steps, the CSR unit ensures continued safe access to the pond and prevents accidents.

Maintenance interventions are often overlooked in rural infrastructure planning, yet they are essential for long-term functionality. Repairing existing assets is cost-effective, environmentally responsible, and supportive of resource optimization. It demonstrates that CSR initiatives extend beyond visibility-driven projects to include responsible stewardship of community resources. The repair activity also reinforces the principle of continuity in development. Infrastructure, once created, must be sustained through periodic maintenance to remain effective. By undertaking repairs, DB Power Limited signals its ongoing engagement with community needs rather than one-time project completion.

From a social perspective, maintaining safe pond access preserves daily routines, cultural practices, and community interactions centred around the water body. It ensures that residents can continue to utilise the pond without disruption. Hence, the repair of bathing steps at Dadu Pond represents a responsible and sustainable CSR intervention. Together with the construction activities at Santoshi and Chamrin Ponds, it reflects a comprehensive approach to rural water infrastructure that prioritises safety, environmental integrity, and community welfare.

Photo 9: The construction of cremation sheds has been completed in Villages Kunkuni and Khairpali to ensure a secure and dignified facility for conducting funeral rites

The statement, *"The construction of cremation sheds has been completed in Villages Kunkuni and Khairpali to ensure a secure and dignified facility for conducting funeral rites,"* reflects a socially sensitive and community-centred intervention undertaken by DB Power Limited under its Corporate Social Responsibility (CSR) initiatives in Chhattisgarh.

This activity falls within the broader framework of rural infrastructure development and social welfare support. In rural areas, cremation grounds often lack basic infrastructure such as protective sheds, seating arrangements, or demarcated spaces. During adverse weather conditions—such as extreme heat, rain, or storms—families performing last rites may face significant hardship.

The construction of cremation sheds provides shelter and structural organisation, ensuring that funeral ceremonies can be conducted with dignity, safety, and cultural propriety. From a socio-cultural perspective, cremation practices are deeply embedded in community traditions and religious customs. By developing infrastructure at cremation grounds, the CSR unit demonstrates respect for local beliefs and social norms. Such interventions strengthen trust between the company and the community, reinforcing its role as a responsible corporate citizen.

Additionally, structured cremation facilities help in maintaining environmental hygiene and organised land use. Defined spaces reduce encroachment, prevent open and scattered burning practices, and support better waste management at the site. This contributes to both environmental sustainability and public health considerations. The intervention also symbolises inclusivity. Cremation grounds are shared community assets, and improving them benefits all social groups irrespective of economic status. By investing in such infrastructure, DB Power Limited addresses not only economic development but also social dignity and emotional well-being.

Thus, the construction of cremation sheds in Kunkuni and Khairpali represents a holistic CSR initiative that integrates cultural sensitivity, social equity, environmental management, and rural infrastructure enhancement, contributing to sustainable and humane community development.

Photo 10: A Hume pipe culvert has been constructed on the bypass road connecting Fulbandhiya to Khairpali.

Photo 11: The bypass road connecting Fulbandhiya to Khairpali has been repaired and strengthened with murum to improve connectivity and ensure smoother transportation

The statement, *"A Hume pipe culvert has been constructed on the bypass road connecting Fulbandhiya to Khairpali and the bypass road has been repaired and strengthened with murum to improve connectivity and ensure smoother transportation,"* reflects a significant rural infrastructure intervention undertaken by DB Power Limited under its Corporate Social Responsibility (CSR) initiatives in Chhattisgarh. This activity demonstrates a comprehensive approach to improving rural connectivity, safety, and economic integration in plant-affected and surrounding villages.

The construction of a Hume pipe culvert is particularly important in rural road infrastructure. In many villages, seasonal water flow during monsoons often disrupts transportation, damages roads, and isolates communities. By installing a culvert, the CSR unit has ensured proper drainage and uninterrupted passage across water channels. This prevents road erosion, reduces flooding risks, and enhances year-round accessibility. A culvert, therefore, is not merely a structural addition but a critical component of climate-resilient rural infrastructure. Simultaneously, the repair and strengthening of the bypass road with murum (a commonly used gravel-based material in rural road construction) addresses issues related to uneven surfaces, potholes, and poor road stability.

Murum strengthening improves road durability, reduces dust and slippage, and facilitates smoother movement of vehicles, bicycles, and pedestrians. This is particularly beneficial for farmers transporting agricultural produce, students commuting to schools, and residents accessing healthcare facilities. From a socio-economic perspective, improved road connectivity stimulates local economic activity by linking villages to markets, public institutions, and employment hubs. It reduces travel time and transportation costs, thereby enhancing productivity and livelihood opportunities. In rural development discourse, road infrastructure is often regarded as a catalyst for poverty reduction and inclusive growth.

Moreover, such infrastructure interventions strengthen the social contract between the corporation and local communities. By addressing tangible and frequently voiced concerns—such as road damage and waterlogging—the CSR unit reinforces its commitment to responsive and participatory development. Environmentally, the inclusion of a culvert promotes sustainable water management by ensuring natural water flow is not obstructed. This prevents soil degradation and protects the surrounding agricultural land. Therefore, the combined construction of a Hume pipe culvert and road strengthening with murum represents a holistic CSR intervention that enhances connectivity, ensures safety, promotes economic integration, and contributes to sustainable rural infrastructure development in Fulbandhiya and Khairpali.

Photo 12: Cleaning and deepening work of Dadu Pond at Village Badadarha has been completed to enhance water storage capacity and improve overall water resource management

Cleaning and deepening work of Dadu Pond at Village Badadarha has been completed to enhance water storage capacity and improve overall water resource management," reflects a strategic rural infrastructure initiative undertaken by DB Power Limited under its Corporate Social Responsibility (CSR) programme in Chhattisgarh. This activity highlights the company's commitment to sustainable water conservation and community-based natural resource management.

In rural areas, ponds serve as critical sources of water for domestic use, livestock, agriculture, and groundwater recharge. Over time, however, silt accumulation, debris deposition, and neglect reduce their depth and storage capacity. Cleaning and deepening interventions restore the pond's original capacity, enabling it to retain larger volumes of rainwater, especially during the monsoon season. This significantly improves water availability during dry periods and mitigates seasonal water scarcity.

From an environmental perspective, deepening the pond enhances groundwater recharge, stabilizes the local water table, and supports ecological balance. Such interventions contribute to climate resilience by strengthening the village's ability to cope with erratic rainfall patterns and drought conditions.

Socially, the restoration of Dadu Pond benefits multiple community groups. Improved water availability reduces dependence on distant sources and lowers the burden on women who traditionally manage household water collection. It also supports agricultural activities and livestock rearing, thereby indirectly contributing to livelihood security. The intervention demonstrates a shift from short-term relief measures to long-term sustainability-focused CSR planning. By investing in the rejuvenation of an existing water body rather than creating entirely new infrastructure, the CSR unit emphasises conservation, cost-effectiveness, and community ownership. Thus, the cleaning and deepening of Dadu Pond represents a holistic rural infrastructure intervention that integrates environmental sustainability, livelihood enhancement, and social well-being, reinforcing DB Power Limited's commitment to responsible and sustainable community development.

11.1. Impact of Rural Infrastructure Initiatives on Community:

DB Power Limited has undertaken significant Corporate Social Responsibility (CSR) activities aimed at community development, particularly focusing on rural infrastructure improvements. These initiatives have brought transformative changes to the communities, enhancing connectivity, access to resources, and quality of life. This overview explores the impact of various projects implemented by DB Power Limited in the context of rural infrastructure development.

Concrete Roads for Improved Connectivity

One of the notable CSR activities by DB Power Limited is the construction of concrete roads in rural areas. Concrete roads are a preferred choice in developing countries due to their technical and economic advantages. These roads offer excellent load distribution, reducing the need for thick and costly bases. They are highly resistant to deformation and wear, irrespective of temperature fluctuations, and are not affected by substances like oil, clay, or faecal matter. With an estimated service life of over 30 years, these roads provide a durable solution for rural connectivity.

The newly constructed concrete roads have significantly improved transportation within villages, connecting them to urban centres.

This enhanced connectivity facilitates the movement of goods and people, boosting economic activities and providing villagers with access to better services and opportunities. The roads have become vital lifelines, reducing isolation and fostering development.

Ensuring Access to Safe Drinking Water

Access to safe drinking water remains a critical issue in many parts of rural India. Approximately 45% of the rural population lacks access to safe drinking water, leading to health issues like jaundice, cholera, and gastroenteritis. DB Power Limited addressed this challenge by drilling bore wells and installing hand pumps in labour colonies. This initiative ensures villagers have access to clean and safe drinking water, significantly reducing the prevalence of waterborne diseases.

Groundwater, a crucial source of irrigation, has been exploited extensively, often without considering recharge prospects. By providing bore wells and hand pumps, DB Power Limited not only addresses drinking water needs but also supports agricultural activities by ensuring a reliable water supply for irrigation.

