

SIX MONTHLY COMPLIANCE REPORT OF ENVIRONMENTAL CLEARANCE (EC)

RAIGARH ENERGY GENERATION LIMITED
600 (1x600) MW THERMAL POWER PLANT

At

**BADE BHANDAR VILLAGE, PUSSORE TEHSIL
RAIGARH DISTRICT CHHATTISGARH**

Submitted to:
Regional Office (WCZ)
Ministry of Environment Forest, Climate Change
Central Pollution Control Board, New Delhi &
Chhattisgarh Environment Conservation Board, Raipur



Submitted By:
Environment Management Department,
Raigarh Energy Generation Limited,
Bade & Chhote Bhandar Village, Pussore Tehsil
Raigarh District, Chhattisgarh

PERIOD: October'2020 – March'2021

Raigarh Energy Generation Limited
(1x600 MW Coal Based Thermal Power Plant)

INTRODUCTION

Raigarh Energy Generation Limited (formerly known as Korba West Power Company Limited) has set up a coal based Thermal Power Plant of capacity 1x600 MW at village Chote Bhandar, Bade Bhandar, Sarvani & Amali Bhona, in Tehsil Pussore of Raigarh District, Chhattisgarh.

REGL has been granted Environmental Clearance by Hon'ble MoEF&CC vide letter No.J-13012/57/2008-IA.II (T), dated 20.05.2010 and Amendment of Environmental Clearance for Coal transportation by way of Road for an interim period of three years dated 16.04.2015. However, the Railway project was not completed by KWPCCL and the company went under insolvency resolution process under the Insolvency and Bankruptcy code 16.

Hon'ble NCLT, Ahmedabad has approved the resolution plan submitted by Adani Power Ltd. for acquiring KWPCCL Vide order IA 236 of 2019 in C.P (I.B) No. 190/NCLT/AHM/2018 dated 24th June 2019 and subsequently Adani Power Ltd. Has taken over management of KWPCCL.

Korba West Power Company Ltd. is 100% subsidiary of Adani Power Ltd. The name has been changed from Korba West Power Company Limited to Raigarh Energy Generation Limited.

MoEF&CC has already issued the letter for change in name of Environmental Clearance vide letter dated 22.10.2019.

The company has adopted four peripheral villages and executing most of the CSR works in those villages in the field of their livelihood, infrastructure development, cleanliness, community health and education.

REGL has engaged M/s Vardan Envirolab, Gurgaon, Haryana for their service of sampling, monitoring and analysis as per statutory guidelines.

REGL Thermal Power Plant was not in operation since May'2017 due to major breakdown of generator earth failure. The unit was revived in the month of December 2019.

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Compliance Status of Environmental Clearance

vide Letter no.: F. No. J 13012/57/2008-IA.II (T), dated: 20.05.2010
and its subsequent amendment vide letter dated: 16.04.2015 and extension dated
26.11.2019 & 17 & 30.07.2020

Sr. No.	EC Conditions	Compliance Status
A.	Specific Conditions	
i	Detailed hydro-geological study shall be conducted and submitted within six months from an institute/organization of repute to assess impact of surface water regime. Specific mitigation measures shall be spelt out and action plan for implementation of the same shall be provided. It shall be ensured that the area drainage is not disturbed due to the proposed power plant.	Complied. Hydro-geological study has been done by reputed institute "National Institute of Hydrology, Roorkee" and report has already been submitted. The entire plant area is almost flat. There are no streams within the plant premises. Regular water quality monitoring being carried out by an agency accredited by NABL & recognized by MoEF&CC.
ii	Hydro-geological study of the area shall be also reviewed annually and results submitted to the Ministry and concerned agency in the State Govt. In case adverse impact on ground water quantity and quality is observed at any stage, immediate mitigating steps to contain any adverse impact on ground water shall be undertaken.	Being Complied. The hydro-geological study has been carried out and it is submitted along with previous compliance report.
iii	Source of water for meeting the requirement during lean season shall be specified and submitted to the Regional Office of the Ministry within three months.	Being complied. 15 MCM Water has been allotted from Mahanadi River by Water Resources Dept. Govt. of Chhattisgarh vide letter no. 2705/F4-66/S-2/31/OJPRE/07, Raipur dated 25.04.2018. This quantity is adequate to meet the plant's requirement, including the lean season.
iv	No ground water shall be extracted for use in operation of the power plant even in lean season.	Noted, Being Complied.
v	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.	Complied There is no water body within the power plant premises.
vi	COC of 5.0 shall be adopted.	COC of 5.0 is being maintained during plant operation.

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Sr. No.	EC Conditions	Compliance Status
vii	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.	Being Complied. Around 70 Number of local people on roll employment has been created which is 36% of total on Roll employees and contractual employment about 340 number deployed which is 43% of total contract manpower.
viii	Additional soil for levelling 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.	The entire plant area is almost flat. There are no streams within the plant premises.
ix	Provision for installation of FGD shall be provided for future use.	Space for FGD is provided in plant layout. As per CPCB directions vide letter no. B33014/07/2017-18/IPC-II/TPP/15860 dated 11.12.2017. However, as per MoEF&CC's Notification dated 31st March 2021, Raigarh TPP is falling under Category "C" Non- retiring TPPs and the timelines for compliance of SO2 emission is up to December 2024. Accordingly the work is under progress for compliance as per CPCB direction.
x	A stack 275 m with flue gas velocity of 25 m/s shall be installed.	Complied. Flue Stack of 275 meter constructed. The designed flue gas velocity is more than 25 m/sec.
xi	High Efficiency Electrostatic Precipitators (ESPs) shall be installed to ensure that particulate emission does not exceed 50 mg/Nm ³ .	A High Efficiency Electrostatic Precipitators has been provided (ESP) to meet particulate emission less than 50 mg/Nm ³ . Monitoring report enclosed as Annexure- I
xii	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.	Adequate dust suppression system like water sprinkling system, dust extraction system, dry fog dust suppression system has been installed throughout coal handling chain and bag filters in LHS, RHS bunkers and crusher house, The high concentrated slurry disposal system and closed transferring pipelines have installed for ash disposal in dyke.
xiii	Utilization of 100% Fly Ash generated shall be made from 4 th year of operation of the plant. Status of implementation shall be reported to the Regional Office of the Ministry from time to time.	100% of Fly Ash utilization was last achieved in FY 19-20. Fly Ash utilization report is attached as Annexure - II .

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xiv	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.	Being Complied. We have established two nos. of silo (Intermediate and Main) with capacity of 1000 MT & 2500 MT respectively for utilization of dry fly ash. High concentration slurry disposal system is provided for disposal of unutilized ash in ash pond. Ash water circulation system is provided. Monitoring of Mercury and other heavy metals (As, Cr, Pb etc.) is being carried out regularly and report is enclosed in Annexure - I .
xv	Ash pond shall be lined with HDP/LDP lining or any other suitable impermeable media such that no leachate takes place at any point of time. Adequate safety measures shall also be implemented to protect the ash dyke from getting breached.	Complied. Well-designed Ash pond with LDPE lining has been established as per guidelines of MoEF/CEA/CPCB. Safety measure such as bund with toe wall and lining of side slope done to prevent any leachate.
xvi	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 filled up. The project proponent shall inform the State Pollution Control Board well in advance before undertaking the activity.	Compliance assured.
xvii	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 %.	Green belt / plantation are being developed. About 205,974 trees have been planted. Local plant species being preferred for the plantation as fast growing with thick canopy cover adequate height with longer duration of foliage, Perennial and evergreen along with fruit bearing plants in adequate have also been planted. Greenbelt development plan has been approved by DFO. Greenbelt development status is enclosed as Annexure - III .
xviii	Two nearest village shall be adopted and basic amenities like development of roads, drinking water supply, primary health centre, primary school etc. shall be developed in co-ordination with the district administration.	Being Complied Four project villages are adopted for development of basic amenities such as construction of approach road, community hall, school room, safe drinking water facilities have been completed in all the adopted villages. Pond deepening work has

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		been under taken in village Badebhandar and Sarwani. Cloth swing training has been started from September 2020. The activities carried earlier are being monitored and sustained by the beneficiaries.
xix	The project proponent shall also adequately contribute in the development of the neighbouring villages. Special package with implementation schedule for providing fluoride free potable drinking water supply in the nearby villages and schools shall be undertaken in a time bound manner.	CSR activities being carried out in consultation with district administration for the development of neighbouring villages. Also actively participating in GOI flagship program "Swachh Bharat Abhiyan" in coordination with district administration. Extended support for Mason and helper for construction of 141 individual household toilets in five nearby villages. Water analysis report attached is showing fluoride data in nearby ground water regime.
xx	A good action plan for R&R (if 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.	The project is out of Abadi/population area. The R&R plan has already been prepared, implemented, under progress and submitted to MoEF & CECB, Raipur.
xxi	An amount of Rs 6.0 Crores shall be specially earmarked for development activities for tribals of the nearby villages as committed by the project proponent vide its letter dated 23.03.2010. Specific schemes for upliftment of tribal families mentioning sustainable livelihood schemes shall be submitted to the Ministry within three months with time bound implementation and in-built monitoring programme. The above amount shall be over and above the fund earmarked for CSR activities.	The requisite amount for tribal development has been spent and the expenditure report of 6.52 crore has been submitted. Specific livelihood schemes like poultry, mushroom production and vegetable cultivation is being carried out for upliftment of the tribal families. Tailoring training is also undergoing where interested tribal women is attending the training. Self-Help-Groups (SHGs) of women have been formed in the villages to take up various livelihood schemes. Two tribal cooperatives formed to take up various livelihood schemes. These are registered cooperative society. Besides above, infrastructure development activities like construction of CC road, community hall, sanskritik manch, drinking water facility etc. have been undertaken in the tribal villages for their upliftment.
xxii	Further an amount of Rs 15.0 Crores shall be earmarked as one time capital cost for CSR programme as committed by the project proponent vide its letter dated	Being complied The CSR activities undertaken for: 1. Infrastructure development in the villages, 2. Livelihood Enhancement and training,

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	23.03.2010. Subsequently a recurring expenditure of Rs 3.0 Crores 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.	3. Quality Education, 4. Community Health and 5. Promotion of Sports and Culture. Activities under Swachh Bharat Abhiyan also executed in neighbouring villages. Extended support for Mason and helper for construction of 141 individual household toilets in five nearby villages. Two community shed constructed in two villages. The activities carried earlier are being monitored and sustained by the beneficiaries.
xxiii	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 programme. Company shall provide separate budget for community development activities and income generating programmes. This will be in addition to vocational training for individuals imparted to take up self-employment and jobs.	Need Assessment Study conducted and submitted with previous compliance report Income generating activities consists of poultry farming, mushroom production, vegetable cultivation, dairy farming, cross breeding of non-descriptive cattle, grocery shops etc. 20th batch of 4-months tailoring training is running, by end of 18th batch total 497 women has been trained out of which 120 belongs to ST. Three cooperative societies formed for income generation named Surbhi Dugdh Utpadan Samiti, Gram Vikas Kamgar Samiti and Mahanadi Gramin Mahila Bahudesiye Sahkari Samiti. These cooperative societies are functional and members are having income out of it. Executed MOA under PPP for up-gradation of ITI Saria, Raigarh district, constituted IMC. Conducted clean drive, rallies, street plays, poster competition, rangoli competition under Swachhta Abhiyan at ITI Saria. Also conducted safety awareness program to the ITI students.
xxiv	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.	Complied. Social audit has been conducted by reputed institute, IISWBM, Kolkata, Social audit report has already been submitted with compliance report for period April 2020 to September 2020

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xxv	Harnessing solar power within the premises of the plant particularly at available roof tops shall be undertaken and status of implementation shall be submitted periodically to the Regional Office of the Ministry.	Being complied. Solar geysers are installed in roof top of residential complexes within plant premises.
xxvi	A long term study on radio activity and heavy metals contents on coal to be used shall be carried out through a reputed institute. Thereafter mechanism for an in-built continuous monitoring for radio activity and heavy metals in coal and fly ash (including bottom ash) shall be put in place.	Compliance assured. The work for carrying out radioactive analysis was carried out by Board of Radiation and Isotope Technology, Department of Atomic Energy, Govt. of India. However the plant was under breakdown since 22 nd May'2017 to Dec'2019, Analysis report for coal and fly ash report is enclosed as Annexure - I.
xxvii	Mercury emissions shall also be monitored on periodic basis.	Analytical report for Mercury emission monitoring from stack is enclosed in Annexure - I.
xxix	Fly ash shall not be used for agricultural purpose. No mine void filling will be undertaken as an option for ash utilization without adequate lining of mine with suitable media such that no leachate shall take place at any point of time. In case, the option of mine void filling is to be adopted, proper detailed study of soil characteristics of the mine area shall be undertaken from an institute of repute and adequate clay lining shall be ascertained by the State Pollution Control Board and implementation done in close co-ordination with the State Pollution Control Board.	Noted, Compliance assured, if the activity is undertaken.
xxx	Green Belt shall also be developed around the ash pond over and above the Green Belt around the plant boundary.	Being Complied Green belt / plantation are being developed. About 205,974 trees have been planted. Local plant species being preferred for the plantation as fast growing with thick canopy cover adequate height with longer duration of foliage, Perennial and evergreen along with fruit bearing plants in adequate have also been planted. Greenbelt development plan has been approved by DFO. Greenbelt development status is enclosed as Annexure - III.

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xxxi	An Environmental Cell comprising of at least one expert in environmental science/ engineering, ecology, occupational health and social science, shall be created preferably at the project site itself and shall be headed by an officer of appropriate superiority and qualification. It shall be ensured that the Head of the Cell shall directly report to the Head of the Plant who would be accountable for implementation of environmental regulations and social impact improvement/ mitigation measures.	Complied. We have already established an Environmental Management Cell headed by Senior Management at Corporate office and at Plant site Manager & supported by Environmental Engineer, Officer, Chemist & Horticulturist.
xxxii	The project proponent shall formulate a well laid Corporate Environmental Policy and identify and designate responsible officers at all levels of its hierarchy for ensuring adherence to the policy and compliance with the conditions stipulated in this clearance letter and other applicable environmental laws and regulations.	Noted. Complied
B. GENERAL CONDITIONS		
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.	Being Complied. ETP has been established to treat effluents and treated water is being reuse within the premises. The concept of "Zero Discharge Condition" is implemented. Separate drainage network is established for storm water. Effluent water quality report is enclosed in Annexure – I .
ii	A sewage treatment plant shall be provided (as applicable) and the treated sewage shall be used for raising greenbelt/plantation.	Being Complied Sewage Treatment Plants has been installed and the treated effluent is being used for plantation/greenbelt. Analysis report of STP is enclosed in Annexure – I .
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 clearance and details shall be furnished.	A rain water harvesting & recharging system has already been constructed. 08 nos. of rain water harvesting ponds have been constructed within premises.

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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 location plant layout shall be submitted to the Ministry as well as to the Regional Office of the Ministry.	Adequate safety personnel's are available in the plant site to take preventive control measures. Fire hydrant system provided for prevention of spontaneous fires in coal yard, especially during summer season. Emergency preparedness plan is submitted at respective authorities.
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.	The fuel such as LDO and HFO are properly stored in minimum risk area & in consultation with Department of Explosives, Nagpur after getting NOC for the same. Disaster management plan (DMP) has been prepared to handle the any eventuality in case of an accident taking place due to storage of oil.
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.	Piezometric wells are installed within the premises. Ground water analysis results are enclosed as Annexure - I .
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.	Being Complied. The surface water samples being collected and analysis report is enclosed as Annexure I
viii	First Aid and sanitation arrangements shall be made for the drivers and other contract workers during construction phase.	First aid and sanitation for labours was provided during the construction.

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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 area, 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.	Necessary action has been taken to maintain noise levels in work zone area within 75 dB (A) from source during the plant operation. The personal protective equipment's (PPE) are provided to workers & employees working in noisy areas. Noise level monitoring is carried out regularly. Periodic audiometric check-up is being carried out.
x	Regular monitoring of ground level concentration of SO ₂ , NO _x , 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 of SO ₂ , NO _x , PM _{2.5} & PM ₁₀ CO and Hg is being carried and records are being maintained during construction phase as well as operational phase. Environmental monitoring report is enclosed as Annexure I Three online Continuous Ambient Air Quality Monitoring Station (CAAQM) System and one mobile Van for Ambient Air Quality Monitoring have been establish within plant premise in consultation with Regional Office, Chhattisgarh Environment Conservation Board, Raigarh.
xi	Provision shall be made for the housing of construction labour (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. All necessary facilities were provided during construction for contractual labours.
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, informing that the project has been accorded environmental clearance and copies of	Complied. Advertised in three newspapers Hindustan Times, Dainik bhaskar & Nai Duniya on 28.02.2010

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	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 at http://envfor.nic.in .	
xiii	A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, Zila Parisad / 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. Copy of Environment Clearance has been provided to concerned authority. Previous compliance status updated in company website. http://www.adanipower.com
xiv	A separate Environment Management Cell with qualified staff shall be set up for implementation of the stipulated environmental safeguards.	Being Complied. We have already established an Environment Management Cell with well qualified staff for implementation of the stipulated environmental safeguards.
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 (PM _{2.5} & PM ₁₀), SO ₂ , NO _x (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.	Being Complied. Regular Environmental Monitoring report is being submitted to Regional office, MoEF, CPCB and CECB, Chhattisgarh. The environmental parameters display board provided at main gate of the plant. Previous compliance status was updated in company website. http://www.adanipower.com
xvi	The environment statement for each financial year ending 31 st March in Form-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	The environment Statement for the year 2019-20 has been submitted to Chhattisgarh Environment Conservation Board (CECB) vide letter no. REGL/ENV/ Sept./1, dated- 21/09/2020. Copy of Environmental statement report was submitted with previous EC Compliance report.