Infrastructure Renovation for Better Administration

Renovating existing infrastructure is another critical aspect of DB Power Limited's CSR activities. Renovations improve outdated or damaged structures, enhancing their functionality and lifespan. One such project involved renovating roads leading to the collector's office and connecting villages with metal roads. This renovation has streamlined administrative functions, improving access for primary and secondary stakeholders and fostering better governance.

Supporting Religious and Spiritual Activities

Religious and spiritual activities play a vital role in social integration. Recognizing this, DB Power Limited constructed a shed near a local temple. The shed provides shelter for visitors, protecting them from harsh weather conditions.

While religious activities can sometimes accelerate groundwater exploitation, the shed construction is focused on enhancing the spiritual experience for the community. This initiative underscores the importance of social cohesion and cultural preservation in community development.

Enhancing Water Resources and Safety

In rural areas, ponds have been traditional sources of water for livestock, irrigation, and other purposes. DB Power Limited has taken steps to enhance the functionality and safety of these ponds. By constructing steps with bricks and cement around the ponds, the company has improved accessibility, reducing the risk of accidents like slipping and drowning.

The enhanced ponds now serve multiple purposes, including fish farming, which has emerged as an alternative livelihood source for villagers. This initiative has not only improved water resource management but also contributed to economic development by diversifying income sources for the community.

Pond Cleaning and Water Harvesting

Water scarcity is a significant challenge in rural India, particularly in drought-prone areas. To address this, DB Power Limited undertook pond cleaning and water harvesting initiatives. Cleaning existing ponds and constructing embankments help capture rainwater and surface runoff, ensuring a steady water supply for agriculture and other uses. Farm ponds, created as part of this initiative, serve as vital reservoirs, providing water during dry seasons for irrigation and other purposes. This approach supports sustainable agriculture, improves farmers' socio-economic status, and strengthens community resilience against climate variability.

Canal Repair for Improved Irrigation

Canals are crucial for irrigation in rural areas, supporting agriculture by channeling water to fields. DB Power Limited repaired the Kachcha Canal in Badadarha to enhance its functionality for irrigation purposes.

This repair ensures a reliable water supply, supporting agricultural productivity and reducing dependence on erratic monsoon rains.

Promoting Renewable Energy and Biogas

DB Power Limited is committed to promoting renewable energy through the installation of domestic biogas units. These units convert cow dung into biogas, providing a sustainable energy source for cooking and reducing reliance on traditional fuels like firewood and kerosene.

The use of biogas has multiple benefits, including reducing indoor air pollution, alleviating the workload for women and children, and decreasing deforestation. This initiative supports India's National Policy on Biofuels, contributing to climate protection and energy sustainability.

Enhancing Safety and Quality of Life with Street Lights

The installation of streetlights in rural areas is another impactful CSR initiative by DB Power Limited. Streetlights enhance safety and security, reducing the risk of animal attacks and accidents, particularly after sunset. Villagers report feeling safer and more confident moving around at night, leading to increased social interactions and community activities.

The presence of streetlights has also facilitated women's mobility during evening hours, empowering them to participate more actively in social and economic activities. The initiative has transformed village life, fostering a sense of pride and well-being among residents. DB Power Limited's CSR activities in rural infrastructure development have made a significant impact on community development. From improving connectivity and access to clean water to enhancing safety and promoting renewable energy, these initiatives have transformed rural life. The projects not only address immediate needs but also lay the foundation for sustainable development, empowering communities to thrive. Through strategic investments in infrastructure and community well-being, DB Power Limited demonstrates the power of CSR in driving positive change and creating lasting benefits for society.

11.2. Activities Carried Out under Health, Hygiene & Sanitation:

Sanitation, hygiene, and cleanliness are fundamental indicators of a cultured society. They are not merely aspects of personal or community well-being but are intrinsic to public health and sustainable socio-economic development. Sanitation plays a pivotal role in maintaining human health, preventing diseases, and ensuring a dignified way of life. Mahatma Gandhi's profound statement in 1923, "Sanitation is more important than independence," underscores the crucial importance of sanitation in building a civilised society. This quote is especially relevant in the context of developing nations like India, where sanitation is a pressing concern.

India is a vast country with a significant portion of its population residing in rural areas. Despite the rapid urbanisation and development in recent years, a large number of rural inhabitants still practice open defecation due to inadequate access to proper sanitation facilities. This practice not only poses serious health risks but also affects the dignity and safety of individuals, particularly women and children. The lack of sanitation facilities contributes to the spread of diseases such as diarrhoea, cholera, and typhoid, which are prevalent in areas where open defecation is common. Therefore, improving sanitation is not only a matter of public health but also a crucial step towards achieving social equity and justice.

The challenge of improving sanitation in rural India is multi-faceted and involves various stakeholders, including the government, healthcare sector, non-governmental organisations (NGOs), and the private sector. The healthcare sector, in particular, has a significant role to play in promoting sanitation and hygiene practices. Healthcare professionals, providers, and managers must continually explore ways to prioritise the welfare of individual patients and promote health equity through socially responsible activities. However, the main challenges faced by the healthcare sector in addressing sanitation issues are the lack of resources, awareness, and accessibility to services.

One of the fundamental barriers to improving sanitation in rural areas is the lack of resources. Many communities do not have access to basic sanitation facilities such as toilets, clean water, and waste disposal systems. This lack of infrastructure is often due to insufficient funding and investment in sanitation projects. The government must prioritise the allocation of resources towards building and maintaining sanitation facilities in rural areas. This includes not only the construction of toilets but also the development of water supply systems and waste management infrastructure. Moreover, there is a need for innovative solutions that are cost-effective and sustainable, particularly in resource-constrained settings.

In addition to resource constraints, there is a significant lack of awareness and education about the importance of sanitation and hygiene practices among rural populations. Many individuals are unaware of the health risks associated with poor sanitation and continue to engage in practices such as open defecation due to cultural norms and beliefs. Therefore, there is a need for comprehensive awareness campaigns that educate communities about the benefits of sanitation and hygiene. These campaigns should be culturally sensitive and tailored to the specific needs and contexts of different communities. They should also involve local leaders and influencers who can advocate for change and encourage community participation.

Moreover, the healthcare sector must address the issue of accessibility to sanitation services. Many rural communities are located in remote areas with limited access to healthcare facilities and services. This makes it challenging for individuals to seek medical care and sanitation-related services when needed. To address this issue, the healthcare sector must adopt a more decentralised approach that brings services closer to communities. This can be achieved through the establishment of community health centres, mobile clinics, and outreach programs that provide essential healthcare and sanitation services to underserved populations. Corporate social responsibility (CSR) also has a vital role to play in promoting sanitation and hygiene in rural areas.

Businesses and corporations must recognise their social and ethical responsibilities towards the communities they operate in and contribute to the development of sanitation infrastructure and services. This can be done through partnerships with the government and NGOs to implement sanitation projects and initiatives. By investing in sanitation, businesses not only contribute to the well-being of communities but also enhance their reputation and brand image.

Furthermore, ethical principles must be at the core of efforts to improve sanitation and health equity. This involves ensuring that resources and services are distributed fairly and equitably among different communities. It also requires the adoption of a rights-based approach that recognises sanitation as a fundamental human right. All individuals, regardless of their socio-economic status or geographical location, should have access to basic sanitation facilities and services. This requires a concerted effort from all stakeholders to address the root causes of sanitation inequities and ensure that no one is left behind. In conclusion, sanitation, hygiene, and cleanliness are essential components of a cultured and civilised society. They are critical for public health, social equity, and sustainable development. In a country like India, where a significant portion of the population lacks access to proper sanitation facilities, there is an urgent need for action. The healthcare sector, government, NGOs, and private sector must work together to overcome the challenges of resource constraints, lack of awareness, and accessibility to services. By prioritising sanitation and adopting socially responsible and ethical practices, we can create a healthier and more equitable society for all. The importance of sanitation cannot be overstated, and as Gandhi's words remind us, it is indeed more important than independence. Only by addressing this fundamental issue can we hope to achieve true progress and development.