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	respective Regional Offices of the Ministry by e-mail.	
xvii	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 by e-mail to the Regional Office, Ministry of Environment and Forests.	Being Complied. Six monthly Environmental Clearance compliance status report is regularly submitted to MoEF, CPCB and SPCB. The same is sent by email also. Last compliance report for the period of April'2020 to September'2020 had been submitted to your good office via our letter no. REGL/EMD/EC/MoEF/122/20 dated-23/05/2020.
xviii	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 basis. Criteria pollutants levels including NOx (from stack & ambient air) shall be displayed at the main gate of the power plant.	Complied
xix	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.	Being Complied A separate fund has already been allocated for implementation of environmental protection.

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Sr. No.	EC Conditions	Compliance Status
xx	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.	Complied.
xxi	Full cooperation shall be extended to the Scientists/Officers from the Ministry / Regional Office of the Ministry at Bangalore / CPCB/ SPCB who would be monitoring the compliance of environmental status.	Noted, Full co-operation shall be extended to all concerned authorities.
Conditions of EC Amendment Letter		
i	The coal shall be transported on road through mechanically covered trucks.	Noted. The vehicles are engaged for coal transporting are mechanically covered and periodic refresher training is also being imparted on traffic for safety and environment rules.
ii	Avenue plantation of 2/3 rows all along the road for transportation of coal shall be carried out by the project proponent at its own expenses in consultation with the State Government Authorities.	Agreed. The joint inspection of coal transportation route has been carried out with by Van Vikas Nigam, Govt. of Chhattisgarh. The proposal is under finalization for execution in consultation with forest department.
iii	Periodic maintenance of the roads used for transportation of coal shall be carried out by the project proponent at its own expenses and shall also facilitate the traffic control on the roads in consultation with State Government Authorities.	Noted & agreed The proposed coal transportation road has been recently constructed by NHAI, therefore no maintenance is required. Traffic vigilance and controls are provided as and when required by state authorities.

Environmental Monitoring Report



Submitted To:

**M/s Raigarh Energy Generation Ltd.
Village Chhote Bhandar, Post office Bade Bhandar,
Tehsil Pussore, Dist.-Raigarh -496100 (Chhattisgarh)**

Conducted by:

**M/s Vardan EnviroLab
Plot no. 82A, Sector-5, IMT Manesar, Gurugram (Haryana)**

(Recognized by MoEF & CC, NABL Government of India)

PREFACE

The growing concern for environmental protection and the passing of various environmental legislations have increased the responsibilities of Ministry of Environment, Forests & Climate Change, Pollution Control boards in many folds. Besides enforcing the various environmental legislations MoEF&CC, CPCB & SPCB strive to propagate the necessity awareness regarding the various legal provisions and environmental protection measures in the country.

Electric Power scenario has occupied a significant place in the development program of the country. Development and environment can neither be separated nor ignored. In fact, they are complimentary to each other. These issues have become a concern of the community, particularly the environment impact due to industries in the developing countries.

However, the prerequisite for sustainable development is judicious planning of environmental status, likely impacts of the approach adopted on the environment including inhabitants of the locality, availability of the eco-friendly technology, emerging waste disposal and waste utilization processes, techniques of land reclamation for the restoration of aesthetic beauty and soon.

*M/s Raigarh Energy Generation Ltd., Village Chhote Bhandar, Post Office Bade Bhandar, Raigarh-496100, India, has engaged **M/S Vardan EnviroLab, Gurugram, (HR)** to provide Environmental Services in respect of ambient air quality monitoring, stack emission, noise level monitoring & Sampling and Analysis of ground water quality, surface water quality, treated effluent sewage, effluent water from ETP, and soil for **Raigarh Energy Generation Ltd., Raigarh district of Chhattisgarh**, as per guidelines of MoEF & CC and CPCB Gazette notification.*

***M/S Vardan EnviroLab, Gurugram, (HR)** has deployed entirely its own personnel, facilities and expertise for doing this service. Sampling / Monitoring Stations were identified by the Environmental Officer of Raigarh Energy Generation Ltd.. The samples were analyzed **partly** at site and partly at our MoEF Recognized laboratory situated at Gurugram (HR).*

*This report presents the data generated for the period from 23th March 2021 to 26th March 2021 , **i.e. for Fourth quarter which** includes sampling locations, Methodology, testing procedure and compilation for the Environmental parameters i.e. Air, Water & Noise with a view to evaluate the impact due to the thermal power plant activities.*

During the course of our operations for the above task, the staff and management of Raigarh Energy Generation Ltd., were extremely co-operative. We are grateful to them for their invaluable support and assistance rendered to us during the course of the sampling and monitoring.

Date :

Authorized Signatory

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Chapter - 1.0

INTRODUCTION

M/s Raigarh Energy Generation Ltd., a subsidiary of Adani Power, is a power generation company based at Raigarh in the State of Chattisgarh. Raigarh Energy Generation Ltd., has recently commissioned its Thermal Power Plant first 600MW Unit at Village Chhote Bhandar, Post Office Bade Bhandar, Raigarh- 496100, India. The second unit of 600MW is under implementation.

Raigarh Energy Generation Ltd., is also committed towards the environment and the community it operates in. It has successfully implemented several community welfare schemes in the field of livelihood, infrastructure, community health and education which has so far benefited over 60,000 people from close to 75 villages.



Figure No.1. Raigarh Energy Generation Ltd.

Chapter – 2.0

PROJECT PROFILE

2.1 Topography & Drainage

Topography of this area is generally undulating. The area is drained by Mand River approximately 3 km. away from plant in North direction and Mahanadi River approximately 5 km. away from plant in South direction.

2.2 Location

Plant is bounded by Northern Latitudes of 21° 44' 00" to 21° 44' 42" and Eastern Longitude of 83° 16' 30" to 83° 17' 18". This area falls in the survey of India toposheet no. 64 O/1, 64 O/2, 64 O/5 and 64 O/6. The location of the mine area is shown in **Fig. No. 2**

2.3 Climate

The climate of the area is Sub-tropical type. It is in the zone of humid tropic climate where temperature and humidity of air are very high. The temperature varies from the minimum - maximum temperature range between 29.5°C - 49 °C in summer, and 8°C - 25 °C in winter. The humidity varies from 35% to 82%. The annual average rainfall in the area is about 1300 mm.

2.4 Communication

The nearest railway station is Kirodimal, which is at a distance of ~23 Km towards North direction. The area is well connected with N.H. No. 216. Nearest Airport is Raipur ~250 km in SW direction. Nearest village is Bade Bhandar ~ 1 km. in North direction and nearest town is Raigarh ~21 km. in North-East direction.

2.5 Location Map

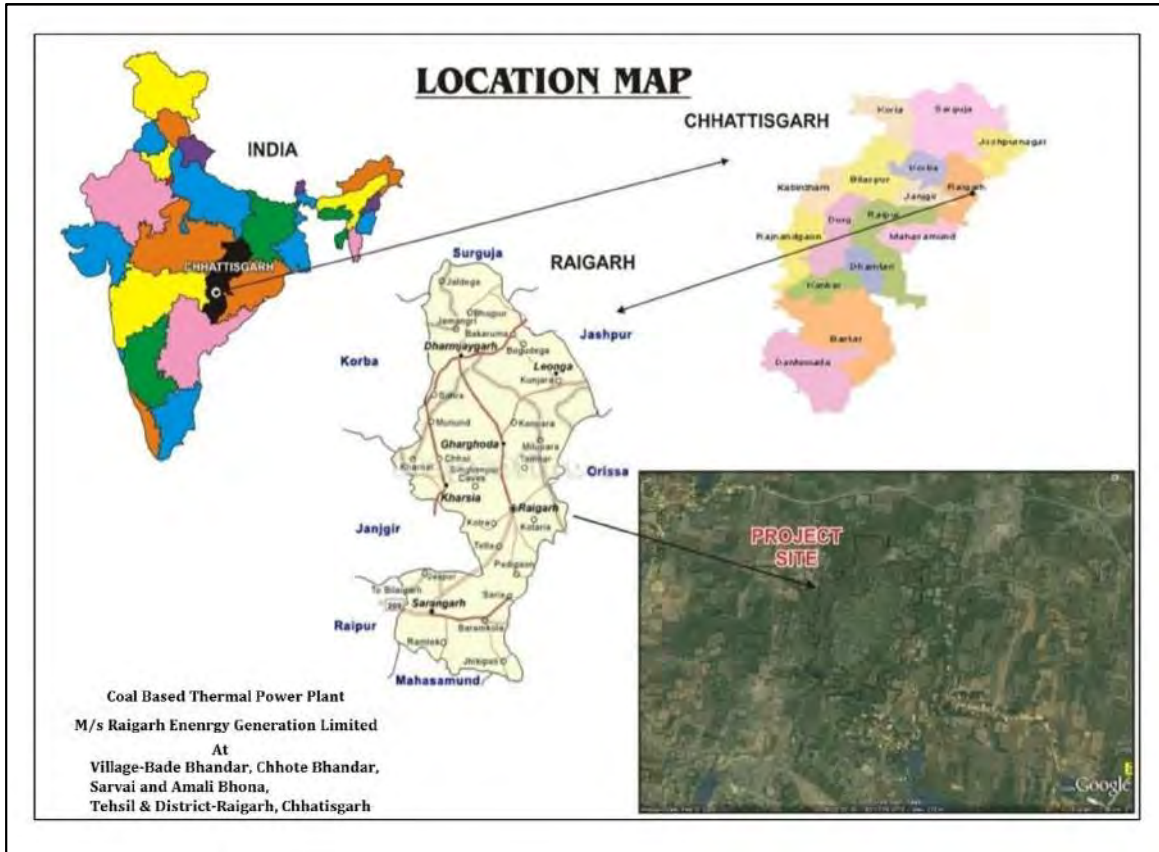


Figure No.2. Location Map

Chapter – 3.0

SCOPE OF STUDY AND METHODOLOGY

3.1 Scope of Study

The scope of study includes Environmental Services in respect of ambient air quality monitoring, noise level monitoring & Sampling and Analysis of ground water quality, surface water quality, treated effluent sewage, effluent water from ETP and soil.

3.2 Methodology

As mentioned in the scope of work covering the various Environmental components monitoring and sampling and its analysis was carried out on the basis of guidelines of Ministry of Environment Forest & Climate Control of Government of India & Chattisgarh State Pollution Control Board. Sampling procedure method reference and Analysis procedure method reference are mentioned in monitoring reports.

3.2.1 Ambient Air Quality Monitoring

The ambient air quality has been carried out at various sources of air pollution surrounding and in the Plant. The prime objective of the ambient air quality monitoring is to assess the existing air quality of the area.

The ambient air quality monitoring was carried out for 24 hours at each station. At all stations SO₂, NO₂, PM₁₀, PM_{2.5}, CO and Mercury were monitored. All the samples collected were analyzed for quantitative analysis of various pollutants.

The ambient air quality sampling locations were identified by the Environmental Officer of Raigarh Energy Generation Ltd.

3.2.2 Water Environment

The ground water samples, surface water samples were collected from selected locations in two liter sterilized plastic cans. These samples were analyzed as per IS 10500:2012. The domestic effluent and Industrial effluent samples were collected and analyzed for parameters: pH, Total suspended solids, Biochemical Oxygen Demand, Chemical Oxygen Demand and Oil & Grease.

3.2.3 Noise Environment

Sound level meter was used to know the sound levels generated due to plant activities at different locations. The measurements were taken for Equivalent sound level over a time period for day and night which is expressed in dB(A).

3.2.4 Soil

The Soil samples were collected from selected locations. These samples were analyzed for Physico-Chemical parameters including heavy metals.

Chapter – 4.0

SAMPLING LOCATION MAP AND ANALYSIS REPORTS

4.1 Ambient Air Quality Monitoring



Figure No.3. Plan Showing Ambient Air Quality Location Map

- Location Code: -
- A1- Site Office
 - A2- PalsadaVillage
 - A3- Kathali Village
 - A4- Chhote Bhandar Village
 - A5- Bade Bhandar Village
 - A6- Kondatarai
 - A7- Chatamura Chowk
 - A8- Supa, Near REGL Plant



Test Report

Sample Number : AAQM -06

Name & Address of the Party : M/s Raigarh Energy Generation Ltd.
Village Chhote Bhandar, Post Office Bade Bandar
Tehsil Pussore, Dist-Raigarh-496100 (Chhattisgarh)

Report No. : VEL/A/2103300013/A

Format No : 7.8 F-01

Party Reference No : NIL

Report Date : 05/04/2021

Period of Analysis : 30/03/2021-05/04/2021

Receipt Date : 30/03/2021

Sample Description : AMBIENT AIR

General Information

Sampling Location : Kondatarai
Sample Collected by : Vardan EnviroLab Team
Sampling Equipment used : RDS/FPS
Instrument Code : VEL/JAI/RDS/FPS/03
Instrument Calibration Status : Calibrated
Latitude : 21°51'52"
Longitude : 83°22'44"
Meteorological condition during monitoring : Clear Sky
Date of Monitoring : 24/03/2021 To 25/03/2021
Time of Monitoring : 08.00 TO 08.00 Hrs.
Ambient Temperature (°C) : Min. 24° Max. 37°
Surrounding Activity : Human, Vehicular & Other Activities
Scope of Monitoring : Regulatory Requirement
Sampling & Analysis Protocol : IS :5182
Sampling Duration : 24 Hrs.
Parameter Required : As Per Work Order

S.No.	Parameters	Test Method	Results	Units	Limit as per CPCB
1	Particulate Matter (as PM -10)	IS:5182 (P- 23)-2006,RA. 2017	76.20	µg/m ³	100
2	Particulate Matter (as PM - 2.5)	IS:5182 (P- 24)-2019	37.64	µg/m ³	60
3	Nitrogen Dioxides (as NO ₂)	IS:5182 (P- 6)-2006 RA.2017	19.16	µg/m ³	80
4	Sulphur Dioxide (as SO ₂)	IS:5182 (P- 2)-2001, RA. 2017	10.32	µg/m ³	80
5	Ozone (as O ₃)	IS 5182 (P-9):1974 RA.2014	8.60	µg/m ³	180.0

*BDL(Below Detection Limit), **DL(Detection Limit)

End of Report

DINESH PAL SANIYA
(Checked By)

RAJ KUMAR YADAV
(Authorized Signatory)

G M LAB OPERATION



Test Report

Sample Number : AAQM -07
Name & Address of the Party : M/s Raigarh Energy Generation Ltd.
Village Chhote Bhandar, Post Office Bade Bandar
Tehsil Pussore, Dist-Raigarh-496100 (Chhattisgarh)

Report No. : VEL/A/2103300014/A
Format No : 7.8 F-01
Party Reference No : NIL
Report Date : 05/04/2021
Period of Analysis : 30/03/2021-05/04/2021
Receipt Date : 30/03/2021

Sample Description : AMBIENT AIR

General Information

Sampling Location : Chatamura Chowk
Sample Collected by : Vardan EnviroLab Team
Sampling Equipment used : RDS/FPS
Instrument Code : VEL/JAI/RDS/FPS/01
Instrument Calibration Status : Calibrated
Latitude : 21°51'52"
Longitude : 83°22'44"
Meteorological condition during monitoring : Clear Sky
Date of Monitoring : 25/03/2021 To 26/03/2021
Time of Monitoring : 08.00 TO 08.00 Hrs.
Ambient Temperature (°C) : Min. 24° Max. 38°
Surrounding Activity : Human, Vehicular & Other Activities
Scope of Monitoring : Regulatory Requirement
Sampling & Analysis Protocol : IS :5182
Sampling Duration : 24 Hrs.
Parameter Required : As Per Work Order

S.No.	Parameters	Test Method	Results	Units	Limit as per CPCB
1	Particulate Matter (as PM -10)	IS:5182 (P- 23)-2006,RA. 2017	81.39	µg/m ³	100
2	Particulate Matter (as PM - 2.5)	IS:5182 (P- 24)-2019	42.88	µg/m ³	60
3	Nitrogen Dioxides (as NO ₂)	IS:5182 (P- 6)-2006 RA.2017	24.68	µg/m ³	80
4	Sulphur Dioxide (as SO ₂)	IS:5182 (P- 2)-2001, RA. 2017	11.52	µg/m ³	80
5	Ozone (as O ₃)	IS 5182 (P-9):1974 RA.2014	17.21	µg/m ³	180.0