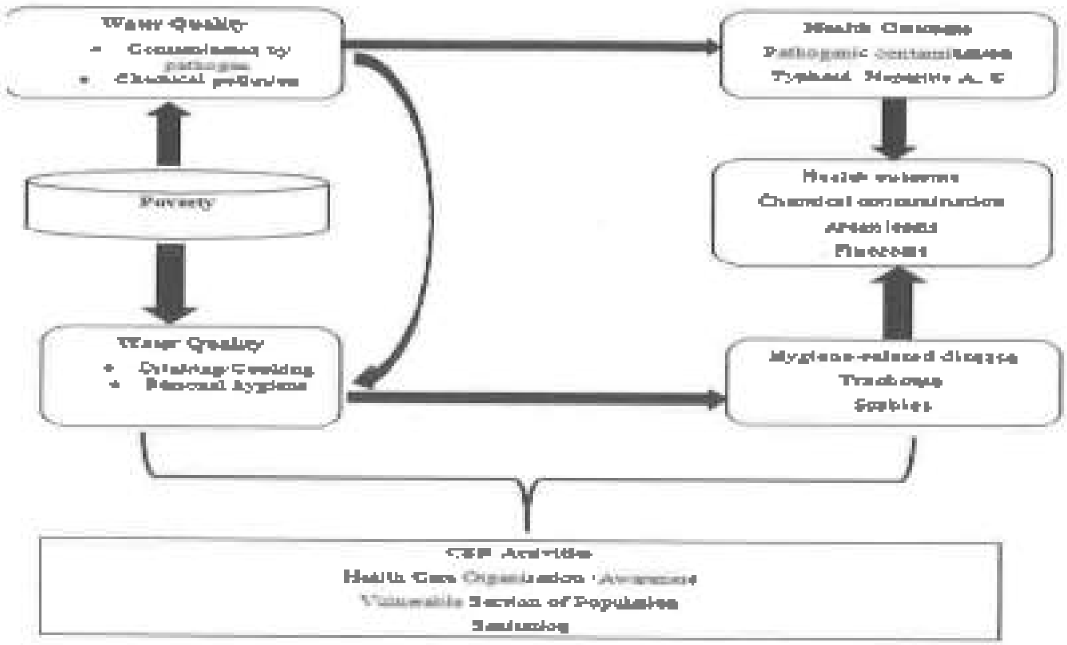

Figure 02: Conceptual Frameworks Depicting the Role of CSR in Health and Sanitation

The conceptual framework depicted in the figure illustrates the intricate relationships between water quality, poverty, health outcomes, and Corporate Social Responsibility (CSR) activities. It underscores the multifaceted nature of public health challenges and the pivotal role that CSR can play in addressing these issues, particularly in vulnerable communities. CSR activities can play a transformative role in breaking the cycle of poor water quality and adverse health outcomes. By investing in healthcare organisations and awareness programs, companies can help improve community health. Educational initiatives on hygiene practices, disease prevention, and the importance of clean water can empower communities to take proactive measures to safeguard their health.

Focus on Vulnerable Sections of the Population: CSR initiatives should prioritise the vulnerable sections of the population, who are disproportionately affected by poor water quality and health outcomes. This includes children, the elderly, and economically disadvantaged groups. Targeted interventions can ensure that these populations receive the support and resources necessary to improve their health and well-being.

Sanitation: Improving sanitation infrastructure is a crucial component of CSR activities. This involves constructing clean and accessible toilets, waste management systems, and clean water facilities. By addressing the root causes of water contamination and poor hygiene, CSR initiatives can significantly reduce the incidence of waterborne and hygiene-related diseases.

Integrative Approach for Sustainable Impact: The framework highlights the need for an integrative approach that combines efforts from various stakeholders, including governments, non-profit organisations, and the private sector, through CSR activities. Collaboration among these entities can lead to more sustainable and impactful solutions to the challenges posed by water quality and health outcomes. This section covered the details of CSR intervention in Health & Sanitation. It also discusses how Health is increasingly becoming a focal point of Corporate Social Responsibility (CSR), largely due to the recognition that a healthy workforce and community are fundamental to the longevity of a business and the success of an economy. The following work has been carried out under Health and Sanitation.

Photo 13: An awareness programme on Energy Conservation was organised for students at the Government Higher Secondary School in Sondka

Photo 14: An awareness programme on HIV and TB prevention was conducted at the DBPL Hospital to educate the community about disease prevention, early detection, and treatment options. A total of 41 individuals benefited from these initiatives.

An awareness programme on Energy Conservation was organised for students at the Government Higher Secondary School in Sondka, and an HIV and TB prevention programme was conducted at the DBPL Hospital to educate the community on disease prevention, early detection, and treatment options. A total of 41 individuals benefited from these initiatives," reflects the diversified and holistic approach adopted by DB Power Limited under its Corporate Social Responsibility (CSR) framework in Chhattisgarh.

Although primarily categorised under social development and health awareness, these initiatives are closely linked with rural infrastructure and sustainable community development. The energy conservation programme conducted among students signifies an investment in behavioural change and environmental sustainability. As a power-generating company, DB Power Limited carries a responsibility to promote responsible energy consumption. By sensitising students, the CSR unit fosters long-term environmental consciousness, encouraging efficient energy use, reduced wastage, and climate-sensitive practices. Students, as future citizens and community influencers, act as multipliers of awareness within their households and villages.

The HIV and TB awareness programme conducted at the DBPL Hospital highlights the company's commitment to preventive healthcare and public health infrastructure support. Rural communities often face limited access to accurate health information, leading to stigma, delayed diagnosis, and preventable complications. By organising awareness sessions on early detection, prevention methods, and available treatment options, the CSR intervention strengthens community health literacy and supports disease control efforts.

The reported benefit to 41 individuals indicates direct outreach, but the indirect impact extends further through knowledge dissemination within families and social networks. Together, these programmes demonstrate that CSR interventions are not limited to physical infrastructure but also include knowledge infrastructure—empowering communities with information, awareness, and preventive capabilities for sustainable development.

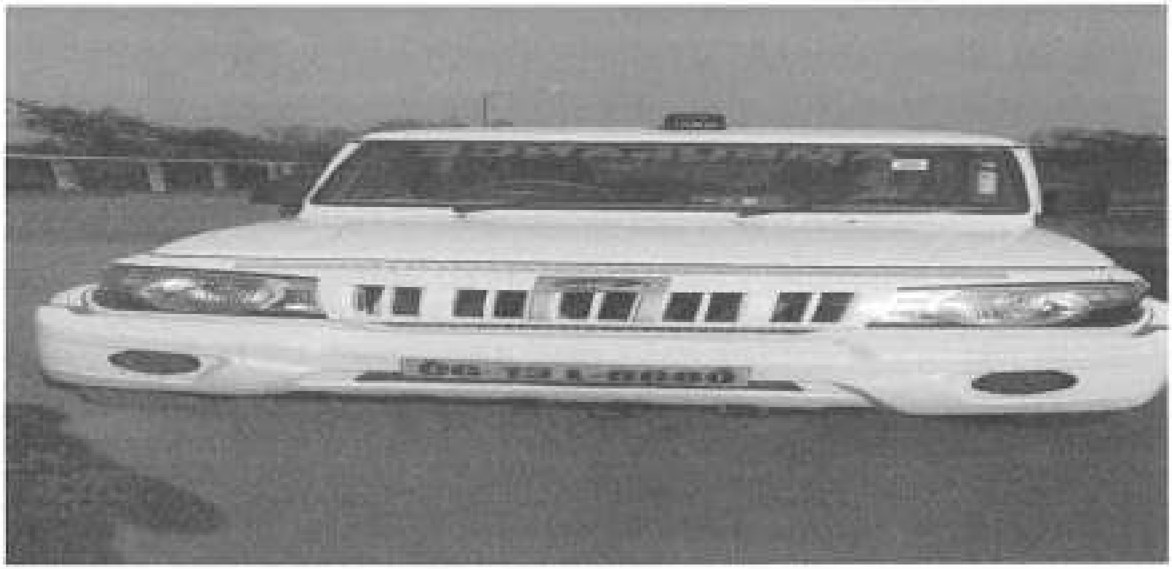

Photo 15: Ambulance referral services have been provided to 395 individuals from the nearby plant-affected villages

"Ambulance referral services have been provided to 395 individuals from the nearby plant-affected villages," reflects a critical healthcare support initiative undertaken by DB Power Limited under its Corporate Social Responsibility (CSR) interventions in Chhattisgarh. This activity highlights the company's commitment to strengthening

rural health infrastructure and ensuring timely medical access for vulnerable populations.

In rural and semi-rural areas, one of the major challenges in healthcare delivery is the lack of prompt transportation during medical emergencies. Delays in reaching hospitals often result in preventable complications or fatalities, particularly in cases involving maternal health, accidents, chronic illnesses, and infectious diseases. By providing ambulance referral services, the CSR unit bridges the critical gap between village-level health needs and institutional medical facilities.

The fact that 395 individuals have benefited from this service indicates substantial outreach and responsiveness to community needs. This intervention not only improves emergency response systems but also enhances trust in healthcare services. It ensures that residents of plant-affected villages are not excluded from timely treatment due to transportation barriers.

From a rural infrastructure perspective, ambulance services form part of social infrastructure, complementing physical assets such as roads and hospitals. While road development improves connectivity, ambulance referral services operationalise that connectivity for life-saving purposes.