*BDL(Below Detection Limit),**DL(Detection Limit)

End of Report

DINESH PALSANIYA

(Checked By)

BY TECHNICAL MANAGER

RAJ KUMAR YADAV
(Authorized Signatory)

G M LAB OPERATION



Test Report

Sample Number : AAQM -08
Name & Address of the Party : M/s Raigarh Energy Generation Ltd.
Village Chhote Bhandar, Post Office Bade Bandar
Tehsil Pussore, Dist-Raigarh-496100 (Chhattisgarh)

Report No. : VEL/A/2103300015/A
Format No : 7.8 F-01
Party Reference No : NIL
Report Date : 05/04/2021
Period of Analysis : 30/03/2021-05/04/2021
Receipt Date : 30/03/2021

Sample Description : AMBIENT AIR

General Information
Sampling Location : Supa , Near REGL Plant
Sample Collected by : Vardan EnviroLab Team
Sampling Equipment used : RDS/FPS
Instrument Code : VEL/JAI/RDS/FPS/02
Instrument Calibration Status : Calibrated
Latitude : 21°45'8"
Longitude : 83°18'4"
Meteorological condition during monitoring : Clear Sky
Date of Monitoring : 25/03/2021 To 26/03/2021
Time of Monitoring : 09.00 TO 09.00 Hrs.
Ambient Temperature (°C) : Min. 24° Max. 38°
Surrounding Activity : Human, Vehicular & Other Activities
Scope of Monitoring : Regulatory Requirement
Sampling & Analysis Protocol : IS :5182
Sampling Duration : 24 Hrs.
Parameter Required : As Per Work Order

S.No.	Parameters	Test Method	Results	Units	Limit as per CPCB
1	Particulate Matter (as PM -10)	IS:5182 (P- 23)-2006,RA. 2017	76.18	µg/m ³	100
2	Particulate Matter (as PM - 2.5)	IS:5182 (P- 24)-2019	35.47	µg/m ³	60
3	Nitrogen Dioxides (as NO ₂)	IS:5182 (P- 6)-2006 RA.2017	23.70	µg/m ³	80
4	Sulphur Dioxide (as SO ₂)	IS:5182 (P- 2)-2001, RA. 2017	14.36	µg/m ³	80
5	Ozone (as O ₃)	IS 5182 (P-9):1974 RA.2014	8.60	µg/m ³	180.0

*BDL(Below Detection Limit),**DL(Detection Limit)

End of Report

DINESH PALSANIYA
(Checked By)
TECHNICAL MANAGER

RAJ KUMAR YADAV
(Authorized Signatory)

G M LAB OPERATION



Test Report

Sample Number : AAQM/REGL/02
Name & Address of the Party : M/s Raigarh Energy Generation Ltd.
Village Chhote Bhandar, Post Office Bade Bandar
Tehsil Pussore, Dist-Raigarh-496100 (Chhattisgarh)

Report No. : VEL/A/2103300016/A
Format No : 7.8 F-01
Party Reference No : NIL
Report Date : 05/04/2021
Period of Analysis : 30/03/2021-05/04/2021
Receipt Date : 30/03/2021

Sample Description : AMBIENT AIR

General Information

Sampling Location : Site Office
Sample Collected by : Vardan EnviroLab Team
Sampling Equipment used : RDS/FPS
Instrument Code : VEL/JAI/RDS/FPS/02
Instrument Calibration Status : Calibrated
Latitude : 21°44'27"
Longitude : 83°16'32"
Meteorological condition during monitoring : Clear Sky
Date of Monitoring : 23/03/2021 To 24/03/2021
Time of Monitoring : 08.00 TO 08.00 Hrs.
Ambient Temperature (°C) : Min. 21° Max. 35°
Surrounding Activity : Human, Vehicular & Other Activities
Scope of Monitoring : Regulatory Requirement
Sampling & Analysis Protocol : IS :5182
Sampling Duration : 24 Hrs.
Parameter Required : As Per Work Order

S.No.	Parameters	Test Method	Results	Units	Limit as per CPCB
1	Particulate Matter (as PM -10)	IS:5182 (P- 23)-2006,RA. 2017	76.60	µg/m ³	100
2	Particulate Matter (as PM - 2.5)	IS:5182 (P- 24)-2019	37.34	µg/m ³	60
3	Nitrogen Dioxides (as NO2)	IS:5182 (P- 6)-2006 RA.2017	23.78	µg/m ³	80
4	Sulphur Dioxide (as SO2)	IS:5182 (P- 2)-2001, RA. 2017	16.06	µg/m ³	80

*BDL-Below Detection Limit, **DL-Detection Limit

End of Report

DINESH PALSANIYA
(Checked By)
TECHNICAL MANAGER

RAJ KUMAR YADAV
(Authorized Signatory)
G M LABORATION



Test Report

Sample Number : AAQM/REGL/02

Name & Address of the Party : M/s Raigarh Energy Generation Ltd.
Village Chhote Bhandar, Post Office Bade Bandar
Tehsil Pussore, Dist-Raigarh-496100 (Chhattisgarh)

Report No. : VEL/A/2103300016/B

Format No : 7.8 F-01

Party Reference No : NIL

Report Date : 05/04/2021

Period of Analysis : 30/03/2021-05/04/2021

Receipt Date : 30/03/2021

Sample Description : AMBIENT AIR

General Information

Sampling Location : Site Office
Sample Collected by : Vardan EnviroLab Team
Sampling Equipment used : RDS/FPS
Instrument Code : VEL/JAI/RDS/FPS/02
Instrument Calibration Status : Calibrated
Latitude : 21°44'27"
Longitude : 83°16'32"
Meteorological condition during monitoring : Clear Sky
Date of Monitoring : 23/03/2021 To 24/03/2021
Time of Monitoring : 08.00 TO 08.00 Hrs.
Ambient Temperature (°C) : Min. 21° Max. 35°
Surrounding Activity : Human, Vehicular & Other Activities
Scope of Monitoring : Regulatory Requirement
Sampling & Analysis Protocol : IS :5182
Sampling Duration : 24 Hrs.
Parameter Required : As Per Work Order

S.No.	Parameters	Test Method	Results	Units	Limit as per CPCB
1	Carbon Monoxide (as CO)	By Analyzer	0.44	mg/m ³	4.0
2	Mercury (Hg)	Methods of air sampling and analysis, 3rd ed., 1988, Method No.317	*BDL(DL-1.0)	ng/m ³	--

*BDL-Below Detection Limit. **DL-Detection Limit

End of Report

DINESH PALSANIYA

(Checked By)

TECHNICAL MANAGER

RAJ KUMAR YADAV

(Authorized Signatory)

G.M. LAB OPERATION



Test Report

Sample Number : AAQM - 05
Name & Address of the Party : M/s Raigarh Energy Generation Ltd.
Village Chhote Bhandar, Post Office Bade Bandar
Tehsil Pussore, Dist-Raigarh-496100 (Chhattisgarh)

Report No. : VEL/A/2103300017/A
Format No : 7.8 F-01
Party Reference No : NIL
Report Date : 05/04/2021
Period of Analysis : 30/03/2021-05/04/2021
Receipt Date : 30/03/2021

Sample Description : AMBIENT AIR

General Information

Sampling Location : Village - Palsada
Sample Collected by : Vardan EnviroLab Team
Sampling Equipment used : RDS/FPS
Instrument Code : VEL/JAI/RDS/FPS/02
Instrument Calibration Status : Calibrated
Latitude : 21°44'13"
Longitude : 83°16'30"
Meteorological condition during monitoring : Clear Sky
Date of Monitoring : 24/03/2021 To 25/03/2021
Time of Monitoring : 10.00 TO 10.00 Hrs.
Ambient Temperature (°C) : Min. 21° Max. 36°
Surrounding Activity : Human, Vehicular & Other Activities
Scope of Monitoring : Regulatory Requirement
Sampling & Analysis Protocol : IS :5182
Sampling Duration : 24 Hrs.
Parameter Required : As Per Work Order

S.No.	Parameters	Test Method	Results	Units	Limit as per CPCB
1	Particulate Matter (as PM -10)	IS:5182 (P- 23)-2006,RA. 2017	73.87	µg/m ³	100
2	Particulate Matter (as PM - 2.5)	IS:5182 (P- 24)-2019	39.91	µg/m ³	60
3	Nitrogen Dioxides (as NO ₂)	IS:5182 (P- 6)-2006 RA.2017	22.38	µg/m ³	80
4	Sulphur Dioxide (as SO ₂)	IS:5182 (P- 2)-2001, RA. 2017	14.0	µg/m ³	80

*BDL(Below Detection Limit),**DL(Detection Limit)

End of Report

DINESH PALSANIYA

(Checked By)

TECHNICAL MANAGER

RAJ KUMAR YADAV
(Authorized Signatory)

G M LAB OPERATION



Test Report

Sample Number : AAQM - 05

Name & Address of the Party : M/s Raigarh Energy Generation Ltd.
Village Chhote Bhandar, Post Office Bade Bandar
Tehsil Pussore, Dist-Raigarh-496100 (Chhattisgarh)

Report No. : VEL/A/2103300017/B

Format No : 7.8 F-01

Party Reference No : NIL

Report Date : 05/04/2021

Period of Analysis : 30/03/2021-05/04/2021

Receipt Date : 30/03/2021

Sample Description : AMBIENT AIR

General Information

Sampling Location : Village - Palsada
Sample Collected by : Vardan EnviroLab Team
Sampling Equipment used : RDS/FPS
Instrument Code : VEL/JAI/RDS/FPS/02
Instrument Calibration Status : Calibrated
Latitude : 21°44'13"
Longitude : 83°16'30"
Meteorological condition during monitoring : Clear Sky
Date of Monitoring : 24/03/2021 To 25/03/2021
Time of Monitoring : 10.00 TO 10.00 Hrs.
Ambient Temperature (°C) : Min. 21° Max. 36°
Surrounding Activity : Human, Vehicular & Other Activities
Scope of Monitoring : Regulatory Requirement
Sampling & Analysis Protocol : IS :5182
Sampling Duration : 24 Hrs.
Parameter Required : As Per Work Order

S.No.	Parameters	Test Method	Results	Units	Limit as per CPCB
1	Carbon Monoxide (as CO)	By Analyzer	0.66	mg/m ³	4.0
2	Mercury (Hg)	Methods of air sampling and analysis, 3rd ed., 1988, Method No.317	BDL(DL-1.0)	ng/m ³	--

*BDL(Below Detection Limit),**DL(Detection Limit)

End of Report

DINESH PALSANIYA

(Checked By)

BY TECHNICAL MANAGER

RAJ KUMAR YADAV
(Authorized Signatory)

G M LAB OPERATION



Test Report

Sample Number : AAQM - 04

Name & Address of the Party : M/s Raigarh Energy Generation Ltd.
Village Chhote Bhandar, Post Office Bade Bandar
Tehsil Pussore, Dist-Raigarh-496100 (Chhattisgarh)

Report No. : VEL/A/2103300018/A

Format No : 7.8 F-01

Party Reference No : NIL

Report Date : 05/04/2021

Period of Analysis : 30/03/2021-05/04/2021

Receipt Date : 30/03/2021

Sample Description : AMBIENT AIR

General Information

Sampling Location : Village - Kathli
Sample Collected by : Vardan EnviroLab Team
Sampling Equipment used : RDS/FPS
Instrument Code : VEL/JAI/RDS/FPS/01
Instrument Calibration Status : Calibrated
Latitude : 21°44'17"
Longitude : 83°16'19"
Meteorological condition during monitoring : Clear Sky
Date of Monitoring : 24/03/2021 To 25/03/2021
Time of Monitoring : 11.00 TO 11.00 Hrs.
Ambient Temperature (°C) : Min. 21° Max. 37°
Surrounding Activity : Human, Vehicular & Other Activities
Scope of Monitoring : Regulatory Requirement
Sampling & Analysis Protocol : IS :5182
Sampling Duration : 24 Hrs.
Parameter Required : As Per Work Order

S.No.	Parameters	Test Method	Results	Units	Limit as per CPCB
1	Particulate Matter (as PM -10)	IS:5182 (P- 23)-2006,RA. 2017	74.84	µg/m ³	100
2	Particulate Matter (as PM - 2.5)	IS:5182 (P- 24)-2019	41.52	µg/m ³	60
3	Nitrogen Dioxides (as NO2)	IS:5182 (P- 6)-2006 RA.2017	21.40	µg/m ³	80
4	Sulphur Dioxide (as SO2)	IS:5182 (P- 2)-2001, RA. 2017	15.61	µg/m ³	80

*BDL(Below Detection Limit), **DL(Detection Limit)

End of Report

DINESH PALSANIYA

(Checked By)
DY TECHNICAL MANAGER

RAJ KUMAR YADAV

(Authorized Signatory)
G M LAB OPERATION



Test Report

Sample Number : AAQM - 04

Name & Address of the Party : M/s Raigarh Energy Generation Ltd.
Village Chhote Bhandar, Post Office Bade Bandar
Tehsil Pussore, Dist-Raigarh-496100 (Chhattisgarh)

Report No. : VEL/A/2103300018/B

Format No : 7.8 F-01

Party Reference No : NIL

Report Date : 05/04/2021

Period of Analysis : 30/03/2021-05/04/2021

Receipt Date : 30/03/2021

Sample Description : AMBIENT AIR

General Information

Sampling Location : Village - Kathli
Sample Collected by : Vardan EnviroLab Team
Sampling Equipment used : RDS/FPS
Instrument Code : VEL/JAI/RDS/FPS/01
Instrument Calibration Status : Calibrated
Latitude : 21°44'17"
Longitude : 83°16'19"
Meteorological condition during monitoring : Clear Sky
Date of Monitoring : 24/03/2021 To 25/03/2021
Time of Monitoring : 11.00 TO 11.00 Hrs.
Ambient Temperature (°C) : Min. 21° Max. 37°
Surrounding Activity : Human, Vehicular & Other Activities
Scope of Monitoring : Regulatory Requirement
Sampling & Analysis Protocol : IS :5182
Sampling Duration : 24 Hrs.
Parameter Required : As Per Work Order

S.No.	Parameters	Test Method	Results	Units	Limit as per CPCB
1	Carbon Monoxide (as CO)	By Analyzer	0.72	mg/m ³	4.0
2	Mercury (Hg)	Methods of air sampling and analysis, 3rd ed., 1988, Method No.317	*BDL(DL-1.0)	ng/m ³	-

*BDL(Below Detection Limit), **DL(Detection Limit)

End of Report

DINESH PALBANIYA
(Checked By)
DY TECHNICAL MANAGER

RAJ KUMAR YADAV
(Authorized Signatory)
G M LAB OPERATION



Test Report

Sample Number : AAQM/REGL/01

Name & Address of the Party : M/s Raigarh Energy Generation Ltd.
Village Chhote Bhandar, Post Office Bade Bandar
Tehsil Pussore, Dist-Raigarh-496100 (Chhattisgarh)

Report No. : VEL/A/2103300019/A

Format No : 7.8 F-01

Party Reference No : NIL

Report Date : 05/04/2021

Period of Analysis : 30/03/2021-05/04/2021

Receipt Date : 30/03/2021

Sample Description : AMBIENT AIR

General Information

Sampling Location : Village - Chhote Bhandar
Sample Collected by : Vardan EnviroLab Team
Sampling Equipment used : RDS/FPS
Instrument Code : VEL/JAI/RDS/FPS/01
Instrument Calibration Status : Calibrated
Latitude : 21°44'22"
Longitude : 83°16'43"
Meteorological condition during monitoring : Clear Sky
Date of Monitoring : 23/03/2021 To 24/03/2021
Time of Monitoring : 13.00 TO 13.00 Hrs.
Ambient Temperature (°C) : Min. 21° Max. 32°
Surrounding Activity : Human, Vehicular & Other Activities
Scope of Monitoring : Regulatory Requirement
Sampling & Analysis Protocol : IS :5182
Sampling Duration : 24 Hrs.
Parameter Required : As Per Work Order

S.No.	Parameters	Test Method	Results	Units	Limit as per CPCB
1	Particulate Matter (as PM -10)	IS:5182 (P- 23)-2006,RA. 2017	77.68	µg/m ³	100
2	Particulate Matter (as PM - 2.5)	IS:5182 (P- 24)-2019	37.46	µg/m ³	60
3	Nitrogen Dioxides (as NO ₂)	IS:5182 (P- 6)-2006 RA.2017	22.23	µg/m ³	80
4	Sulphur Dioxide (as SO ₂)	IS:5182 (P- 2)-2001, RA. 2017	13.09	µg/m ³	80

*BDL(Below Detection Limit), **DL(Detection Limit)

End of Report

DINESH PALSANIYA

(Checked By)
OPERATIONAL MANAGER

RAJ KUMAR YADAV
(Authorized Signatory)

G M LAB OPERATION



Test Report

Sample Number : AAQM/REGL/01

Name & Address of the Party : M/s Raigarh Energy Generation Ltd.

Village Chhote Bhandar, Post Office Bade Bandar
Tehsil Pussore, Dist-Raigarh-496100 (Chhattisgarh)

Report No. : VEL/A/2103300019/B

Format No : 7.8 F-01

Party Reference No : NIL

Report Date : 05/04/2021

Period of Analysis : 30/03/2021-05/04/2021

Receipt Date : 30/03/2021

Sample Description : AMBIENT AIR

General Information

Sampling Location : Village - Chhote Bhandar

Sample Collected by : Vardan EnviroLab Team

Sampling Equipment used : RDS/FPS

Instrument Code : VEL/JAI/RDS/FPS/01

Instrument Calibration Status : Calibrated

Latitude : 21°44'22"

Longitude : 83°16'43"

Meteorological condition during monitoring : Clear Sky

Date of Monitoring : 23/03/2021 To 24/03/2021

Time of Monitoring : 13.00 TO 13.00 Hrs.

Ambient Temperature (°C) : Min. 21° Max. 32°

Surrounding Activity : Human, Vehicular & Other Activities

Scope of Monitoring : Regulatory Requirement

Sampling & Analysis Protocol : IS :5182

Sampling Duration : 24 Hrs.

Parameter Required : As Per Work Order

S.No.	Parameters	Test Method	Results	Units	Limit as per CPCB
1	Carbon Monoxide (as CO)	By Analyzer	0.76	mg/m ³	4.0
2	Mercury (Hg)	Methods of air sampling and analysis, 3rd ed., 1988, Method No.317	*BDL(DL-1.0)	ng/m ³	--

*BDL(Below Detection Limit), **DL(Detection Limit)

End of Report

DINESH PALSANIYA

(Checked By)
TECHNICAL MANAGER

RAJ KUMAR YADAV

(Authorized Signatory)

G M LAB OPERATION



Test Report

Sample Number : AAQM -03

Name & Address of the Party : M/s Raigarh Energy Generation Ltd.
Village Chhote Bhandar, Post Office Bade Bhandar
Tehsil Pussore, Dist-Raigarh-496100 (Chhattisgarh)

Report No. : VEL/A/2103300020/A

Format No : 7.8 F-01

Party Reference No : NIL

Report Date : 05/04/2021

Period of Analysis : 30/03/2021-05/04/2021

Receipt Date : 30/03/2021

Sample Description : AMBIENT AIR

General Information

Sampling Location : Village - Bade Bhandar
Sample Collected by : Vardan EnviroLab Team
Sampling Equipment used : RDS/FPS
Instrument Code : VEL/JAI/RDS/FPS/03
Instrument Calibration Status : Calibrated
Latitude : 21°44'29"
Longitude : 83°17'6"
Meteorological condition during monitoring : Clear Sky
Date of Monitoring : 23/03/2021 To 24/03/2021
Time of Monitoring : 15.00 TO 15.00 Hrs.
Ambient Temperature (°C) : Min. 21° Max. 35°
Surrounding Activity : Human, Vehicular & Other Activities
Scope of Monitoring : Regulatory Requirement
Sampling & Analysis Protocol : IS :5182
Sampling Duration : 24 Hrs.
Parameter Required : As Per Work Order

S.No.	Parameters	Test Method	Results	Units	Limit as per CPCB
1	Particulate Matter (as PM -10)	IS:5182 (P- 23)-2006,RA. 2017	78.40	µg/m ³	100
2	Particulate Matter (as PM - 2.5)	IS:5182 (P- 24)-2019	39.88	µg/m ³	60
3	Nitrogen Dioxides (as NO ₂)	IS:5182 (P- 6)-2006 RA.2017	25.61	µg/m ³	80
4	Sulphur Dioxide (as SO ₂)	IS:5182 (P- 2)-2001, RA. 2017	12.75	µg/m ³	80

*BDL(Below Detection Limit), **DL(Detection Limit)

End of Report

DINESH PALSANIYA
(Checked By)
TECHNICAL MANAGER

RAJ KUMAR YADAV
(Authorized Signatory)
G M LAB OPERATION



Test Report

Sample Number : AAQM -03

Name & Address of the Party : M/s Raigarh Energy Generation Ltd.
Village Chhote Bhandar, Post Office Bade Bandar
Tehsil Pussore, Dist-Raigarh-496100 (Chhattisgarh)

Report No. : VEL/A/2103300020/B

Format No : 7.8 F-01

Party Reference No : NIL

Report Date : 05/04/2021

Period of Analysis : 30/03/2021-05/04/2021

Receipt Date : 30/03/2021

Sample Description : AMBIENT AIR

General Information

Sampling Location : Village - Bade Bhandar
Sample Collected by : Vardan EnviroLab Team
Sampling Equipment used : RDS/FPS
Instrument Code : VEL/JAI/RDS/FPS/03
Instrument Calibration Status : Calibrated
Latitude : 21°44'29"
Longitude : 83°17'6"
Meteorological condition during monitoring : Clear Sky
Date of Monitoring : 23/03/2021 To 24/03/2021
Time of Monitoring : 15.00 TO 15.00 Hrs.
Ambient Temperature (°C) : Min. 21° Max. 35°
Surrounding Activity : Human, Vehicular & Other Activities
Scope of Monitoring : Regulatory Requirement
Sampling & Analysis Protocol : IS :5182
Sampling Duration : 24 Hrs.
Parameter Required : As Per Work Order

S.No.	Parameters	Test Method	Results	Units	Limit as per CPCB
1	Carbon Monoxide (as CO)	By Analyzer	0.79	mg/m ³	4.0
2	Mercury (Hg)	Methods of air sampling and analysis, 3rd ed., 1988, Method No.317	*BDL(DL-1.0)	ng/m ³	--

*BDL(Below Detection Limit), **DL(Detection Limit)

End of Report

DINESH PALSANIYA
(Checked By)
DY TECHNICAL MANAGER

RAJ KUMAR YADAV
(Authorized Signatory)
G M LAB OPERATION

4.2 Noise Level Monitoring



Figure No.4. Plan Showing Noise Level Monitoring Location Map

Ambient Noise Level Monitoring Locations

- Location Code: -
- N1- Field Hostel
 - N2- Palsada Village
 - N3- Kathali Village
 - N4- Chote Bhandar Village
 - N5- Bade Bhandar Village

Work Zone Noise Level Monitoring Locations

- Location Code: -
- N6- Site Office
 - N7- Behind Switchyard
 - N8- Railway Entry Gate



Test Report

Sample Number : VEL/AN/01
 Name & Address of the Party : M/s Raigarh Energy Generation Ltd.
 Village Chhote Bhandar, Post Office Bade Bandar
 Tehsil Pussore, Dist-Raigarh-496100 (Chhattisgarh)

Sample Description : Ambient Noise
 Scope of Monitoring : Regulatory Requirement
 Protocol Used : IS 9989; IS 9876
 Instrument Used : SLM

Report No. : VEL/N/2103300009/A
 Format No : 7.8 F-01
 Party Reference No : NIL
 Report Date : 05/04/2021
 Receipt Date : 30/03/2021
 Sampling Duration : 24 Hrs.
 Sample Collected by : Vardan EnviroLab Team
 Instrument : Calibrated
 Calibration Status

General Information

Sampling Location : Near Site Office
 Instrument Code : VEL/JAI/SLM/01
 Meteorological condition during monitoring : Clear Sky
 Date of Monitoring : 23/03/2021 To 24/03/2021
 Time of Monitoring : 06.00 TO 06.00 Hrs.
 Ambient Temperature (°C) : Min. 22° Max. 36°
 Surrounding Activity : Human, Vehicular & Other Activities
 Parameter Required : As Per Work Order

S.No.	Test Parameters	Protocol	Test Result dB (A)	
			Day Time	Night Time
1	L max	IS: 9989-1981, IS 9876: 1981	71.9	58.7
2	L min	IS: 9989-1981, IS 9876: 1981	40.6	39.1
3	Leq	IS: 9989-1981, IS 9876: 1981	56.45	46.26

Category of Zones	Leq in dB(A)	
	Day	Night
Industrial	75	70
Commercial	65	55
Residential	55	45
Silence Zone	50	40

1. Day Time is from 6.00 AM to 10.00 PM.
 2. Night Time is reckoned between 10.00 PM to 6.00 AM
 3. Silence Zone is defined as an area up to 100m around premises of Hospitals, Educational Institutions and Courts. Use of vehicle horn, loudspeaker and bursting of crackers is banned in these zones.
 Note: Mixed categories of areas be declared as one of the four above mentioned categories by the competent Authority and the corresponding standards shall apply

VINENDRA KUMAR
 (Checked By)
 TECHNICAL MANAGER

End of Report

RAJ KUMAR YADAV

(Authorized Signatory)



Test Report

Sample Number : VEL/AN/02
 Name & Address of the Party : M/s Raigarh Energy Generation Ltd.
 Village Chhote Bhandar, Post Office Bade Bandar
 Tehsil Pussore, Dist-Raigarh-496100 (Chhattisgarh)

Sample Description : Ambient Noise
 Scope of Monitoring : Regulatory Requirement
 Protocol Used : IS 9989; IS 9876
 Instrument Used : SLM

Report No. : VEL/N/2103300010/A
 Format No : 7.8 F-01
 Party Reference No : NIL
 Report Date : 05/04/2021
 Receipt Date : 30/03/2021
 Sampling Duration : 24 Hrs.
 Sample Collected by : Vardan EnviroLab Team
 Instrument : Calibrated
 Calibration Status

General Information
 Sampling Location : Village - Palsada
 Instrument Code : VEL/JAI/SLM/02
 Meteorological condition during monitoring : Clear Sky
 Date of Monitoring : 24/03/2021 To 25/03/2021
 Time of Monitoring : 06.00 TO 06.00 Hrs.
 Ambient Temperature (°C) : Min. 20° Max. 36°
 Surrounding Activity : Human, Vehicular & Other Activities
 Parameter Required : As Per Work Order

S.No.	Test Parameters	Protocol	Test Result dB (A)	
			Day Time	Night Time
1	L max	IS: 9989-1981, IS 9876: 1981	70.5	57.3
2	L min	IS: 9989-1981, IS 9876: 1981	39.2	37.1
3	Leq	IS: 9989-1981, IS 9876: 1981	55.05	44.81

Category of Zones	Leq in dB(A)	
	Day	Night
Industrial	75	70
Commercial	65	55
Residential	55	45
Silence Zone	50	40

1. Day Time is from 6.00 AM to 10.00 PM.
 2. Night Time is reckoned between 10.00 PM to 6.00 AM
 3. SilenceZone is defined as an area up to 100m around premises of Hospitals, Educational Institutions and Courts. Use of vehicle horn, loudspeaker and bursting of crackers is banned in these zones.
 Note: Mixed categories of areas be declared as one of the four above mentioned categories by the competent Authority and the corresponding standards shall apply

End of Report

VINODRA KUMAR
 (Checked By)
 TECHNICAL MANAGER

RAJ KUMAR YADAV
 (Authorized Signatory)
 G M LAB OPERATION



Test Report

Sample Number : VEL/AN/03
 Name & Address of the Party : M/s Raigarh Energy Generation Ltd.
 Village Chhote Bhandar, Post Office Bade Bandar
 Tehsil Pussore, Dist-Raigarh-496100 (Chhattisgarh)

Sample Description : Ambient Noise
 Scope of Monitoring : Regulatory Requirement
 Protocol Used : IS 9989; IS 9876
 Instrument Used : SLM

Report No. : VEL/N/2103300011/A
 Format No : 7.8 F-01
 Party Reference No : NIL
 Report Date : 05/04/2021
 Receipt Date : 30/03/2021
 Sampling Duration : 24 Hrs.
 Sample Collected by : Vardan EnviroLab Team
 Instrument : Calibrated
 Calibration Status

General Information

Sampling Location : Village - Kathli
 Instrument Code : VEL/JAI/SLM/01
 Meteorological condition during monitoring : Clear Sky
 Date of Monitoring : 24/03/2021 To 25/03/2021
 Time of Monitoring : 06.00 TO 06.00 Hrs.
 Ambient Temperature (°C) : Min. 24° Max. 35°
 Surrounding Activity : Human, Vehicular & Other Activities
 Parameter Required : As Per Work Order

S.No.	Test Parameters	Protocol	Test Result dB (A)	
			Day Time	Night Time
1	L max	IS: 9989-1981, IS 9876: 1981	69.4	55.5
2	L min	IS: 9989-1981, IS 9876: 1981	38.1	35.8
3	Leq	IS: 9989-1981, IS 9876: 1981	53.95	43.30

Category of Zones	Leq in dB(A)	
	Day	Night
Industrial	75	70
Commercial	65	55
Residential	55	45
Silence Zone	50	40

- Day Time is from 6.00 AM to 10.00 PM.
 - Night Time is reckoned between 10.00 PM to 6.00 AM
 - SilenceZone is defined as an area up to 100m around premises of Hospitals, Educational Institutions and Courts. Use of vehicle horn, loudspeaker and bursting of crackers is banned in these zones.
- Note: Mixed categories of areas be declared as one of the four above mentioned categories by the competent Authority and the corresponding standards shall apply

End of Report

VINDEE KUMAR
 (Checked By)
 TECHNICAL MANAGER

RAJ KUMAR YADAV
 (Authorized Signatory)
 E M LAB OPERATION



Test Report

Sample Number : VEL/AN/04
 Name & Address of the Party : M/s Raigarh Energy Generation Ltd.
 Village Chhote Bhandar, Post Office Bade Bandar
 Tehsil Pussore, Dist-Raigarh-496100 (Chhattisgarh)

Sample Description : Ambient Noise
 Scope of Monitoring : Regulatory Requirement
 Protocol Used : IS 9989, IS 9876
 Instrument Used : SLM

Report No. : VEL/N/2103300012/A
 Format No : 7.8 F-01
 Party Reference No : NIL
 Report Date : 05/04/2021
 Receipt Date : 30/03/2021
 Sampling Duration : 24 Hrs.
 Sample Collected by : Vardan EnviroLab Team
 Instrument : Calibrated
 Calibration Status

General Information
 Sampling Location : Village - Chhote Bhandar
 Instrument Code : VEL/JAI/SLM/02
 Meteorological condition during monitoring : Clear Sky
 Date of Monitoring : 24/03/2021 To 25/03/2021
 Time of Monitoring : 06.00 TO 06.00 Hrs.
 Ambient Temperature (°C) : Min. 22° Max. 37°
 Surrounding Activity : Human, Vehicular & Other Activities
 Parameter Required : As Per Work Order

S.No.	Test Parameters	Protocol	Test Result dB (A)	
			Day Time	Night Time
1	L max	IS: 9989-1981, IS 9876: 1981	68.6	55.4
2	L min	IS: 9989-1981, IS 9876: 1981	38.0	35.2
3	Leq	IS: 9989-1981, IS 9876: 1981	53.15	42.92

Category of Zones	Leq in dB(A)	
	Day	Night
Industrial	75	70
Commercial	65	55
Residential	55	45
Silence Zone	50	40

1. Day Time is from 6.00 AM to 10.00 PM.
 2. Night Time is reckoned between 10.00 PM to 6.00 AM
 3. SilenceZone is defined as an area up to 100m around premises of Hospitals, Educational Institutions and Courts. Use of vehicle horn, loudspeaker and bursting of crackers is banned in these zones.
 Note: Mixed categories of areas be declared as one of the four above mentioned categories by the competent Authority and the corresponding standards shall apply

End of Report

VINODRA KUMAR
 (Checked By)
 TECHNICAL MANAGER

RAJ KUMAR YADAV
 (Authorized Signatory)
 C.M. LAB OPERATION



Test Report

Sample Number : VEL/AN/05
 Name & Address of the Party : M/s Raigarh Energy Generation Ltd.
 Village Chhote Bhandar, Post Office Bade Bandar
 Tehsil Pussore, Dist-Raigarh-496100 (Chhattisgarh)

Report No. : VEL/N/2103300013/A
 Format No : 7.8 F-01
 Party Reference No : NIL
 Report Date : 05/04/2021
 Receipt Date : 30/03/2021
 Sampling Duration : 24 Hrs.
 Sample Collected by : Vardan EnviroLab Team
 Instrument : Calibrated
 Calibration Status

Sample Description : Ambient Noise
 Scope of Monitoring : Regulatory Requirement
 Protocol Used : IS 9989; IS 9876
 Instrument Used : SLM

General Information

Sampling Location : Village - Bade Bhandar
 Instrument Code : VEL/JAI/SLM/02
 Meteorological condition during monitoring : Clear Sky
 Date of Monitoring : 23/03/2021 To 24/03/2021
 Time of Monitoring : 06.00 TO 06.00 Hrs.
 Ambient Temperature (°C) : Min. 21° Max. 36°
 Surrounding Activity : Human, Vehicular & Other Activities
 Parameter Required : As Per Work Order

S.No.	Test Parameters	Protocol	Test Result dB (A)	
			Day Time	Night Time
1	L max	IS: 9989-1981, IS 9876: 1981	67.0	57.4
2	L min	IS: 9989-1981, IS 9876: 1981	38.8	37.2
3	Leq	IS: 9989-1981, IS 9876: 1981	52.06	44.92