Additionally, this initiative reflects an inclusive CSR model that prioritises human well-being. By addressing healthcare accessibility. DB Power Limited contributes to improved health outcomes, reduced mortality risks, and strengthened community resilience. Thus, the provision of ambulance referral services represents a vital and compassionate component of sustainable rural development under the company's CSR framework.

Photo 16: Regular water sprinkling is carried out on the main roads near the plant-affected villages. Additionally, the main roads are cleaned through routine brooming to maintain cleanliness and improve the surrounding environment.

Regular water sprinkling is carried out on the main roads near the plant-affected villages. Additionally, the main roads are cleaned through routine brooming to maintain cleanliness and improve the surrounding environment," reflects an ongoing environmental management initiative undertaken by DB Power Limited as part of its Corporate Social Responsibility (CSR) interventions in Chhattisgarh. This activity highlights the company's commitment to mitigating environmental impacts associated with industrial operations and enhancing rural infrastructure conditions.

In areas surrounding power plants, vehicular movement, transportation of raw materials, and increased traffic can lead to dust generation, adversely affecting air quality and public health. Regular water sprinkling on main roads helps suppress airborne dust particles, thereby reducing respiratory risks, eye irritation, and other dust-related health issues among residents. This intervention is particularly important for vulnerable groups such as children, elderly persons, and individuals with pre-existing respiratory conditions.

Routine brooming complements water sprinkling by removing accumulated debris, soil particles, and waste from road surfaces. Clean roads not only improve aesthetics but also enhance safety by preventing skidding and reducing road hazards. Together, these measures contribute to improved environmental hygiene and better living conditions in plant-affected villages.

From a CSR perspective, this activity demonstrates proactive environmental stewardship. Rather than addressing only physical infrastructure gaps, the CSR unit has adopted preventive measures to control pollution and maintain cleanliness. Such initiatives strengthen community trust by showing responsiveness to concerns about the environmental impacts of industrial activity.

Moreover, improved road conditions enhance mobility and daily commuting, indirectly supporting economic and social activities. Thus, water sprinkling and road clearing represent an integrated rural infrastructure and environmental management intervention that promotes public health, environmental sustainability, and community well-being.

11.3. Impact on Community Activities Related to Health, Hygiene & Sanitation:

Good health is one of life's greatest blessings, and for those with poor health, life can become a wearying burden. In rural areas, particularly in economically disadvantaged states like Chhattisgarh, India, health issues are a significant concern.

Many people in these regions struggle to access quality healthcare services, and even when health centres are available, they often face various challenges, such as inadequate facilities and shortages of trained healthcare personnel.

One of the most significant challenges faced by rural communities in backward states like Chhattisgarh is the lack of access to adequate healthcare services. With a predominantly agrarian economy and a high percentage of the population living below the poverty line, these communities often lack the financial means to seek medical help. The healthcare infrastructure in these areas is generally underdeveloped, with limited availability of hospitals, clinics, and health centres. Even when facilities are present, they often lack essential medical equipment, supplies, and qualified staff, making it difficult for residents to receive necessary medical care.

Despite significant growth in healthcare units, many villages in backward states like Chhattisgarh continue to face serious challenges regarding the unavailability of institutional healthcare. Institutional healthcare refers to organised, structured healthcare services provided by hospitals, clinics, and health centres. Several issues contribute to the challenges faced by these institutions:

Recognizing the critical need for improved healthcare, hygiene, and sanitation services in rural areas, DB Power Ltd has undertaken several initiatives to address these challenges and improve the overall health status of communities in Chhattisgarh. DB Power Ltd has organized health camps in project-affected and railway corridor villages. These health camps aim to provide essential medical services to communities that lack access to healthcare facilities. By bringing healthcare services directly to these communities, DB Power Ltd helps improve health outcomes and reduce morbidity levels in rural areas. Health camps offer various services, including medical check-ups, diagnostic tests, treatment of common illnesses, and referrals to specialized care when necessary.

To further improve access to healthcare services, DB Power Ltd provides a referral ambulance service to nearby villages of the plant. This service aims to ensure that residents can reach healthcare facilities in emergencies or when they require specialized medical care. The availability of ambulance services is crucial in rural areas, where transportation options are limited and timely access to medical care can be a matter of life and death.

DB Power Ltd has taken steps to establish a primary health centre in rural areas. The centre serves as the first point of contact for individuals seeking medical care and plays a vital role in providing preventive and primary healthcare services. By establishing a primary health centre, DB Power Ltd aims to address the gap in healthcare infrastructure and ensure that rural residents have access to essential medical services close to home.

One of the key strategies employed by DB Power Ltd to improve health outcomes in rural areas is to foster community participation and health inclusion. The organization recognizes that sustainable improvements in healthcare can only be achieved by involving the community in the planning and implementation of health initiatives. By empowering communities to take an active role in their health and well-being, DB Power Ltd aims to create a sense of ownership and responsibility among residents, leading to better health outcomes.

The initiatives undertaken by DB Power Ltd in health, hygiene, and sanitation have significantly impacted rural communities in Chhattisgarh. Some of the key benefits and outcomes of these initiatives include: The health camps, referral ambulance services, and primary health Arogya centres established by DB Power Ltd have improved health outcomes in rural areas. By providing access to essential medical services, these initiatives have helped reduce morbidity levels and improve the overall health status of communities. DB Power Ltd's efforts have improved access to healthcare services in rural areas, ensuring that residents can receive medical care when needed.

The availability of health camps, ambulance services, and primary health centres has reduced the burden of travel and financial constraints on rural residents, enabling them to seek medical help more easily.

DB Power Ltd's focus on community participation and health inclusion has empowered rural communities to take an active role in their health and well-being. By involving communities in the planning and implementation of health initiatives, DB Power Ltd has created a sense of ownership and responsibility among residents, leading to sustainable improvements in healthcare. The establishment of primary health centres and referral ambulance services by DB Power Ltd has strengthened the healthcare infrastructure in rural areas. By addressing the gaps in healthcare facilities and services, these initiatives have improved the capacity of rural communities to address health challenges and access medical care.

While the initiatives undertaken by DB Power Ltd have significantly improved healthcare in rural areas, several challenges remain that require further attention and action. Addressing these challenges will be crucial to ensuring the long-term sustainability and effectiveness of healthcare initiatives in rural communities.

The recruitment and retention of qualified healthcare professionals in rural areas remain a significant challenge. Efforts should be made to provide incentives and support to healthcare professionals willing to work in remote areas, including competitive salaries, professional development opportunities, and improved working conditions. Continued efforts are needed to strengthen health education and awareness programs in rural communities. By increasing awareness of preventive healthcare practices and the importance of seeking medical care, communities can be empowered to take control of their health and well-being.

Improving coordination and collaboration between healthcare providers, government agencies, and community organizations is essential to ensure the efficient delivery of healthcare services in rural areas. Efforts should be made to foster partnerships and collaboration to address healthcare challenges and improve service delivery.

Regular monitoring and evaluation of healthcare initiatives are crucial to assessing their impact and effectiveness. By collecting and analyzing data on health outcomes, healthcare providers can identify areas for improvement and implement strategies to enhance the quality of care and service delivery.

The initiatives undertaken by DB Power Ltd in health, hygiene, and sanitation have significantly improved rural communities in Chhattisgarh. By addressing the challenges faced by rural healthcare systems and fostering community participation, DB Power Ltd has helped improve health outcomes, enhance access to healthcare, and strengthen healthcare infrastructure. Continued efforts and collaboration are essential to ensure the long-term sustainability and effectiveness of healthcare initiatives in rural areas, ultimately improving the quality of life and well-being of rural communities.

11.4. Activities Carried Out under Education and Skill Development:

Education and skill development are crucial components of Corporate Social Responsibility (CSR) initiatives, especially in a country like India, where educational disparities significantly impact socio-economic outcomes. Education is a fundamental element of both the United Nations Millennium Development Goals and the Sustainable Development Goals, underscoring its global importance. Despite progress in some areas, there remain significant gaps in educational outcomes between developed and developing countries.

India's organized sector employs only 34 million people, a small fraction of the total population, reflecting the broader challenges within India's literacy rate and education system. In particular, rural education has faced numerous challenges, even as the system undergoes various changes and transformations. While there have been improvements in rural education over the years, guaranteeing quality education remains a significant challenge for the government. One of the major issues in rural education is the lack of accessible schools.

Many villages do not have local schools, requiring students to travel to other villages to attend classes. This often results in lower Enrollment rates, particularly for girls, as parents are hesitant to send their daughters far from home. The problem is exacerbated by poverty; government schools often lack resources, and private schools are too expensive for many families. Consequently, dropout rates at the secondary level are high, perpetuating the cycle of educational underachievement in rural areas.

The concept of education itself has deep roots. The English word "education" is derived from two Latin words: *educare* (or *educere*) and *educatum*. *Educare* means to train or mould and implies drawing out the latent faculties of an individual, from inward to outward. *Educatum* refers to the act of teaching and the principles and practices involved. The role of the educator is crucial in developing the potential of students, who are often unaware of their capabilities.