Category of Zones	Leq in dB(A)	
	Day	Night
Industrial	75	70
Commercial	65	55
Residential	55	45
Silence Zone	50	40

- Day Time is from 6.00 AM to 10.00 PM.
 - Night Time is reckoned between 10.00 PM to 6.00 AM
 - SilenceZone is defined as an area up to 100m around premises of Hospitals, Educational Institutions and Courts. Use of vehicle horn, loudspeaker and bursting of crackers is banned in these zones.
- Note: Mixed categories of areas be declared as one of the four above mentioned categories by the competent Authority and the corresponding standards shall apply

End of Report

VINODRA KUMAR
 (Checked By)
 TECHNICAL MANAGER

RAJ KUMAR YADAV
 (Authorized Signatory)
 G M LAB OPERATION



Test Report

Sample Number : VEL/AN/06

Name & Address of the Party : M/s Raigarh Energy Generation Ltd.
Village Chhote Bhandar, Post Office Bade Bandar
Tehsil Pussore, Dist-Raigarh-496100 (Chhattisgarh)

Sample Description : Ambient Noise
Scope of Monitoring : Regulatory Requirement
Protocol Used : IS 9989; IS 9876
Instrument Used : SLM

Report No. : VEL/N/2103300014/A
Format No : 7.8 F-01
Party Reference No : NIL
Report Date : 05/04/2021
Receipt Date : 30/03/2021
Sampling Duration : 24 Hrs.
Sample Collected by : Vardan EnviroLab Team
Instrument : Calibrated
Calibration Status

General Information

Sampling Location : Village - Near Field Hostel
Instrument Code : VEL/JAI/SLM/01
Meteorological condition during monitoring : Clear Sky
Date of Monitoring : 23/03/2021 To 24/03/2021
Time of Monitoring : 06.00 TO 06.00 Hrs.
Ambient Temperature (°C) : Min. 20° Max. 35°
Surrounding Activity : Human, Vehicular & Other Activities
Parameter Required : As Per Work Order

S.No.	Test Parameters	Protocol	Test Result dB (A)	
			Day Time	Night Time
1	L max	IS: 9989-1981, IS 9876: 1981	68.3	57.4
2	L min	IS: 9989-1981, IS 9876: 1981	40.8	37.2
3	Leq	IS: 9989-1981, IS 9876: 1981	53.93	44.92

Category of Zones	Leq in dB(A)	
	Day	Night
Industrial	75	70
Commercial	65	55
Residential	55	45
Silence Zone	50	40

1: Day Time is from 6.00 AM to 10.00 PM.
2: Night Time is reckoned between 10.00 PM to 6.00 AM
3: SilenceZone is defined as an area up to 100m around premises of Hospitals, Educational Institutions and Courts. Use of vehicle horn, loudspeaker and bursting of crackers is banned in these zones.
Note: Mixed categories of areas be declared as one of the four above mentioned categories by the competent Authority and the corresponding standards shall apply

End of Report

RAJ KUMAR YADAV

V. N. RAJ KUMAR
(Checked By)
TECHNICAL MANAGER

(Authorized Signatory)
G. M. LAB APPLICATION



Test Report

Sample Number : VEL/AN/07

Name & Address of the Party : M/s Raigarh Energy Generation Ltd.
Village Chhote Bhandar, Post Office Bade Bandar
Tehsil Pussore, Dist-Raigarh-496100 (Chhattisgarh)

Sample Description : Ambient Noise
Scope of Monitoring : Regulatory Requirement
Protocol Used : IS 9989; IS 9876
Instrument Used : SLM

Report No. : VEL/N/2103300015/A
Format No : 7.8 F-01
Party Reference No : NIL
Report Date : 05/04/2021
Receipt Date : 30/03/2021
Sampling Duration : 24 Hrs.
Sample Collected by : Vardan EnviroLab Team
Instrument : Calibrated
Calibration Status

General Information

Sampling Location : Behind Switch Yard
Instrument Code : VEL/JAI/SLM/02
Meteorological condition during monitoring : Clear Sky
Date of Monitoring : 24/03/2021 To 25/03/2021
Time of Monitoring : 06.00 TO 06.00 Hrs.
Ambient Temperature (°C) : Min. 20° Max. 36°
Surrounding Activity : Human, Vehicular & Other Activities
Parameter Required : As Per Work Order

S.No.	Test Parameters	Protocol	Test Result dB (A)	
			Day Time	Night Time
1	L max	IS: 9989-1981, IS 9876: 1981	69.4	54.5
2	L min	IS: 9989-1981, IS 9876: 1981	39.4	37.3
3	Leq	IS: 9989-1981, IS 9876: 1981	55.05	44.59

Category of Zones	Leq in dB(A)	
	Day	Night
Industrial	75	70
Commercial	65	55
Residential	55	45
Silence Zone	50	40

1. Day Time is from 6.00 AM to 10.00 PM.
 2. Night Time is reckoned between 10.00 PM to 6.00 AM
 3. SilenceZone is defined as an area up to 100m around premises of Hospitals, Educational Institutions and Courts. Use of vehicle horn, loudspeaker and bursting of crackers is banned in these zones.
- Note: Mixed categories of areas be declared as one of the four above mentioned categories by the competent Authority and the corresponding standards shall apply

End of Report

V. N. KUMAR
(Checked By)
TECHNICAL MANAGER

RAJ KUMAR YADAV
(Authorized Signatory)
G.M. LAB OPERATION



Test Report

Sample Number : VEL/AN/08
 Name & Address of the Party : M/s Raigarh Energy Generation Ltd.
 Village Chhote Bhandar, Post Office Bade Bhandar
 Tehsil Pussore, Dist-Raigarh-496100 (Chhattisgarh)

Report No. : VEL/N/2103300016/A
 Format No : 7.8 F-01
 Party Reference No : NIL
 Report Date : 05/04/2021
 Receipt Date : 30/03/2021
 Sampling Duration : 24 Hrs.
 Sample Collected by : Vardan EnviroLab Team
 Instrument : Calibrated
 Calibration Status

Sample Description : Ambient Noise
 Scope of Monitoring : Regulatory Requirement
 Protocol Used : IS 9989; IS 9876
 Instrument Used : SLM

General Information

Sampling Location : Railway Entry Gate
 Instrument Code : VEL/JAI/SLM/02
 Meteorological condition during monitoring : Clear Sky
 Date of Monitoring : 23/03/2021 To 24/03/2021
 Time of Monitoring : 06.00 TO 06.00 Hrs.
 Ambient Temperature (°C) : Min. 20° Max. 36°
 Surrounding Activity : Human, Vehicular & Other Activities
 Parameter Required : As Per Work Order

S.No.	Test Parameters	Protocol	Test Result dB (A)	
			Day Time	Night Time
1	L max	IS: 9989-1981, IS 9876: 1981	71.1	57.9
2	L min	IS: 9989-1981, IS 9876: 1981	39.8	38.3
3	Leq	IS: 9989-1981, IS 9876: 1981	55.65	45.46

Category of Zones	Leq in dB(A)	
	Day	Night
Industrial	75	70
Commercial	65	55
Residential	55	45
Silence Zone	50	40

1. Day Time is from 6.00 AM to 10.00 PM.
 2. Night Time is reckoned between 10.00 PM to 6.00 AM
 3. SilenceZone is defined as an area up to 100m around premises of Hospitals, Educational Institutions and Courts. Use of vehicle horn, loudspeaker and bursting of crackers is banned in these zones.
- Note: Mixed categories of areas be declared as one of the four above mentioned categories by the competent Authority and the corresponding standards shall apply

End of Report

V NDEA KUMAR
 (Checked By)
 TECHNICAL MANAGER

RAJ KUMAR YADAV
 (Authorized Signatory)
 G.M. LAB OPERATION

4.3 Ground water Quality Analysis



Figure No.5. Plan Showing Ground Water Quality Monitoring Location Map

Location Code: -

- GW1- Site Office
- GW2- PalsadaVillage
- GW3- Kathali Village
- GW4- Chote Bhandar Village
- GW5- Bade Bhandar Village



Test Report

Sample Number : REGLW/03/21-05
Name & Address of the Party : M/s Raigarh Energy Generation Ltd.
Village Chhote Bhandar, Post Office Bade Bandar
Tehsil Pussore, Dist-Raigarh-496100 (Chhattisgarh)

Report No. : VELW/2103300019/A
Format No : 7.8 F-01
Party Reference No : NIL
Report Date : 05/04/2021
Period of Analysis : 30/03/2021-05/04/2021
Receipt Date : 30/03/2021
Sampling Date : 24/03/2021
Sampling Quantity : 3 Ltr.
Sampling Type : Grab

Sample Description : GROUND WATER
Location : Near Site Office
Sample Collected by : Vardan EnviroLab Team
Preservation : Suitable Preservation
Sampling and Analysis Protocol : IS 10500 -2012

S.No.	Parameters	Protocols	Results	Units	IS:10500-2012	
					Acceptable Limits	Permissible Limits
1	pH value	IS 3025 (P-11): 1983 Reaff. 2017	7.41	--	6.5 to 8.5	No Relaxation
2	Turbidity	IS 3025 (Part 10): 1984, Reaff. 2017, (Nephelometric Method)	*BDL(DL-1.0)	NTU	1	5
3	Total Dissolved Solids	IS 3025 (P-16): 1984 Reaff 2017	337.80	mg/l	500	2000
4	Chloride (as Cl)	IS: 3025 (Part 32): 1988, Reaff. 2019	57.43	mg/l	250	1000
5	Sulphate as (SO4)	IS: 3025 (Part 24): 1986, Reaff. 2019 Turbidity Method	20.97	mg/l	200	400
6	Total Alkalinity (as CaCO3)	IS: 3025 (Part 23): 1986, Reaff. 2019	141.40	mg/l	200	600
7	Total Hardness (CaCO3)	IS: 3025 (Part 21): 2009, Reaff. 2019	161.0	mg/l	200	600
8	Calcium (as Ca)	IS: 3025 (Part 40): 1991 Reaff. 2019 (EDTA method)	53.47	mg/l	75	200
9	Magnesium	IS: 3025 (Part 46): 1994, Reaff. 2019 (EDTA method)	6.70	mg/l	30	100
10	Fluoride (as F)	APHA 23rd Edition 2017, 4500FD	0.36	mg/l	1.0	1.5
11	Nitrate (as NO3)	IS: 3025 (Part 34): 1988, Reaff. 2019 (Chromotropic Method)	0.94	mg/l	45	No Relaxation
12	Phenolic compounds	APHA 23rd Edition 2017, 5530C	*BDL(DL-0.001)	mg/l	0.001	0.002
13	Iron	IS:3025(P-53):2003,RA.2019:2003	0.19	mg/l	0.3	No Relaxation
14	Zinc as (Zn)	APHA (23rd edition), 3030D,3113B	*BDL(DL-0.2)	mg/l	5.0	15.0
15	Copper (Cu)	APHA (23rd edition), 3111B	*BDL(DL-0.02)	mg/l	0.05	1.5
16	Manganese as Mn	APHA3111B	*BDL(DL-0.05)	mg/l	0.1	0.3
17	Arsenic as As	APHA (23rd edition), 3030D,3114C, 2017	*BDL(DL-0.005)	mg/l	0.01	0.05
18	Boron	APHA (23rd edition) 4500B, 2017	*BDL(DL-0.2)	mg/l	0.5	1.0
19	Selenium as Se	APHA (23rd edition),3114C, 2017	*BDL(DL-0.005)	mg/l	0.01	No Relaxation

Shivani

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Page No. 1/2

G M LAB OPERATION

Note: Terms & conditions refer on backside of test report.



Vardan EnviroLab

Laboratory: Plot No. 24 & 25, Narayan Vihar, B-Block, Jaipur (Rajasthan) 302020
MoEF & CC Recognized | ISO 9001 | ISO 45001



Test Report

Sample Number : REGL/W/03/21-05

Report No. : VEL/W/2103300019/A

*BDL(Below Detection Limit),**DL(Detection Limit)

End of Report

Shivani
(Checked By)

RAJ KUMAR YADAV
(Authorized Signatory)
G M LAB OPERATION



Test Report

Sample Number : REGL/W/03/21-05
Name & Address of the Party : M/s Raigarh Energy Generation Ltd.
Village Chhote Bhandar, Post Office Bado Bandar
Tehsil Pussore, Dist-Raigarh-496100 (Chhattisgarh)

Report No. : VEL/W/2103300019/B
Format No : 7.8 F-01
Party Reference No : NIL
Report Date : 05/04/2021
Period of Analysis : 30/03/2021-05/04/2021
Receipt Date : 30/03/2021
Sampling Date : 24/03/2021
Sampling Quantity : 3 Ltr.
Sampling Type : Grab

Sample Description : GROUND WATER
Location : Near Site Office
Sample Collected by : Vardan EnviroLab Team
Preservation : Suitable Preservation
Sampling and Analysis Protocol : IS 10500 -2012

S.No.	Parameters	Protocols	Results	Units	IS:10500-2012	
					Acceptable Limits	Permissible Limits
1	Colour	IS 3025: 1987 (P-4) Reaff.2017	*BDL(DL-1.0)	Hazen	5	15
2	Odour	IS 3025 (P-5) : 2018	Agreeable	--	Agreeable	Agreeable
3	Taste	IS 3025 (P-8):1984 Reaff. 2017	Agreeable	--	Agreeable	Agreeable
4	Anionic Surface active agents (as MBAS)	APHA 23rd Edition 2017, 5540C	*BDL(DL-0.05)	mg/l	0.2	1.0
5	Fecal Coliform	IS-1622:2009	Absent	MPN/10 0ml	Shall not be detectable in any 100 ml sample	NA
6	Total Coliform	IS-1622:2009	Absent	MPN/10 0ml	Shall not be detectable in any 100 ml sample	
7	Residual Free Chlorine	IS:3025(P-26):1986,RA:2019:1986	*BDL(DL-0.2)	mg/l	0.2	1.0
8	E Coli	IS 1622, 1981 (Ref. 2003)	Absent	MPN/10 0ml	Absent/100 ml	Absent/100ml
9	Cyanide as CN	APHA 4500 CN -D	*BDL(DL-0.05)	mg/l	0.05	No Relaxation
10	Aluminium as Al	IS 3025 (P-55) 2003, RA 2019	*BDL(DL-0.03)	mg/l	0.03	0.2
11	Mineral Oil	IS 3025 (P-39)	*BDL(DL-0.05)	mg/l	0.5	No Relaxation
12	Ammonia	IS-3025(P-34)-1988,Reaff:2019	*BDL(DL-0.3)	mg/l	0.5	No Relaxation
13	Sulphide	IS3025(P-29):1986 Reaff 2019	*BDL(DL-0.1)	mg/l	200	400
14	Barium (Ba)	APHA 3111B	*BDL(DL-0.02)	mg/l	0.7	No Relaxation

*BDL(Below Detection Limit), **DL(Detection Limit)

End of Report

(Checked By)

RAJ KUMAR YADAV

(Authorized Signatory)
G M LAB OPERATION



Test Report

Sample Number : REGL/W/03/21-06
Name & Address of the Party : M/s Raigarh Energy Generation Ltd.
Village Chhote Bhandar, Post Office Bade Bandar
Tehsil Pussore, Dist-Raigarh-496100 (Chhattisgarh)

Report No. : VEL/W/2103300020/A
Format No : 7.8 F-01
Party Reference No : NIL
Report Date : 05/04/2021
Period of Analysis : 30/03/2021-05/04/2021
Receipt Date : 30/03/2021
Sampling Date : 24/03/2021
Sampling Quantity : 3 Ltr.
Sampling Type : Grab

Sample Description : GROUND WATER
Location : Village - Bade Bhandar
Sample Collected by : Vardan EnviroLab Team
Preservation : Suitable Preservation
Sampling and Analysis Protocol : IS 10500 -2012

S.No.	Parameters	Protocols	Results	Units	IS:10500-2012	
					Acceptable Limits	Permissible Limits
1	pH value	IS 3025 (P-11): 1983 Reaff. 2017	7.50	--	6.5 to 8.5	No Relaxation
2	Turbidity	IS 3025 (Part 10): 1984, Reaff. 2017, (Nephelometric Method)	*BDL(DL-1.0)	NTU	1	5
3	Total Dissolved Solids	IS 3025 (P-16): 1984 Reaff 2017	487.80	mg/l	500	2000
4	Chloride (as Cl)	IS: 3025 (Part 32): 1988, Reaff. 2019	82.31	mg/l	250	1000
5	Sulphate as (SO ₄)	IS: 3025 (Part 24): 1986, Reaff. 2019 Turbidity Method	35.89	mg/l	200	400
6	Total Alkalinity (as CaCO ₃)	IS: 3025 (Part 23): 1986, Reaff. 2019	216.14	mg/l	200	600
7	Total Hardness (CaCO ₃)	IS: 3025 (Part 21): 2009, Reaff. 2019	257.60	mg/l	200	600
8	Calcium (as Ca)	IS: 3025 (Part 40): 1991 Reaff. 2019 (EDTA method)	71.90	mg/l	75	200
9	Magnesium	IS: 3025 (Part 46): 1994, Reaff. 2019 (EDTA method)	19.0	mg/l	30	100
10	Fluoride (as F)	APHA 23rd Edition 2017, 4500FD	0.39	mg/l	1.0	1.5
11	Nitrate (as NO ₃)	IS: 3025 (Part 34): 1988, Reaff. 2019 (Chromotropic Method)	2.02	mg/l	45	No Relaxation
12	Phenolic compounds	APHA 23rd Edition 2017, 5530C	*BDL(DL-0.001)	mg/l	0.001	0.002
13	Iron	IS:3025(P-53):2003,RA.2019:2003	0.22	mg/l	0.3	No Relaxation
14	Zinc as (Zn)	APHA (23rd edition), 3030D,3113B	*BDL(DL-0.2)	mg/l	5.0	15.0
15	Copper (Cu)	APHA (23rd edition), 3111B	*BDL(DL-0.02)	mg/l	0.05	1.5
16	Manganese as Mn	APHA3111B	*BDL(DL-0.05)	mg/l	0.1	0.3
17	Arsenic as As	APHA (23rd edition), 3030D,3114C, 2017	*BDL(DL-0.005)	mg/l	0.01	0.05
18	Boron	APHA (23rd edition) 4500B, 2017	*BDL(DL-0.2)	mg/l	0.5	1.0
19	Selenium as Se	APHA (23rd edition),3114C, 2017	*BDL(DL-0.005)	mg/l	0.01	No Relaxation

Shivani

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Note: Terms & conditions refer on backside of test report.



Vardan EnviroLab

Laboratory: Plot No. 24 & 25, Narayan Vihar, B-Block, Jaipur (Rajasthan) 302020
MoEF & CC Recognized | ISO 9001 | ISO 45001



Test Report

Sample Number : REGL/W/03/21-06

Report No. : VELW/2103300020/A

*BDL(Below Detection Limit),**DL(Detection Limit)

End of Report

Shivani
(Checked By)

RAJ KUMAR YADAV
(Authorized Signatory)
G M LAB OPERATION



Test Report

Sample Number : REGLW/03/21-06
Name & Address of the Party : M/s Raigarh Energy Generation Ltd.
Village Chhote Bhandar, Post Office Bade Bandar
Tehsil Pussore, Dist-Raigarh-496100 (Chhattisgarh)

Sample Description : GROUND WATER
Location : Village - Bade Bhandar
Sample Collected by : Vardan EnviroLab Team
Preservation : Suitable Preservation
Sampling and Analysis Protocol : IS 10500-2012


Report No. : VEL/W/2103300020/B
Format No : 7.8 F-01
Party Reference No : NIL
Report Date : 05/04/2021
Period of Analysis : 30/03/2021-05/04/2021
Receipt Date : 30/03/2021
Sampling Date : 24/03/2021
Sampling Quantity : 3 Ltr.
Sampling Type : Grab

S.No.	Parameters	Protocols	Results	Units	IS:10500-2012	
					Acceptable Limits	Permissible Limits
1	Colour	IS 3025: 1987 (P-4) Reaff.2017	*BDL(DL-1.0)	Hazen	5	15
2	Odour	IS 3025 (P-5) : 2018	Agreeable	--	Agreeable	Agreeable
3	Taste	IS 3025 (P-8):1984 Reaff. 2017	Agreeable	--	Agreeable	Agreeable
4	Anionic Surface active agents (as MBAS)	APHA 23rd Edition 2017, 5540C	*BDL(DL-0.05)	mg/l	0.2	1.0
5	Fecal Coliform	IS-1622:2009	Absent	MPN/10 0ml	Shall not be detectable in any 100 ml sample	NA
6	Total Coliform	IS-1622:2009	Absent	MPN/10 0ml	Shall not be detectable in any 100 ml sample	
7	Residual Free Chlorine	IS:3025(P-26):1986,RA:2019:1986	*BDL(DL-0.2)	mg/l	0.2	1.0
8	E Coli	IS 1622, 1981 (Ref. 2003)	Absent	MPN/10 0ml	Absent/100 ml	Absent/100ml
9	Cyanide as CN	APHA 4500 CN -D	*BDL(DL-0.05)	mg/l	0.05	No Relaxation
10	Aluminium as Al	IS 3025 (P-55) 2003, RA 2019	*BDL(DL-0.03)	mg/l	0.03	0.2
11	Mineral Oil	IS 3025 (P-39)	*BDL(DL-0.05)	mg/l	0.5	No Relaxation
12	Ammonia	IS-3025(P-34)-1988,Reaff:2019	*BDL(DL-0.3)	mg/l	0.5	No Relaxation
13	Sulphide	IS3025(P-29):1986 Reaff 2019	*BDL(DL-0.1)	mg/l	200	400
14	Barium (Ba)	APHA 3111B	*BDL(DL-0.02)	mg/l	0.7	No Relaxation

*BDL(Below Detection Limit), **DL(Detection Limit)

End of Report


(Checked By)

RAJ KUMAR YADAV

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G M LAB OPERATION



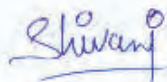
Test Report

Sample Number : REGLW/03/21-07
Name & Address of the Party : M/s Raigarh Energy Generation Ltd.
Village Chhote Bhandar, Post Office Bade Bandar
Tehsil Pussore, Dist-Raigarh-496100 (Chhattisgarh)

Sample Description : GROUND WATER
Location : Village - Chote Bhandar
Sample Collected by : Vardan EnviroLab Team
Preservation : Suitable Preservation
Sampling and Analysis Protocol : IS 10500 -2012

Report No. : VELW/2103300021/A
Format No : 7.8 F-01
Party Reference No : NIL
Report Date : 05/04/2021
Period of Analysis : 30/03/2021-05/04/2021
Receipt Date : 30/03/2021
Sampling Date : 24/03/2021
Sampling Quantity : 3 Ltr.
Sampling Type : Grab

S.No.	Parameters	Protocols	Results	Units	IS:10500-2012	
					Acceptable Limits	Permissible Limits
1	pH value	IS 3025 (P-11): 1983 Reaff. 2017	7.62	-	6.5 to 8.5	No Relaxation
2	Turbidity	IS 3025 (Part 10): 1984, Reaff. 2017, (Nephelometric Method)	*BDL(DL-1.0)	NTU	1	5
3	Total Dissolved Solids	IS 3025 (P-16): 1984 Reaff 2017	421.40	mg/l	500	2000
4	Chloride (as Cl)	IS: 3025 (Part 32): 1988, Reaff. 2019	78.49	mg/l	250	1000
5	Sulphate as (SO ₄)	IS: 3025 (Part 24): 1986, Reaff. 2019 Turbidity Method	39.92	mg/l	200	400
6	Total Alkalinity (as CaCO ₃)	IS: 3025 (Part 23): 1986, Reaff. 2019	226.24	mg/l	200	600
7	Total Hardness (CaCO ₃)	IS: 3025 (Part 21): 2009, Reaff. 2019	266.8	mg/l	200	600
8	Calcium (as Ca)	IS: 3025 (Part 40): 1991 Reaff. 2019 (EDTA method)	82.97	mg/l	75	200
9	Magnesium	IS: 3025 (Part 46): 1994, Reaff. 2019 (EDTA method)	14.53	mg/l	30	100
10	Fluoride (as F)	APHA 23rd Edition 2017, 4500FD	0.37	mg/l	1.0	1.5
11	Nitrate (as NO ₃)	IS: 3025 (Part 34): 1988, Reaff. 2019 (Chromotropic Method)	2.82	mg/l	45	No Relaxation
12	Phenolic compounds	APHA 23rd Edition 2017, 5530C	*BDL(DL-0.001)	mg/l	0.001	0.002
13	Iron	IS:3025(P-53):2003,RA.2019:2003	0.24	mg/l	0.3	No Relaxation
14	Zinc as (Zn)	APHA (23rd edition), 3030D,3113B	*BDL(DL-0.2)	mg/l	5.0	15.0
15	Copper (Cu)	APHA (23rd edition), 3111B	*BDL(DL-0.02)	mg/l	0.05	1.5
16	Manganese as Mn	APHA3111B	*BDL(DL-0.05)	mg/l	0.1	0.3
17	Arsenic as As	APHA (23rd edition), 3030D,3114C, 2017	*BDL(DL-0.005)	mg/l	0.01	0.05
18	Boron	APHA (23rd edition) 4500B, 2017	*BDL(DL-0.2)	mg/l	0.5	1.0
19	Selenium as Se	APHA (23rd edition),3114C, 2017	*BDL(DL-0.005)	mg/l	0.01	No Relaxation



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G M LAB OPERATION

Note: Terms & conditions refer on backside of test report.



Vardan EnviroLab

Laboratory: Plot No. 24 & 25, Narayan Vihar, B-Block, Jaipur (Rajasthan) 302020
MoEF & CC Recognized | ISO 9001 | ISO 45001



Test Report

Sample Number : REGL/W/03/21-07

Report No. : VEL/W/2103300021/A

*BDL(Below Detection Limit), **DL(Detection Limit)

End of Report


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(Authorized Signatory)
G M LAB OPERATION



Test Report

Sample Number : REGLW/03/21-07
Name & Address of the Party : M/s Raigarh Energy Generation Ltd.
Village Chhote Bhandar, Post Office Bade Bandar
Tehsil Pussore, Dist-Raigarh-496100 (Chhattisgarh)

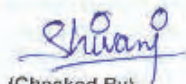
Sample Description : GROUND WATER
Location : Village - Chote Bhandar
Sample Collected by : Vardan EnviroLab Team
Preservation : Suitable Preservation
Sampling and Analysis Protocol : IS 10500 -2012

Report No. : VELW/2103300021/B
Format No : 7.8 F-01
Party Reference No : NIL
Report Date : 05/04/2021
Period of Analysis : 30/03/2021-05/04/2021
Receipt Date : 30/03/2021
Sampling Date : 24/03/2021
Sampling Quantity : 3 Ltr.
Sampling Type : Grab

S.No.	Parameters	Protocols	Results	Units	IS:10500-2012	
					Acceptable Limits	Permissible Limits
1	Colour	IS 3025: 1987 (P-4) Reaff.2017	*BDL(DL-1.0)	Hazen	5	15
2	Odour	IS 3025 (P-5) : 2018	Agreeable	--	Agreeable	Agreeable
3	Taste	IS 3025 (P-8):1984 Reaff. 2017	Agreeable	--	Agreeable	Agreeable
4	Anionic Surface active agents (as MBAS)	APHA 23rd Edition 2017, 5540C	*BDL(DL-0.05)	mg/l	0.2	1.0
5	Fecal Coliform	IS-1622:2009	Absent	MPN/10 0ml	Shall not be detectable in any 100 ml sample	NA
6	Total Coliform	IS-1622:2009	Absent	MPN/10 0ml	Shall not be detectable in any 100 ml sample	
7	Residual Free Chlorine	IS:3025(P-26):1986,RA:2019:1986	*BDL(DL-0.2)	mg/l	0.2	1.0
8	E Coli	IS 1622, 1981 (Ref. 2003)	Absent	MPN/10 0ml	Absent/100 ml	Absent/100ml
9	Cyanide as CN	APHA 4500 CN -D	*BDL(DL-0.05)	mg/l	0.05	No Relaxation
10	Aluminium as Al	IS 3025 (P-55) 2003, RA 2019	*BDL(DL-0.03)	mg/l	0.03	0.2
11	Mineral Oil	IS 3025 (P-39)	*BDL(DL-0.05)	mg/l	0.5	No Relaxation
12	Ammonia	IS-3025(P-34)-1988,Reaff:2019	*BDL(DL-0.3)	mg/l	0.5	No Relaxation
13	Sulphide	IS3025(P-29):1986 Reaff 2019	*BDL(DL-0.1)	mg/l	200	400
14	Barium (Ba)	APHA 3111B	*BDL(DL-0.02)	mg/l	0.7	No Relaxation

*BDL(Below Detection Limit),**DL(Detection Limit)

End of Report


(Checked By)

RAJKUMAR YADAV
(Authorized Signatory)
G M LAB OPERATION



Test Report

Sample Number : REGL/W/03/21-08
Name & Address of the Party : M/s Raigarh Energy Generation Ltd.
Village Chhote Bhandar, Post Office Bade Bandar
Tehsil Pussore, Dist-Raigarh-496100 (Chhattisgarh)

Sample Description : GROUND WATER
Location : Village - Kathil
Sample Collected by : Vardan EnviroLab Team
Preservation : Suitable Preservation
Sampling and Analysis Protocol : IS 10500 -2012

Report No. : VEL/W/2103300022/A
Format No : 7.8 F-01
Party Reference No : NIL
Report Date : 05/04/2021
Period of Analysis : 30/03/2021-05/04/2021
Receipt Date : 30/03/2021
Sampling Date : 25/03/2021
Sampling Quantity : 3 Ltr.
Sampling Type : Grab

S.No.	Parameters	Protocols	Results	Units	IS:10500-2012	
					Acceptable Limits	Permissible Limits
1	pH value	IS 3025 (P-11): 1983 Reaff. 2017	7.32	--	6.5 to 8.5	No Relaxation
2	Turbidity	IS 3025 (Part 10): 1984, Reaff. 2017, (Nephelometric Method)	*BDL(DL-1.0)	NTU	1	5
3	Total Dissolved Solids	IS 3025 (P-16): 1984 Reaff 2017	487.70	mg/l	500	2000
4	Chloride (as Cl)	IS: 3025 (Part 32): 1988, Reaff. 2019	72.74	mg/l	250	1000
5	Sulphate as (SO ₄)	IS: 3025 (Part 24): 1986, Reaff. 2019 Turbidity Method	35.89	mg/l	200	400
6	Total Alkalinity (as CaCO ₃)	IS: 3025 (Part 23): 1986, Reaff. 2019	254.52	mg/l	200	600
7	Total Hardness (CaCO ₃)	IS: 3025 (Part 21): 2009, Reaff. 2019	285.20	mg/l	200	600
8	Calcium (as Ca)	IS: 3025 (Part 40): 1991 Reaff. 2019 (EDTA method)	84.80	mg/l	75	200
9	Magnesium	IS: 3025 (Part 46): 1994, Reaff. 2019 (EDTA method)	17.88	mg/l	30	100
10	Fluoride (as F)	APHA 23rd Edition 2017, 4500FD	0.47	mg/l	1.0	1.5
11	Nitrate (as NO ₃)	IS: 3025 (Part 34): 1988, Reaff. 2019 (Chromotropic Method)	3.20	mg/l	45	No Relaxation
12	Phenolic compounds	APHA 23rd Edition 2017, 5530C	*BDL(DL-0.001)	mg/l	0.001	0.002
13	Iron	IS:3025(P-53):2003,RA.2019:2003	0.24	mg/l	0.3	No Relaxation
14	Zinc as (Zn)	APHA (23rd edition), 3030D,3113B	*BDL(DL-0.2)	mg/l	5.0	15.0
15	Copper (Cu)	APHA (23rd edition), 3111B	*BDL(DL-0.02)	mg/l	0.05	1.5
16	Manganese as Mn	APHA3111B	*BDL(DL-0.05)	mg/l	0.1	0.3
17	Arsenic as As	APHA (23rd edition), 3030D,3114C, 2017	*BDL(DL-0.005)	mg/l	0.01	0.05
18	Boron	APHA (23rd edition) 4500B, 2017	*BDL(DL-0.2)	mg/l	0.5	1.0
19	Selenium as Se	APHA (23rd edition),3114C, 2017	*BDL(DL-0.005)	mg/l	0.01	No Relaxation



RAJ KUMAR YADAV
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G M LAB OPERATION

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Note: Terms & conditions refer on backside of test report.