In Hindi, "education" translates to "Shiksha," originating from the Sanskrit word "Shash," which means to discipline, control, order, direct, or rule. In traditional contexts, education was about controlling or disciplining behaviour. In Sanskrit, "Shiksha" is one of six branches of Sutra literature, which includes Shiksha, Chhanda, Vyakarana, Nirukta, Jyotisha, and Kalpa, all aimed at mastering the Vedas. Shiksha specifically focuses on the rules of pronunciation.

In India, skill development is achieved through two main institutional structures: formal and informal. The formal structure encompasses higher technical education in colleges, vocational training in post-secondary schools, technical skills in specialized institutions, and apprenticeship programs. To support social development, the Indian government has implemented various schemes aimed at providing basic employable skills.

As an agrarian society, over 70% of India's population resides in rural areas, relying heavily on agriculture and related sectors for their livelihood. For any society, the ability of its individuals to adapt to social change, contribute to economic growth, and engage in development processes is essential.

Therefore, a nation seeking development must focus on building institutions, fostering entrepreneurship, and enhancing skill development to drive change and support evolving societal structures and livelihood profiles.

After gaining independence in the 1940s, India was still grappling with the impacts of imperialism and remained a developing nation. The constraints and opportunities for rural development are deeply rooted in the agrarian nature of Indian society. The 20th-century Industrial Revolution brought about significant changes, transforming agrarian societal structures that were deeply embedded in the agricultural sector.

The Industrial Revolution shifted the responsibility for education from the home to formal institutions, creating a rural-urban divide, especially in agrarian societies. It created a demand for educational agents outside the home. Schools were tasked with two primary objectives: (1) developing human resources, particularly men, with skills suited for the manufacturing sector, and (2) taking on part of the home's role by providing value-based and moral education. This led to increased separation across sectors and left many rural youths lacking in productive and technical skills. Consequently, young people from rural areas often struggle to find employment, forcing them to migrate to urban areas in search of work.

The migration patterns vary depending on the region, opportunities, and socio-economic status of the families. The poorest families, especially those who are landless or own small, low-quality plots of land, are more likely to migrate. Such migrations can negatively impact the quality of life due to poor health, lack of education, inadequate skill development, and social pressures, leading to the erosion of moral values. In the 1950s, nearly all national governments in Asia introduced community development programs aimed at achieving self-reliance and development through local institutions and the active participation of rural communities.

The core elements of these programs included:

People's Participation: Encouraging local communities to actively participate in development projects to ensure that the initiatives met their specific needs and fostered a sense of ownership.

Democratic Decentralisation: Distributing decision-making powers to local levels to facilitate more responsive and efficient governance.

Transfer of Technology: Introducing and disseminating technology to improve productivity and living standards in rural areas.

Self-help Efforts: Encouraging communities to leverage their resources and capabilities to achieve sustainable development. The rural development strategies of the 1950s and 1960s primarily focused on "growth-first" models. Despite robust economic growth during the 1960s, the benefits of this growth did not trickle down to the broader population. As a result, many people continued to live in abject poverty, with rising unemployment and increasing inequalities.

Hence, education and skill development are pivotal to India's socio-economic progress. By addressing the challenges faced by the rural education system and enhancing skill development initiatives, India can work towards bridging the gap between urban and rural areas. Through effective CSR interventions, businesses can contribute to creating a more equitable and prosperous society, aligning with global development goals and fostering sustainable growth for the nation.

Photo 17: A Beauty Parlour and Tailoring Training Centre is being operated in Village Dadadarha to promote skill development and livelihood opportunities.

Photo 18: *A Beauty Parlour and Tailoring Training Centre are being operated in Village Badadarha to promote skill development and livelihood opportunities, and a Tailoring Training Centre is being run in Village Tundri to enhance vocational skills and support income generation among residents,"* reflects a livelihood-oriented Corporate Social Responsibility (CSR) initiative undertaken by DB Power Limited in Chhattisgarh. Although primarily categorised under skill development and women empowerment, these initiatives are closely connected to rural infrastructure and socio-economic strengthening.

In rural and plant-affected villages, limited employment opportunities often result in economic dependency and underutilization of local talent, particularly among women and youth. By establishing structured training centres within the village infrastructure, the CSR unit has created accessible platforms for vocational learning. The Beauty Parlour and Tailoring Training Centre at Badadatha provides practical, market-oriented skills that can lead to self-employment or small-scale entrepreneurship. Similarly, the Tailoring Training Centre at Tundri equips participants with employable skills that can generate steady income through garment stitching and alteration services.

These centres function as social infrastructure spaces where knowledge transfer, skill enhancement, and community interaction take place. They contribute to human capital formation, which is a key driver of sustainable development. The focus on tailoring and beauty services is particularly relevant in rural markets where demand for such services is consistent and locally sustainable.

From a gender perspective, these initiatives empower women by enhancing financial independence and self-confidence. Economic participation strengthens their decision-making capacity within households and communities.

Thus, the operation of these training centres represents a strategic CSR intervention that integrates skill development, income generation, and community infrastructure support, fostering inclusive rural development in plant-affected villages.

Photos 19 and 20: Certificates were awarded to 52 girls and women upon successful completion of Tailoring and Beauty Parlour training programmes conducted at the DBPL Skill Development Centre.

The statement, *"Certificates were awarded to 52 girls and women upon successful completion of Tailoring and Beauty Parlour training programmes conducted at the DBPL Skill Development Centre,"* reflects a significant livelihood-oriented initiative undertaken by DB Power Limited under its Corporate Social Responsibility (CSR) interventions in Chhattisgarh. This activity highlights the company's commitment to women empowerment, skill development, and sustainable rural infrastructure strengthening.

The DBPL Skill Development Centre functions as a form of social infrastructure within plant-affected villages. While physical infrastructure such as roads and water systems addresses material needs, skill development centres build human capital—an essential component of long-term socio-economic growth. By offering structured training in tailoring and beauty parlour services, the CSR unit has created opportunities for income generation, particularly for women who may otherwise have limited access to formal employment.

The awarding of certificates signifies more than the completion of a course; it formalizes the acquisition of vocational skills and enhances employability. Certification increases credibility, enabling trainees to seek self-employment, establish micro-enterprises, or access work opportunities in nearby markets. It also boosts confidence and social recognition, empowering women to participate more actively in household decision-making and community affairs.

The participation of 52 beneficiaries indicates measurable outreach and community engagement. Such programmes contribute to financial independence, reduce economic vulnerability, and promote gender-inclusive development. Additionally, trained women often serve as role models, encouraging other community members to pursue vocational training.

Thus, this initiative demonstrates how CSR interventions extend beyond physical assets to include capacity building and human resource development, fostering sustainable livelihoods and inclusive growth in rural communities surrounding the DB Power plant.

Photos 21 & 22: Educational and stationery materials, such as Navodaya Guide and Practice Books, whiteboards, chalk, and dusters, were provided to 25 students enrolled at the DBPL Coaching Centre to support their preparation for the Jawahar Navodaya Vidyalaya Class 6 entrance examination.

Education is a powerful instrument for shaping the future of children and fostering long-term community development. In rural areas, however, access to quality education, competitive preparation resources, and academic guidance remains limited. Recognising this disparity, DB Power Limited, under its Corporate Social Responsibility (CSR) initiative, has undertaken a significant intervention to enhance educational access in the villages of Badadarha and Tundri in Chhattisgarh. The company has established dedicated coaching centres aimed at preparing students for the Class 6 entrance examination of the Jawahar Navodaya Vidyalaya (JNV)

Jawahar Navodaya Vidyalayas are a network of residential schools established by the Government of India to provide high-quality education to talented students, primarily from rural backgrounds, at no cost. Admission to these institutions is highly competitive and based on a rigorous entrance examination that evaluates students' mental ability, arithmetic skills, and language proficiency. For many rural children, securing admission to a JNV can be transformative, offering access to quality education, holistic development, and expanded career opportunities. However, due to limited exposure, inadequate study materials, and the absence of structured guidance, many deserving students struggle to compete effectively.

Understanding this gap, DB Power Limited established coaching centres in Badadarha and Tundri to create equitable learning opportunities. The primary objective of these centres is to provide structured academic support to students from underprivileged backgrounds. The coaching programme focuses on strengthening foundational competencies in mathematics, language, and mental ability —key areas assessed in the JNV entrance examination. Through systematic teaching, regular practice sessions, and mock examinations, the centres aim to build both competence and confidence among students.

To ensure quality delivery, experienced teachers and mentors have been engaged to provide personalized guidance and clarify doubts. The initiative extends beyond exam preparation by emphasizing overall personality development, including communication skills, critical thinking, and problem-solving abilities. Interactive teaching methods, group discussions, and periodic assessments are incorporated to foster active learning and monitor progress.