Vardan EnviroLab

Laboratory: Plot No. 24 & 25, Narayan Vihar, B-Block, Jaipur (Rajasthan) 302020
MoEF & CC Recognized | ISO 9001 | ISO 45001



TC-6652

Test Report

Sample Number : REGL/W/03/21-08
*BDL(Below Detection Limit),**DL(Detection Limit)

Report No. : VELW/2103300022/A

End of Report

Shivani
(Checked By)

RAJ KUMAR YADAV
(Authorized Signatory)

C M LAB OPERATION



Test Report

Sample Number : REGL/W/03/21-08
Name & Address of the Party : M/s Raigarh Energy Generation Ltd
Village Chhote Bhandar, Post Office Bade Bandar
Tehsil Pussore, Dist-Raigarh-496100 (Chhattisgarh)

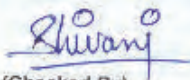
Sample Description : GROUND WATER
Location : Village - Kathli
Sample Collected by : Vardan EnviroLab Team
Preservation : Suitable Preservation
Sampling and Analysis Protocol : IS 10500 -2012

Report No. : VEL/W/2103300022/B
Format No : 7.8 F-01
Party Reference No : NIL
Report Date : 05/04/2021
Period of Analysis : 30/03/2021-05/04/2021
Receipt Date : 30/03/2021
Sampling Date : 25/03/2021
Sampling Quantity : 3 Ltr.
Sampling Type : Grab

S.No.	Parameters	Protocols	Results	Units	IS:10500-2012	
					Acceptable Limits	Permissible Limits
1	Colour	IS 3025: 1987 (P-4) Reaff.2017	*BDL(DL-1.0)	Hazen	5	15
2	Odour	IS 3025 (P-5) : 2018	Agreeable	--	Agreeable	Agreeable
3	Taste	IS 3025 (P-8):1984 Reaff. 2017	Agreeable	--	Agreeable	Agreeable
4	Anionic Surface active agents (as MBAS)	APHA 23rd Edition 2017, 5540C	*BDL(DL-0.05)	mg/l	0.2	1.0
5	Fecal Coliform	IS-1622:2009	Absent	MPN/10 0ml	Shall not be detectable in any 100 ml sample	NA
6	Total Coliform	IS-1622:2009	Absent	MPN/10 0ml	Shall not be detectable in any 100 ml sample	
7	Residual Free Chlorine	IS:3025(P-26):1986,RA:2019:1986	*BDL(DL-0.2)	mg/l	0.2	1.0
8	E Coli	IS 1622, 1981 (Ref. 2003)	Absent	MPN/10 0ml	Absent/100 ml	Absent/100ml
9	Cyanide as CN	APHA 4500 CN -D	*BDL(DL-0.05)	mg/l	0.05	No Relaxation
10	Aluminium as Al	IS 3025 (P-55) 2003, RA 2019	*BDL(DL-0.03)	mg/l	0.03	0.2
11	Mineral Oil	IS 3025 (P-39)	*BDL(DL-0.05)	mg/l	0.5	No Relaxation
12	Ammonia	IS-3025(P-34)-1988,Reaff:2019	*BDL(DL-0.3)	mg/l	0.5	No Relaxation
13	Sulphide	IS3025(P-29):1986 Reaff 2019	*BDL(DL-0.1)	mg/l	200	400
14	Barium (Ba)	APHA 3111B	*BDL(DL-0.02)	mg/l	0.7	No Relaxation

*BDL(Below Detection Limit),**DL(Detection Limit)

End of Report


(Checked By)


(Authorized Signatory)
G M LAB OPERATION



Test Report

Sample Number : REGL/W/03/21-09
Name & Address of the Party : M/s Raigarh Energy Generation Ltd.
Village Chhote Bhandar, Post Office Bade Bandar
Tehsil Pussore, Dist-Raigarh-496100 (Chhattisgarh)

Report No. : VEL/W/2103300023/A
Format No : 7.8 F-01
Party Reference No : NIL
Report Date : 05/04/2021
Period of Analysis : 30/03/2021-05/04/2021
Receipt Date : 30/03/2021
Sampling Date : 25/03/2021
Sampling Quantity : 3 Ltr.
Sampling Type : Grab

Sample Description : GROUND WATER
Location : Village - Palsada
Sample Collected by : Vardan EnviroLab Team
Preservation : Suitable Preservation
Sampling and Analysis Protocol : IS 10500 -2012

S.No.	Parameters	Protocols	Results	Units	IS:10500-2012	
					Acceptable Limits	Permissible Limits
1	pH value	IS 3025 (P-11): 1983 Reaff. 2017	7.48	--	6.5 to 8.5	No Relaxation
2	Turbidity	IS 3025 (Part 10): 1984, Reaff. 2017, (Nephelometric Method)	*BDL(DL-1.0)	NTU	1	5
3	Total Dissolved Solids	IS 3025 (P-16): 1984 Reaff 2017	386.80	mg/l	500	2000
4	Chloride (as Cl)	IS: 3025 (Part 32): 1988, Reaff. 2019	49.77	mg/l	250	1000
5	Sulphate as (SO4)	IS: 3025 (Part 24): 1986, Reaff. 2019 Turbidity Method	20.56	mg/l	200	400
6	Total Alkalinity (as CaCO3)	IS: 3025 (Part 23): 1986, Reaff. 2019	197.96	mg/l	200	600
7	Total Hardness (CaCO3)	IS: 3025 (Part 21): 2009, Reaff. 2019	211.60	mg/l	200	600
8	Calcium (as Ca)	IS: 3025 (Part 40): 1991 Reaff. 2019 (EDTA method)	60.84	mg/l	75	200
9	Magnesium	IS: 3025 (Part 46): 1994, Reaff. 2019 (EDTA method)	14.53	mg/l	30	100
10	Fluoride (as F)	APHA 23rd Edition 2017, 4500FD	0.37	mg/l	1.0	1.5
11	Nitrate (as NO3)	IS: 3025 (Part 34): 1988, Reaff. 2019 (Chromotropic Method)	1.06	mg/l	45	No Relaxation
12	Phenolic compounds	APHA 23rd Edition 2017, 5530C	*BDL(DL-0.001)	mg/l	0.001	0.002
13	Iron	IS:3025(P-53):2003,RA.2019:2003	0.21	mg/l	0.3	No Relaxation
14	Zinc as (Zn)	APHA (23rd edition), 3030D,3113B	*BDL(DL-0.2)	mg/l	5.0	15.0
15	Copper (Cu)	APHA (23rd edition), 3111B	*BDL(DL-0.02)	mg/l	0.05	1.5
16	Manganese as Mn	APHA3111B	*BDL(DL-0.05)	mg/l	0.1	0.3
17	Arsenic as As	APHA (23rd edition), 3030D,3114C, 2017	*BDL(DL-0.005)	mg/l	0.01	0.05
18	Boron	APHA (23rd edition) 4500B, 2017	*BDL(DL-0.2)	mg/l	0.5	1.0
19	Selenium as Se	APHA (23rd edition),3114C, 2017	*BDL(DL-0.005)	mg/l	0.01	No Relaxation

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Note: Terms & conditions refer on backside of test report.



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TC-6652

Test Report

Sample Number : REGL/W/03/21-09

Report No. : VELW/2103300023/A

*BDL(Below Detection Limit),**DL(Detection Limit)

End of Report

(Checked By)

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(Authorized Signatory)

G M LAB OPERATION



Test Report

Sample Number : REGL/W/03/21-09
 Name & Address of the Party : M/s Raigarh Energy Generation Ltd
 Village Chhote Bhandar, Post Office Bade Bandar
 Tehsil Pussore, Dist-Raigarh-496100 (Chhattisgarh)

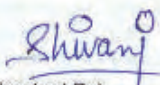
Sample Description : GROUND WATER
 Location : Village - Palsada
 Sample Collected by : Vardan EnviroLab Team
 Preservation : Suitable Preservation
 Sampling and Analysis Protocol : IS 10500 -2012

Report No. : VEL/W/2103300023/B
 Format No : 7.8 F-01
 Party Reference No : NIL
 Report Date : 05/04/2021
 Period of Analysis : 30/03/2021-05/04/2021
 Receipt Date : 30/03/2021
 Sampling Date : 25/03/2021
 Sampling Quantity : 3 Ltr.
 Sampling Type : Grab

S.No.	Parameters	Protocols	Results	Units	IS:10500-2012	
					Acceptable Limits	Permissible Limits
1	Colour	IS 3025: 1987 (P-4) Reaff.2017	*BDL(DL-1.0)	Hazen	5	15
2	Odour	IS 3025 (P-5) : 2018	Agreeable	--	Agreeable	Agreeable
3	Taste	IS 3025 (P-8):1984 Reaff. 2017	Agreeable	--	Agreeable	Agreeable
4	Anionic Surface active agents (as MBAS)	APHA 23rd Edition 2017, 5540C	*BDL(DL-0.05)	mg/l	0.2	1.0
5	Fecal Coliform	IS-1622:2009	Absent	MPN/10 0ml	Shall not be detectable in any 100 ml sample	NA
6	Total Coliform	IS-1622:2009	Absent	MPN/10 0ml	Shall not be detectable in any 100 ml sample	
7	Residual Free Chlorine	IS:3025(P-26):1986,RA:2019:1986	*BDL(DL-0.2)	mg/l	0.2	1.0
8	E Coli	IS 1622, 1981 (Ref. 2003)	Absent	MPN/10 0ml	Absent/100 ml	Absent/100ml
9	Cyanide as CN	APHA 4500 CN -D	*BDL(DL-0.05)	mg/l	0.05	No Relaxation
10	Aluminium as Al	IS 3025 (P-55) 2003, RA 2019	*BDL(DL-0.03)	mg/l	0.03	0.2
11	Mineral Oil	IS 3025 (P-39)	*BDL(DL-0.05)	mg/l	0.5	No Relaxation
12	Ammonia	IS-3025(P-34)-1988,Reaff:2019	*BDL(DL-0.3)	mg/l	0.5	No Relaxation
13	Sulphide	IS3025(P-29):1986 Reaff 2019	*BDL(DL-0.1)	mg/l	200	400
14	Barium (Ba)	APHA 3111B	*BDL(DL-0.02)	mg/l	0.7	No Relaxation

*BDL(Below Detection Limit),**DL(Detection Limit)

End of Report


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 (Authorized Signatory)

4.4 Surface water Quality Analysis



Figure. No. 6. Plan Showing Surface Water Quality Monitoring Location Map

Location Code: - 1. Mand Nadi River (Up Stream)

2. Mand Nadi River (Down Stream)



Test Report

Sample Number :	REGL/W/03/21-01	Report No. :	VEL/W/2103300015/A
Name & Address of the Party :	M/s Raigarh Energy Generation Ltd. Village Chhote Bhandar, Post Office Bade Bandar Tehsil Pussore, Dist-Raigarh-496100 (Chhattisgarh)	Format No :	7.8 F-01
Name of the Project :		Party Reference No :	NIL
Sample Description :	SURFACE WATER	Report Date :	05/04/2021
Location :	Mand River (Down Stream)	Period of Analysis :	30/03/2021-05/04/2021
Sample Collected by :	Vardan EnviroLab Team	Receipt Date :	30/03/2021
Parameter Required :	As Per Work Order	Sampling Date :	25/03/2021
Sampling and Analysis Protocol :	IS 2296	Sampling Quantity :	3 Ltr.
		Sampling Type :	Grab
		Preservation :	Suitable Preservation

S.No.	Test Parameters	Test Method	Results	Units
1	pH value	IS 3025 (P-11): 1983 Reaff. 2017	7.49	--
2	Turbidity	IS 3025 (Part 10): 1984, Reaff: 2017, (Nephelometric Method)	2.0	NTU
3	Total Dissolved Solids	IS 3025 (P-16): 1984 Reaff 2017	308.8	mg/l
4	Chloride (as Cl)	IS: 3025 (Part 32): 1988, Reaff. 2019	58.39	mg/l
5	Sulphate as (SO ₄)	IS: 3025 (Part 24): 1986, Reaff. 2019 Turbidity Method	34.27	mg/l
6	Total Alkalinity (as CaCO ₃)	IS: 3025 (Part 23): 1986, Reaff. 2019	101.0	mg/l
7	Total Hardness (CaCO ₃)	IS: 3025 (Part 21): 2009, Reaff. 2019	142.60	mg/l
8	Calcium (as Ca)	IS: 3025 (Part 40): 1991 Reaff. 2019 (EDTA method)	47.94	mg/l
9	Magnesium	IS: 3025 (Part 46): 1994, Reaff. 2019 (EDTA method)	5.59	mg/l
10	Fluoride (as F)	APHA 23rd Edition 2017, 4500FD	0.29	mg/l
11	Nitrate (as NO ₃)	IS: 3025 (Part 34): 1988, Reaff. 2019 (Chromotropic Method)	3.81	mg/l
12	Phenolic compounds	APHA 23rd Edition 2017, 5530C	*BDL(DL-0.001)	mg/l
13	Iron	IS:3025(P-53):2003,RA.2019:2003	0.24	mg/l
14	Zinc as (Zn)	APHA (23rd edition), 3030D,3113B	*BDL(DL-0.2)	mg/l
15	Copper (Cu)	APHA (23rd edition), 3111B	*BDL(DL-0.02)	mg/l
16	Manganese as Mn	APHA3111B	*BDL(DL-0.05)	mg/l
17	Arsenic as As	APHA (23rd edition), 3030D,3114C, 2017	*BDL(DL-0.005)	mg/l
18	Boron	APHA (23rd edition) 4500B, 2017	0.35	mg/l
19	Selenium as Se	APHA (23rd edition),3114C, 2017	*BDL(DL-0.005)	mg/l

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Note: Terms & conditions refer on backside of test report.



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TC-6652

Test Report


Sample Number : REGL/W/03/21-01

Report No. : VEL/W/2103300015/A

*BDL(Below Detection Limit),**DL(Detection Limit)

End of Report


(Checked By)


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G M LAB OPERATION



Test Report

Sample Number : REGL/W/03/21-01
Name & Address of the Party : M/s Raigarh Energy Generation Ltd.
Village Chhote Bhandar, Post Office Bade Bandar
Tehsil Pussore, Dist-Raigarh-496100 (Chhattisgarh)
Name of the Project :
Sample Description : SURFACE WATER
Location : Mand River (Down Stream)
Sample Collected by : Vardan EnviroLab Team
Parameter Required : As Per Work Order
Sampling and Analysis Protocol : IS 2296

Report No. : VEL/W/2103300015/B
Format No : 7.8 F-01
Party Reference No : NIL
Report Date : 05/04/2021
Period of Analysis : 30/03/2021-05/04/2021
Receipt Date : 30/03/2021
Sampling Date : 25/03/2021
Sampling Quantity : 3 Ltr.
Sampling Type : Grab
Preservation : Suitable Preservation

S.No.	Test Parameters	Test Method	Results	Units
1	Colour	IS 3025: 1987 (P-4) Reaff.2017	*BDL(DL-1.0)	Hazen
2	Odour	IS 3025 (P-5) : 2018	Agreeable	--
3	Taste	IS 3025 (P-8):1984 Reaff. 2017	Agreeable	--
4	Anionic Surface active agents (as MBAS)	APHA 23rd Edition 2017, 5540C	*BDL(DL-0.05)	mg/l
5	Fecal Coliform	IS-1622:2009	34.0	MPN/100ml
6	Total Coliform	IS-1622:2009	43.0	MPN/100ml
7	Residual Free Chlorine	IS:3025(P-26):1986,RA:2019:1986	*BDL(DL-0.2)	mg/l
8	E Coli	IS 1622, 1981 (Ref. 2003)	Present	MPN/100ml
9	Cyanide as CN	APHA 4500 CN -D	*BDL(DL-0.05)	mg/l
10	Aluminium as Al	IS 3025 (P-55) 2003, RA 2019	*BDL(DL-0.03)	mg/l
11	Mineral Oil	IS 3025 (P-39)	*BDL(DL-0.05)	mg/l
12	Ammonia	IS-3025(P-34)-1988,Reaff:2019	1.98	mg/l
13	Sulphide	IS3025(P-29):1986 Reaff 2019	*BDL(DL-0.1)	mg/l
14	Barium (Ba)	APHA 3111B	*BDL(DL-0.02)	mg/l

*BDL(Below Detection Limit),**DL(Detection Limit)

End of Report


(Checked By)

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Test Report

Sample Number : REGLW/03/21-02
Name & Address of the Party : M/s Raigarh Energy Generation Ltd.
Village Chhote Bhandar, Post Office Bade Bandar
Tehsil Pussore, Dist-Raigarh-496100 (Chhattisgarh)

Name of the Project :

Sample Description : SURFACE WATER
Location : Mand River (Up Stream)
Sample Collected by : Vardan EnviroLab Team
Parameter Required : As Per Work Order
Sampling and Analysis Protocol : IS 2296

Report No. : VELAW/2103300016/A
Format No : 7.8 F-01
Party Reference No : NIL
Report Date : 05/04/2021
Period of Analysis : 30/03/2021-05/04/2021
Receipt Date : 30/03/2021
Sampling Date : 25/03/2021
Sampling Quantity : 3 Ltr.
Sampling Type : Grab
Preservation : Suitable Preservation