DB Power Limited has also invested in establishing a conducive learning environment by equipping classrooms with essential teaching aids and study materials. Awareness campaigns were conducted among parents and community members to highlight the benefits of JNV education and encourage enrolment in the coaching programme. Regular monitoring and evaluation mechanisms have been instituted to assess programme effectiveness and facilitate continuous improvement.

The impact of this initiative is already evident. Students are demonstrating improved academic performance, enhanced self-confidence, and a renewed enthusiasm for learning. Beyond examination success, the coaching centres are nurturing a culture of aspiration and educational ambition within the community.

By investing in rural education, DB Power Limited reinforces its commitment to sustainable and inclusive development. The establishment of coaching centres in Badadarha and Tundri exemplifies how CSR can catalyse long-term social transformation.

As increasing numbers of rural students gain access to quality preparatory support, the benefits will extend beyond individual achievement to community upliftment and intergenerational progress.

This initiative stands as a model of responsible corporate engagement in education, contributing meaningfully to a more equitable and empowered society.

Photos 23 & 24: Self-Help Group (SHG) members in Villages Badadarha and Tundri are undertaking income-generating activities

Self-Help Group (SHG) members in Villages Badadarha and Tundri are undertaking income-generating activities," reflects a significant livelihood-oriented initiative facilitated by DB Power Limited under its Corporate Social Responsibility (CSR) interventions in Chhattisgarh. This activity highlights the company's commitment to promoting sustainable rural livelihoods and strengthening socio-economic infrastructure in plant-affected communities.

Self-Help Groups serve as grassroots institutions that enable collective savings, credit access, and entrepreneurship among rural women. By supporting SHGs, the CSR unit fosters financial inclusion and economic participation, particularly among women who may otherwise have limited employment opportunities. Income-generating activities such as tailoring, beauty services, small retail operations, handicrafts, and food processing contribute to diversified livelihood options within the village economy.

From a rural infrastructure perspective, livelihood promotion constitutes social and economic infrastructure development. While physical infrastructure like roads and water systems enhances accessibility, income-generating initiatives build human capital and financial resilience. The CSR support may include skill training, provision of equipment, seed capital, market linkage facilitation, and capacity-building workshops, thereby strengthening the operational sustainability of SHGs.

Economically, such activities reduce household vulnerability by supplementing income sources. Socially, they enhance women's decision-making power and community participation. Increased earnings often translate into better educational and health outcomes for families, creating a multiplier effect on overall community well-being.

Furthermore, SHG-based entrepreneurship fosters collective responsibility and mutual support, strengthening social cohesion. By enabling SHG members in Badadarha and Tundri to undertake income-generating activities, DB Power Limited demonstrates a strategic CSR approach that integrates empowerment, economic sustainability, and inclusive rural development, thereby contributing to long-term community resilience and self-reliance.

11.5. Impact of Skill Development Activities on Communities:

In the dynamic landscape of today's global economy, skill development has emerged as a crucial element for sustainable growth and development. DB Power Ltd has taken significant strides in enhancing vocational training programe at the village level, making a profound impact on local communities. This initiative aligns with the global Sustainable Development Goals (SDGs) set by the United Nations, which emphasise empowering younger generations to actively participate in sustainable development.

The SDGs, launched by the United Nations in 2016, provide a blueprint for achieving a better and more sustainable future for all. These 17 interconnected goals, accompanied by 169 specific targets, highlight the need for inclusive growth and emphasize the involvement of young people as key stakeholders.

With 43% of the global population under the age of twenty-five, and a significant portion residing in developing countries, engaging youth in the development agenda is not only a necessity but also a right.

Young people play a crucial role in shaping the future, as they will live with the consequences of today's decisions. By equipping them with the necessary skills and knowledge, they can become active participants in driving sustainable change. Ignoring their potential contributions can pose risks to achieving long-term sustainability. Instead, they should be embraced as partners in realizing the SDGs, turning potential challenges into opportunities.

India, as one of the youngest nations in the world, stands at the forefront of this demographic transition. With 54% of its population below the age of 25 and over 62% in the working-age group (15-59 years), India is uniquely positioned to harness the power of its youth. The average age of the Indian population is approximately 29 years, which is significantly lower than in developed countries such as the US, Japan, and European nations.

In the coming years, India is expected to witness a substantial increase in its labor force, contrasting with a decline in industrialized countries. This presents both a challenge and an opportunity—a "demographic dividend" that can propel the nation toward unprecedented economic growth. However, to realize this potential, the workforce must be equipped with employable skills and knowledge.

India has long grappled with a significant skill gap, hindering its economic progress. The disparity between the demand for skilled manpower and the available supply has become a major impediment to national development. Each year, over ten million individuals join the workforce, but fewer than 25% possess the skills necessary to meet the demands of various sectors.

A recent survey reveals that while 90% of employment opportunities require vocational skills, most young people leaving school or college possess only theoretical knowledge.

They may be academically qualified, but they lack the practical skills needed for employment. This skill deficit poses a considerable challenge to India's ambition of becoming a 5 trillion-dollar economy.

To address this pressing issue, DB Power Ltd has taken proactive measures by launching several skill development initiatives as part of its Corporate Social Responsibility (CSR) programs. These initiatives aim to bridge the gap between academic education and practical skills, equipping individuals with the tools they need to succeed in the job market.

DB Power Ltd's vocational training programs have been instrumental in transforming the lives of individuals in rural communities. By focusing on skill development at the village level, the company ensures that even those in remote areas have access to quality training and opportunities for personal and professional growth. The vocational training programs cover a wide range of skills, from traditional crafts to modern technologies. This comprehensive approach caters to diverse interests and aspirations, enabling participants to choose a path that aligns with their passions and career goals. By providing training in sectors such as agriculture, healthcare, information technology, and manufacturing, DB Power Ltd equips individuals with the skills needed to thrive in today's competitive job market.

The impact of DB Power Ltd's skill development initiatives extends beyond individual empowerment. By equipping youth with practical skills, the company contributes to community development and economic growth. Skilled individuals are more likely to secure stable employment, support their families, and contribute to the local economy. This creates a positive ripple effect, leading to improved living standards and increased opportunities for all. Moreover, these initiatives foster a sense of self-reliance and confidence among participants. As they acquire new skills, individuals gain the ability to explore entrepreneurial ventures and contribute to the economic development of their communities.

This empowerment of youth is a vital component of building sustainable communities and achieving the SDGs. DB Power Ltd's skill development programs also address several socio-economic challenges faced by rural communities. By providing training and employment opportunities, the company helps alleviate poverty and reduce unemployment rates. This, in turn, mitigates the migration of young individuals to urban areas in search of work, allowing them to contribute to the development of their native villages.

Furthermore, the emphasis on vocational training ensures that individuals are equipped with skills that are in demand across various industries. This alignment between training and market needs enhances employability and reduces the skills mismatch that has long plagued the Indian job market.

The success of DB Power Ltd's skill development initiatives underscores the importance of public-private partnerships in driving sustainable development. Collaborations between corporations, government agencies, and non-governmental organizations are essential for creating comprehensive skill development programs that address the diverse needs of communities.

By working together, stakeholders can pool resources, share expertise, and create innovative solutions to the challenges of skill development. These partnerships play a crucial role in scaling initiatives, reaching underserved communities, and ensuring the sustainability of skill development programs.

In conclusion, DB Power Ltd's commitment to skill development at the village level has had a transformative impact on local communities. By aligning its initiatives with the Sustainable Development Goals and empowering youth with practical skills, the company is driving positive change and contributing to long-term sustainability.

As India continues to navigate its demographic transition, the emphasis on skill development is more critical than ever. By addressing the skill gap and harnessing the potential of its young population, India can unlock the full potential of its demographic dividend.

With the right investments in education and training, India can become the skill capital of the world, leading the way in sustainable development and economic growth. DB Power Ltd's efforts serve as a shining example of how corporations can play a pivotal role in shaping the future by empowering communities and creating pathways to success. Through its skill development initiatives, the company is not only transforming lives but also contributing to the broader goal of building a sustainable and prosperous future for all.

11.6. Cultural and Social Activities & Events under the Welfare program:

Corporate Social Responsibility (CSR) has become a significant aspect of business operations in contemporary times, where companies take active roles in addressing social, economic, and environmental issues in the communities they impact. DB Power Limited (DBPL), a leading entity in the energy sector, has made a strong commitment to enhancing the welfare of the plant-affected villages near its operational areas, particularly in the regions of Badadarha, Rampur, and Tundri. Recognising its responsibility beyond just business operations, DBPL has adopted an inclusive approach, integrating the welfare and development needs of the local communities into its CSR agenda.

This holistic initiative underscores the company's philosophy of not just economic growth but also sustainable and equitable community development. The villages of Badadarha, Rampur, and Tundri have faced several socio-economic challenges, particularly as they have been affected by the industrial expansion and the establishment of DBPL's power plant. The impact on traditional livelihoods, disruption of local socio-cultural dynamics, and environmental concerns have necessitated a responsive and sensitive approach from DBPL.

Considering these challenges, the company's CSR initiatives aim to mitigate adverse impacts while fostering positive and long-term community development. Under the thrust area of *Cultural and Social Events under the Welfare Program*, DBPL has implemented a range of activities designed to support community well-being, strengthen social cohesion, and preserve cultural heritage.

A key focus of DBPL's welfare initiatives has been the empowerment and upliftment of vulnerable groups within these communities, particularly women and economically disadvantaged families. Recognizing the importance of economic self-sufficiency for women, the company has taken steps to provide resources such as sewing machines to young women getting married in these villages. This gesture is not merely symbolic but aims to foster skills development and entrepreneurship among women, enabling them to contribute economically to their households. By providing sewing machines as part of wedding gifts, DBPL promotes the idea of sustainability and long-term support, offering young women a tool for financial independence.

Additionally, DBPL's welfare program includes various forms of direct financial assistance to villagers for household procurement. This includes monetary aid for purchasing essential appliances like refrigerators, which enhances the quality of life and provides convenience to rural households. The company's efforts extend beyond immediate financial assistance, also encompassing cultural and social engagement activities aimed at building strong, positive relationships within the community.

By organizing spiritual tours to significant cultural sites like Puri and Bhubaneswar, DBPL aims to strengthen social bonds and foster a sense of unity and shared experience among the villagers. DBPL has also taken an active role in supporting traditional and cultural practices, recognising their importance in maintaining community identity and cohesion. This includes contributions to religious ceremonies and aiding in rites of passage, such as the "Daskarm" ritual, which is an important cultural practice in the region. By supporting families in performing these ceremonies, DBPL acknowledges the cultural significance of these events and the need for preserving such traditions, even amidst the rapidly changing social and economic landscape brought about by industrialisation.

Furthermore, the company has invested in the preservation and renovation of local cultural sites, such as temples and religious idols.

The renovation of dev idols at the Kurupath temple in Tundri is one example of DBPL's commitment to preserving the region's cultural heritage.

These activities not only help maintain historical and cultural landmarks but also foster community pride and spiritual well-being, which are crucial elements of a resilient and healthy society.

Overall, DB Power Limited's initiatives under the *Cultural and Social Events under the Welfare Program* reflect a comprehensive approach to CSR, emphasising both tangible and intangible aspects of community development. By addressing economic needs, supporting cultural traditions, and fostering social harmony, DBPL aims to build a strong foundation for sustainable development in its plant-affected villages. Through these efforts, the company strives to maintain a balanced relationship with the communities it operates in, aligning its corporate objectives with the broader goal of inclusive and holistic rural development.

Photos 25: A total of 463 villagers participated in and benefited from the religious tour to Puri and Bhubaneswar, organised as part of the community welfare initiative.

A total of 463 villagers participated in and benefited from the religious tour to Puri and Bhubaneswar, organised as part of the community welfare initiative," reflects a socio-cultural outreach activity undertaken by DB Power Limited under its Corporate Social Responsibility (CSR) framework in Chhattisgarh. Although not directly linked to physical infrastructure, this initiative forms part of the broader social infrastructure and community development strategy implemented in plant-affected villages.

Religious and cultural tours play an important role in rural communities, where collective spiritual experiences strengthen social bonds, emotional well-being, and cultural identity. By facilitating a pilgrimage to Puri and Bhubaneswar, the CSR unit provided villagers—many of whom may not have the financial means or logistical support to undertake such travel—with an opportunity for spiritual fulfilment and cultural exposure. For elderly participants and economically disadvantaged families, such initiatives hold significant emotional and social value.

The participation of 463 villagers indicates substantial outreach and inclusivity. Collective participation enhances community cohesion, mutual trust, and shared identity among plant-affected villages. In contexts where industrial projects may create social transitions or disruptions, community-centred welfare activities help reinforce positive corporate-community relationships.

From a CSR perspective, this initiative aligns with the philanthropic and ethical dimensions of corporate responsibility. It demonstrates sensitivity to local traditions and respect for community aspirations beyond material needs. Moreover, organized group travel requires coordination, safety planning, and logistical management, reflecting structured implementation.

Thus, the religious tour initiative represents a holistic CSR intervention that supports social harmony, cultural preservation, and emotional well-being, contributing to overall community development and strengthening the bond between DB Power Limited and the surrounding rural population.

Photos 26: Gift sets—including a refrigerator, steel almirah, dinner set, and gas stove—were provided to 22 girls (15 + 7) from plant-affected villages by the DBPL management on the occasion of their marriage

Gift sets – including a refrigerator, steel almirah, dinner set, and gas stove – were provided to 22 girls (15 + 7) from plant-affected villages by the DBPL management on the occasion of their marriage," reflects a socially supportive initiative undertaken by DB Power Limited under its Corporate Social Responsibility (CSR) framework in Chhattisgarh. This intervention highlights the company's commitment to social welfare and community support in plant-affected regions.

Marriage in rural communities often involves significant financial responsibility for families, particularly those from economically weaker sections. By providing essential household items such as a refrigerator, steel almirah, dinner set, and gas stove, the CSR unit offers practical assistance that reduces the financial burden on families. These items contribute to establishing a basic household setup, supporting newly married women in beginning their marital life with dignity and stability.

From a rural infrastructure perspective, such assistance can be interpreted as strengthening household-level social infrastructure. The provision of appliances like refrigerators and gas stoves promotes improved living standards, better food preservation, and safer cooking practices. A gas stove, in particular, supports cleaner cooking methods, reducing exposure to indoor air pollution and enhancing women's health and safety.

Socially, the initiative demonstrates sensitivity to cultural practices and life-cycle events within the community. By supporting 22 beneficiaries, the CSR intervention reflects inclusivity and targeted outreach to plant-affected villages. Such gestures foster goodwill, strengthen community relations, and reinforce the company's social license to operate.

However, while philanthropic in nature, such initiatives should ideally be complemented by long-term empowerment programmes such as education, skill development, and income generation to ensure sustainable socio-economic progress.

Overall, this activity represents a compassionate CSR intervention aimed at enhancing dignity, social support, and improved living standards among vulnerable households in plant-affected communities.

Photos 27: Essential grocery supplies were facilitated for underprivileged families, and water tanker services were arranged to assist them in conducting social and community events.

The above activity reflects a welfare-oriented intervention undertaken by DB Power Limited under its Corporate Social Responsibility (CSR) initiatives in Chhattisgarh. This activity demonstrates the company's commitment to addressing immediate social and humanitarian needs within plant-affected villages while strengthening social infrastructure.

The distribution of grocery items to economically weaker families represent a direct support mechanism aimed at reducing financial stress and ensuring food security. In rural areas, vulnerable households often face seasonal income instability, rising living costs, or unexpected social obligations. Providing essential food supplies helps stabilize household consumption, particularly during periods of economic hardship. Such interventions contribute to improved nutritional security and social protection for marginalized groups.

The provision of water tanker services for social functions further reflects responsiveness to community needs. In many rural settings, access to adequate water during community gatherings, religious ceremonies, or family events can be limited due to infrastructural constraints. By arranging water tanker support, the CSR unit addresses a practical gap in rural service delivery. This also highlights the company's sensitivity to local customs and social practices.

From a rural infrastructure perspective, these interventions strengthen community-level social infrastructure. While roads, schools, and water systems form the physical backbone of development, social support systems contribute to social cohesion, dignity, and collective well-being. Such activities enhance trust between the corporation and local communities, reinforcing the company's social license to operate.

Overall, the facilitation of grocery items and water tanker services reflects a compassionate and community-centred CSR approach that supports vulnerable households, promotes inclusivity, and contributes to social harmony in plant-affected villages.

11.7. Impact on the Community of Cultural and Social Events under the Welfare Program

DB Power Limited (DBPL), through its Corporate Social Responsibility (CSR) initiatives, has made significant contributions to the social and cultural upliftment of the communities in and around its plant-affected villages.

These efforts focus on fostering social cohesion, improving livelihoods, and preserving cultural traditions. Under the *Cultural and Social Events under the Welfare Program*, DBPL has implemented a variety of activities, each of which has had a notable impact on the local communities, particularly in Badadarha, Rampur, and Tundri. The renovation of the God idols at the Kurupath temple in Tundri is one of the key cultural initiatives undertaken by DBPL. Temples and religious idols are integral to the spiritual and cultural identity of rural communities in India. The renovation of these idols has helped preserve the community's religious practices, instilling a sense of pride and connection among the villagers. This initiative reflects DBPL's commitment to preserving the local heritage, as it ensures that religious and cultural practices continue without disruption (Kumar, 2022). The restoration of these idols has likely contributed to maintaining the social fabric and spiritual unity of the community, fostering a collective identity and a sense of belonging.

DBPL's provision of grocery items to families, including Sitaram Yadav (Rampur), Sakharam Sarthi (Badadarha), and Banshidhar Sahu & Girja Bai Sahu (Tundri), to assist them in performing the Daskarm ritual demonstrates the company's sensitivity to cultural practices. The Daskarm ritual is significant for the local communities, and by providing essential supplies, DBPL ensured that families could partake in this cultural ceremony without financial strain. This initiative not only promoted cultural continuity but also addressed immediate needs, thereby improving the overall well-being of the households involved (Sharma, 2023). for the villagers to bond and strengthen social ties. These tours allowed individuals from different villages to come together, fostering unity and mutual respect. Such experiences promote social harmony and a sense of shared identity, especially in regions where communities may have been divided due to industrialization and migration. These tours not only encouraged cultural exchange but also offered a much-needed break from the daily challenges of rural life, contributing to the mental and emotional well-being of the participants (Rao, 2021).

DBPL's provision of 10 sewing machines and financial assistance of Rs. 5,000 each to six villagers for purchasing refrigerators marks a significant step toward economic empowerment. Providing sewing machines to young women in plant-affected villages, especially in the context of marriage, promotes skill development and financial independence. Similarly, the financial assistance for purchasing refrigerators addresses a basic need, improving the quality of life for families. These initiatives empower individuals, particularly women, to enhance their economic standing and become more self-sufficient. Such interventions can have a lasting impact on the community by improving the livelihoods of the marginalized and fostering greater economic resilience (Patel, 2020). The ongoing dialogue between DBPL management and village representatives from Badadarha, Rampur, and Tundri regarding development initiatives ensures that the needs of the community are heard and addressed. This collaborative approach enhances trust and cooperation between the company and the villagers. It also creates a platform for discussing the socio-economic challenges faced by the community and finding mutually beneficial solutions. This participatory model of development helps ensure that the CSR initiatives are aligned with the actual needs of the community, thus making them more effective and impactful (Khan, 2021).

12.0. Conclusion

The impact of DB Power Limited's CSR initiatives under the *Cultural and Social Events under the Welfare Program* is far-reaching, contributing to the cultural preservation, social cohesion, and economic empowerment of the affected communities. By focusing on both immediate needs and long-term development goals, DBPL has demonstrated a holistic approach to community welfare. These activities have not only improved the quality of life for the villagers but also helped strengthen their social fabric and cultural identity. The company's CSR initiatives have set a benchmark for integrating corporate development with community well-being, ensuring sustainable and inclusive growth for the rural population.

In contemporary India, corporate social responsibility (CSR) has evolved beyond mere charity; it has become an essential tool for businesses to contribute meaningfully to the well-being of society. As businesses seek to maximize shareholder wealth, there is increasing recognition of the need to simultaneously fulfill their obligations to other stakeholders, including the communities in which they operate. This is particularly crucial in rural India, where nearly 70% of the population still resides and faces significant challenges in access to basic infrastructure, education, healthcare, and empowerment. While the Indian government plays a key role in promoting rural development, its resources are often constrained, making public-private partnerships (PPP) and corporate involvement vital for addressing the infrastructure and social needs of rural areas. In this context, DB Power Ltd, a leading power generation company, has taken commendable steps through its CSR initiatives, particularly in the rural areas surrounding its plant in Raigarh, Chhattisgarh.

The rural infrastructure improvements made by DB Power Ltd are the foundation of their CSR strategy, which has significantly impacted the lifestyle and living conditions of the villagers. Through its rural infrastructure program, the company has contributed to the development of critical facilities such as rural roads, water supply systems, housing, and electrification. These interventions have played a pivotal role in transforming the quality of life for people living in the affected villages of Badadarha, Rampur, and Tundri. Rural roads have facilitated better connectivity, easing access to markets, healthcare, and educational institutions. Reliable water supply systems have reduced the dependency on manual water collection, leading to better hygiene and overall health conditions. The electrification of these villages has not only improved the standard of living but has also provided opportunities for small-scale enterprises to thrive, thus contributing to local economic development. However, infrastructure development alone is not enough to foster sustainable rural development.

The human development aspects—education, skill development, healthcare, and women's empowerment—are equally crucial for creating a thriving rural ecosystem. DB Power Ltd has thus invested heavily in these areas to ensure the holistic development of the communities they serve.

The cornerstone of DB Power Ltd's CSR activities in FY 2024-2025 lies in its rural infrastructure program. This initiative has sought to address the infrastructural deficits faced by rural communities, many of which are still grappling with basic needs such as roads, electricity, and clean water. By focusing on rural roads, the company has significantly improved transportation and mobility, which is vital for the socio-economic upliftment of these villages. Furthermore, DB Power Ltd's efforts in providing rural electrification have been transformative, reducing energy poverty and opening up new avenues for economic activities, including local businesses and educational facilities. The construction of water supply systems has enhanced access to clean water, thereby mitigating health risks associated with unsafe water sources. The holistic nature of DB Power Ltd's infrastructure interventions has been crucial in improving the villagers' living conditions and making the communities more resilient to challenges such as climate change and rural-urban migration.

In line with its vision to improve the lives of rural communities, DB Power Ltd has taken significant strides in the field of education and skill development. Education is an essential driver of social mobility, and DB Power Ltd has recognized the pressing need for quality education in the villages affected by its operations. The company has focused on improving educational infrastructure by building and upgrading schools, providing scholarships, and supporting educational materials and supplies. This has enabled children in these villages to access better educational opportunities, thereby contributing to breaking the cycle of poverty and ensuring that future generations have the skills and knowledge to improve their economic prospects.

Moreover, skill development has been another key focus area for DB Power Ltd in FY 2024-2025. Recognizing that education alone is not sufficient to ensure long-term socio-economic mobility, the company has implemented vocational training programs for young adults. These programs equip villagers with skills that are directly applicable to local economic activities, such as tailoring, carpentry, electrical work, and other trades. By fostering skill development, DB Power Ltd has empowered the rural population to become self-reliant and reduce their dependency on seasonal agricultural work or low-wage labour. These initiatives have created a workforce that is better prepared for the evolving job market, thereby contributing to the overall economic development of the region.

Health and sanitation remain significant challenges in rural India, where access to healthcare facilities is limited, and hygiene practices often lag behind urban standards. DB Power Ltd has made substantial contributions to improving health conditions in the villages of Badadarha, Rampur, and Tundri through its health, hygiene, and sanitation programs. The company has built health centres and supported local clinics, ensuring that essential healthcare services are accessible to the rural population. Additionally, DB Power Ltd has organized health camps that provide medical check-ups, vaccinations, and health education, particularly focusing on preventive care.

In terms of sanitation, DB Power Ltd has taken a proactive role in constructing toilets and promoting sanitation awareness. The company's efforts to improve hygiene in these villages have significantly reduced the incidence of waterborne diseases, improving the overall health of the community. These interventions have not only contributed to better physical health but have also fostered greater awareness of hygiene practices, which is crucial in preventing diseases and improving the quality of life in the long term.

Women empowerment is another vital component of DB Power Ltd's CSR activities. The company recognizes that empowering women is key to the socio-economic development of rural areas.

Through its initiatives, DB Power Ltd has provided women with opportunities for skill development, income generation, and financial independence. For example, the provision of sewing machines to women in plant-affected villages has enabled them to create small businesses, thereby enhancing their economic standing and social status. Moreover, DB Power Ltd has organized awareness programs on women's health, rights, and education, fostering a more gender-equitable environment in these communities. By promoting women's participation in decision-making processes and providing them with the tools to succeed, DB Power Ltd is helping to break down traditional gender barriers and create a more inclusive society.

The company's social welfare and development programs have been pivotal in improving the overall well-being of the villagers. DB Power Ltd's social initiatives have focused on providing financial assistance, improving access to social services, and enhancing the quality of life through various welfare programs. This includes distributing grocery items, supporting cultural practices such as the Daskarm ritual, and organizing spiritual tours to strengthen social cohesion among villagers. The company's efforts have had a positive impact on the social fabric of these rural communities, fostering unity, mutual support, and collective development.

In FY 2024-2025, DB Power Ltd has demonstrated an exemplary commitment to rural development through its comprehensive CSR initiatives. The company's efforts in infrastructure development, education, health, women empowerment, and social welfare have had a tangible impact on the lives of the rural population in the areas surrounding its plant. These initiatives have not only improved the quality of life for individuals and families but have also contributed to the creation of a more resilient and empowered community. As businesses like DB Power Ltd continue to invest in rural development, they play a crucial role in bridging the development gap between urban and rural India, driving inclusive growth that benefits all segments of society.

Through its CSR activities, DB Power Ltd has shown that corporate responsibility, when executed with genuine intent and strategic focus, can lead to sustainable, long-term change in rural communities.

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