S.No.	Test Parameters	Test Method	Results	Units
1	pH value	IS 3025 (P-11): 1983 Reaff. 2017	7.42	--
2	Turbidity	IS 3025 (Part 10): 1984, Reaff: 2017, (Nephelometric Method)	2.0	NTU
3	Total Dissolved Solids	IS 3025 (P-16): 1984 Reaff 2017	237.7	mg/l
4	Chloride (as Cl)	IS: 3025 (Part 32): 1988, Reaff. 2019	48.81	mg/l
5	Sulphate as (SO ₄)	IS: 3025 (Part 24): 1988, Reaff. 2019 Turbidity Method	22.18	mg/l
6	Total Alkalinity (as CaCO ₃)	IS: 3025 (Part 23): 1986, Reaff. 2019	88.88	mg/l
7	Total Hardness (CaCO ₃)	IS: 3025 (Part 21): 2009, Reaff. 2019	105.8	mg/l
8	Calcium (as Ca)	IS: 3025 (Part 40): 1991 Reaff. 2019 (EDTA method)	38.72	mg/l
9	Magnesium	IS: 3025 (Part 46): 1994, Reaff. 2019 (EDTA method)	2.23	mg/l
10	Fluoride (as F)	APHA 23rd Edition 2017, 4500FD	0.33	mg/l
11	Nitrate (as NO ₃)	IS: 3025 (Part 34): 1988, Reaff. 2019 (Chromotropic Method)	3.62	mg/l
12	Phenolic compounds	APHA 23rd Edition 2017, 5530C	*BDL(DL-0.001)	mg/l
13	Iron	IS:3025(P-53):2003,RA.2019:2003	0.22	mg/l
14	Zinc as (Zn)	APHA (23rd edition), 3030D,3113B	*BDL(DL-0.2)	mg/l
15	Copper (Cu)	APHA (23rd edition), 3111B	*BDL(DL-0.02)	mg/l
16	Manganese as Mn	APHA3111B	*BDL(DL-0.05)	mg/l
17	Arsenic as As	APHA (23rd edition), 3030D,3114C, 2017	*BDL(DL-0.005)	mg/l
18	Boron	APHA (23rd edition) 4500B, 2017	*BDL(DL-0.2)	mg/l
19	Selenium as Se	APHA (23rd edition),3114C, 2017	*BDL(DL-0.005)	mg/l

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Test Report

Sample Number : REGL/W/03/21-02

Report No. : VEL/W/2103300016/A

*BDL(Below Detection Limit),**DL(Detection Limit)

End of Report

(Checked By)

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G M LAB OPERATION



Test Report

Sample Number : REGLW/03/21-02
Name & Address of the Party : M/s Raigarh Energy Generation Ltd.
Village Chhote Bhandar, Post Office Bade Bandar
Tehsil Pussore, Dist-Raigarh-496100 (Chhattisgarh)
Name of the Project :
Sample Description : SURFACE WATER
Location : Mand River (Up Stream)
Sample Collected by : Vardan EnviroLab Team
Parameter Required : As Per Work Order
Sampling and Analysis Protocol : IS 2296

Report No. : VELW/2103300016/B
Format No : 7.8 F-01
Party Reference No : NIL
Report Date : 05/04/2021
Period of Analysis : 30/03/2021-05/04/2021
Receipt Date : 30/03/2021
Sampling Date : 25/03/2021
Sampling Quantity : 3 Ltr.
Sampling Type : Grab
Preservation : Suitable Preservation

S.No.	Test Parameters	Test Method	Results	Units
1	Colour	IS 3025: 1987 (P-4) Reaff.2017	*BDL(DL-1.0)	Hazen
2	Odour	IS 3025 (P-5) : 2018	Agreeable	--
3	Taste	IS 3025 (P-8):1984 Reaff. 2017	Agreeable	--
4	Anionic Surface active agents (as MBAS)	APHA 23rd Edition 2017, 5540C	*BDL(DL-0.05)	mg/l
5	Fecal Coliform	IS-1622:2009	23.0	MPN/100ml
6	Total Coliform	IS-1622:2009	31.0	MPN/100ml
7	Residual Free Chlorine	IS:3025(P-26):1986,RA:2019:1986	*BDL(DL-0.2)	mg/l
8	E Coli	IS 1622; 1981 (Ref. 2003)	Present	MPN/100ml
9	Cyanide as CN	APHA 4500 CN -D	*BDL(DL-0.05)	mg/l
10	Aluminium as Al	IS 3025 (P-55) 2003, RA 2019	*BDL(DL-0.03)	mg/l
11	Mineral Oil	IS 3025 (P-39)	*BDL(DL-0.05)	mg/l
12	Ammonia	IS-3025(P-34)-1988,Reaff:2019	2.26	mg/l
13	Sulphide	IS3025(P-29):1986 Reaff 2019	*BDL(DL-0.1)	mg/l
14	Barium (Ba)	APHA 3111B	*BDL(DL-0.02)	mg/l

*BDL(Below Detection Limit),**DL(Detection Limit)

End of Report


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Figure. No. 7. Plan Showing Surface Water Quality Monitoring Location Map



Location Code: - 1 Mahanadi River Up Stream
2 Mahanadi River down Stream



Test Report

Sample Number : REGLW/03/21-03
Name & Address of the Party : M/s Raigarh Energy Generation Ltd.
Village Chhote Bhandar, Post Office Bade Bandar
Tehsil Pussore, Dist-Raigarh-496100 (Chhattisgarh)
Name of the Project :
Sample Description : SURFACE WATER
Location : Mahanadi (Down Stream)
Sample Collected by : Vardan EnviroLab Team
Parameter Required : As Per Work Order
Sampling and Analysis Protocol : IS 2296

Report No. : VEL/W/2103300017/A
Format No : 7.8 F-01
Party Reference No : NIL
Report Date : 05/04/2021
Period of Analysis : 30/03/2021-05/04/2021
Receipt Date : 30/03/2021
Sampling Date : 24/03/2021
Sampling Quantity : 3 Ltr.
Sampling Type : Grab
Preservation : Suitable Preservation

S.No.	Test Parameters	Test Method	Results	Units
1	pH value	IS 3025 (P-11): 1983 Reaff. 2017	7.51	--
2	Turbidity	IS 3025 (Part 10): 1984, Reaff: 2017, (Nephelometric Method)	2.0	NTU
3	Total Dissolved Solids	IS 3025 (P-16): 1984 Reaff 2017	338.8	mg/l
4	Chloride (as Cl)	IS: 3025 (Part 32): 1988, Reaff. 2019	55.51	mg/l
5	Sulphate as (SO ₄)	IS: 3025 (Part 24): 1986, Reaff. 2019 Turbidity Method	20.56	mg/l
6	Total Alkalinity (as CaCO ₃)	IS: 3025 (Part 23): 1986, Reaff. 2019	123.22	mg/l
7	Total Hardness (CaCO ₃)	IS: 3025 (Part 21): 2009, Reaff. 2019	133.4	mg/l
8	Calcium (as Ca)	IS: 3025 (Part 40): 1991 Reaff. 2019 (EDTA method)	47.94	mg/l
9	Magnesium	IS: 3025 (Part 46): 1994, Reaff. 2019 (EDTA method)	3.35	mg/l
10	Fluoride (as F)	APHA 23rd Edition 2017, 4500FD	0.37	mg/l
11	Nitrate (as NO ₃)	IS: 3025 (Part 34): 1988, Reaff. 2019 (Chromotropic Method)	7.25	mg/l
12	Phenolic compounds	APHA 23rd Edition 2017, 5530C	*BDL(DL-0.001)	mg/l
13	Iron	IS:3025(P-53):2003,RA.2019:2003	0.26	mg/l
14	Zinc as (Zn)	APHA (23rd edition), 3030D,3113B	*BDL(DL-0.2)	mg/l
15	Copper (Cu)	APHA (23rd edition), 3111B	*BDL(DL-0.02)	mg/l
16	Manganese as Mn	APHA3111B	*BDL(DL-0.05)	mg/l
17	Arsenic as As	APHA (23rd edition), 3030D,3114C, 2017	*BDL(DL-0.005)	mg/l
18	Boron	APHA (23rd edition) 4500B, 2017	*BDL(DL-0.2)	mg/l
19	Selenium as Se	APHA (23rd edition),3114C, 2017	*BDL(DL-0.005)	mg/l



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TC-8652

Test Report


Sample Number : REGL/W/03/21-03

Report No. : VEL/W/2103300017/A

*BDL(Below Detection Limit),**DL(Detection Limit)

End of Report


(Checked By)

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G M LAB OPERATION



Test Report

Sample Number : REGLW/03/21-03
Name & Address of the Party : M/s Raigarh Energy Generation Ltd.
Village Chhote Bhandar, Post Office Bade Bandar
Tehsil Pussore, Dist-Raigarh-496100 (Chhattisgarh)

Name of the Project :

Sample Description : SURFACE WATER
Location : Mahanadi (Down Stream)
Sample Collected by : Vardan EnviroLab Team
Parameter Required : As Per Work Order
Sampling and Analysis Protocol : IS 2296

Report No. : VELW/2103300017/B
Format No : 7.8 F-01
Party Reference No : NIL
Report Date : 05/04/2021
Period of Analysis : 30/03/2021-05/04/2021
Receipt Date : 30/03/2021
Sampling Date : 24/03/2021
Sampling Quantity : 3 Ltr.
Sampling Type : Grab
Preservation : Suitable Preservation

S.No.	Test Parameters	Test Method	Results	Units
1	Colour	IS 3025: 1987 (P-4) Reaff.2017	*BDL(DL-1.0)	Hazen
2	Odour	IS 3025 (P-5) : 2018	Agreeable	--
3	Taste	IS 3025 (P-8):1984 Reaff. 2017	Agreeable	---
4	Anionic Surface active agents (as MBAS)	APHA 23rd Edition 2017, 5540C	*BDL(DL-0.05)	mg/l
5	Fecal Coliform	IS-1622:2009	46.0	MPN/100ml
6	Total Coliform	IS-1622:2009	63.0	MPN/100ml
7	Residual Free Chlorine	IS:3025(P-26):1986,RA:2019:1986	*BDL(DL-0.2)	mg/l
8	E Coll	IS 1622, 1981 (Ref. 2003)	Present	MPN/100ml
9	Cyanide as CN	APHA 4500 CN -D	*BDL(DL-0.05)	mg/l
10	Aluminium as Al	IS 3025 (P-55) 2003, RA 2019	*BDL(DL-0.03)	mg/l
11	Mineral Oil	IS 3025 (P-39)	*BDL(DL-0.05)	mg/l
12	Ammonia	IS-3025(P-34)-1988,Reaff:2019	3.39	mg/l
13	Sulphide	IS3025(P-29):1986 Reaff 2019	*BDL(DL-0.1)	mg/l
14	Barium (Ba)	APHA 3111B	*BDL(DL-0.02)	mg/l

*BDL(Below Detection Limit),**DL(Detection Limit)

End of Report


(Checked By)

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Test Report

Sample Number : REGL/W/03/21-04
 Name & Address of the Party : M/s Raigarh Energy Generation ltd.
 Village Chhote Bhandar, Post Office Bade Bandar
 Tehsil Pussore, Dist-Raigarh-496100 (Chhattisgarh)

Name of the Project :

Sample Description : SURFACE WATER
 Location : Mahanadi (Up Stream)
 Sample Collected by : Vardan EnviroLab Team
 Parameter Required : As Per Work Order
 Sampling and Analysis Protocol : IS 2296

Report No. : VEL/W/2103300018/A
 Format No : 7.8 F-01
 Party Reference No : NIL
 Report Date : 05/04/2021
 Period of Analysis : 30/03/2021-05/04/2021
 Receipt Date : 30/03/2021
 Sampling Date : 24/03/2021
 Sampling Quantity : 3 Ltr.
 Sampling Type : Grab
 Preservation : Suitable Preservation

S.No.	Test Parameters	Test Method	Results	Units
1	pH value	IS 3025 (P-11): 1983 Reaff. 2017	7.21	--
2	Turbidity	IS 3025 (Part 10): 1984, Reaff: 2017, (Nephelometric Method)	*BDL(DL-1.0)	NTU
3	Total Dissolved Solids	IS 3025 (P-16): 1984 Reaff 2017	307.70	mg/l
4	Chloride (as Cl)	IS: 3025 (Part 32): 1988, Reaff. 2019	59.34	mg/l
5	Sulphate as (SO4)	IS: 3025 (Part 24): 1986, Reaff. 2019 Turbidity Method	18.15	mg/l
6	Total Alkalinity (as CaCO3)	IS: 3025 (Part 23): 1986, Reaff. 2019	129.28	mg/l
7	Total Hardness (CaCO3)	IS: 3025 (Part 21): 2009, Reaff. 2019	119.60	mg/l
8	Calcium (as Ca)	IS: 3025 (Part 40): 1991 Reaff. 2019 (EDTA method)	40.56	mg/l
9	Magnesium	IS: 3025 (Part 46): 1994, Reaff. 2019 (EDTA method)	4.47	mg/l
10	Fluoride (as F)	APHA 23rd Edition 2017, 4500FD	0.26	mg/l
11	Nitrate (as NO3)	IS: 3025 (Part 34): 1988, Reaff. 2019 (Chromotropic Method)	5.84	mg/l
12	Phenolic compounds	APHA 23rd Edition 2017, 5530C	*BDL(DL-0.001)	mg/l
13	Iron	IS:3025(P-53):2003,RA.2019:2003	0.23	mg/l
14	Zinc as (Zn)	APHA (23rd edition), 3030D,3113B	*BDL(DL-0.2)	mg/l
15	Copper (Cu)	APHA (23rd edition), 3111B	*BDL(DL-0.02)	mg/l
16	Manganese as Mn	APHA3111B	*BDL(DL-0.05)	mg/l
17	Arsenic as As	APHA (23rd edition), 3030D,3114C, 2017	*BDL(DL-0.005)	mg/l
18	Boron	APHA (23rd edition) 4500B, 2017	*BDL(DL-0.2)	mg/l
19	Selenium as Se	APHA (23rd edition),3114C, 2017	*BDL(DL-0.005)	mg/l


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Note: Terms & conditions refer on backside of test report.



Vardan EnviroLab

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TC-6652

Test Report

Sample Number : REGL/W/03/21-04

Report No. : VELW/2103300018/A

*BDL(Below Detection Limit), **DL(Detection Limit)

End of Report

Shivani

(Checked By)

RAJ KUMAR YADAV

(Authorized Signatory)

G M LAB OPERATION



Test Report

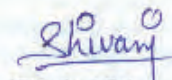
Sample Number : REGL/W/03/21-04
Name & Address of the Party : M/s Raigarh Energy Generation Ltd.
Village Chhote Bhandar, Post Office Bade Bandar
Tehsil Pussore, Dist-Raigarh-496100 (Chhattisgarh)
Name of the Project :
Sample Description : SURFACE WATER
Location : Mahanadi (Up Stream)
Sample Collected by : Vardan EnviroLab Team
Parameter Required : As Per Work Order
Sampling and Analysis Protocol : IS 2296


Report No. : VEL/W/2103300018/B
Format No : 7.8 F-01
Party Reference No : NIL
Report Date : 05/04/2021
Period of Analysis : 30/03/2021-05/04/2021
Receipt Date : 30/03/2021
Sampling Date : 24/03/2021
Sampling Quantity : 3 Ltr.
Sampling Type : Grab
Preservation : Suitable Preservation

S.No.	Test Parameters	Test Method	Results	Units
1	Colour	IS 3025: 1987 (P-4) Reaff.2017	*BDL(DL-1.0)	Hazen
2	Odour	IS 3025 (P-5) : 2018	Agreeable	--
3	Taste	IS 3025 (P-8):1984 Reaff. 2017	Agreeable	--
4	Anionic Surface active agents (as MBAS)	APHA 23rd Edition 2017, 5540C	*BDL(DL-0.05)	mg/l
5	Fecal Coliform	IS-1622:2009	17.0	MPN/100ml
6	Total Coliform	IS-1622:2009	27.0	MPN/100ml
7	Residual Free Chlorine	IS:3025(P-26):1986,RA:2019:1986	*BDL(DL-0.2)	mg/l
8	E Coll	IS 1622, 1981 (Ref. 2003)	Present	MPN/100ml
9	Cyanide as CN	APHA 4500 CN -D	*BDL(DL-0.05)	mg/l
10	Aluminium as Al	IS 3025 (P-55) 2003, RA 2019	*BDL(DL-0.03)	mg/l
11	Mineral Oil	IS 3025 (P-39)	*BDL(DL-0.05)	mg/l
12	Ammonia	IS-3025(P-34)-1988,Reaff:2019	2.83	mg/l
13	Sulphide	IS3025(P-29):1986 Reaff 2019	*BDL(DL-0.1)	mg/l
14	Barium (Ba)	APHA 3111B	*BDL(DL-0.02)	mg/l

*BDL(Below Detection Limit),**DL(Detection Limit)

End of Report


(Checked By)


RAJ KUMAR YADAV
(Authorized Signatory)
G M LAB OPERATION

4.5 Soil Quality Analysis



Figure No. 8. Plan Showing Soil Sample Monitoring Location Map

Location Code: -

- S1- PalsadaVillage
- S2- Kathli Village
- S3- Chote Bhandar Village
- S4- Bade Bhandar Village
- S5- Nursery



Test Report

Sample Number : VEL/S/12/20 -01
 Name & Address of the Party : M/s Raigarh Energy Generation Ltd.
 Village Chhote Bhandar, Post Office Bade Bandar
 Tehsil Pussore, Dist-Raigarh-496100 (Chhattisgarh)

Sample Description : SOIL
 Location : Village - Bade Bhandar
 Sample Collected by : Vardan EnviroLab Team
 Parameter Required : As Per Work Order
 Sampling and Analysis Protocol : IS 2720, APHA & USDA

Report No. : VEL/S0/2103300009/A
 Format No : 7.8 F-01
 Party Reference No : NIL
 Report Date : 05/04/2021
 Period of Analysis : 30/03/2021-05/04/2021
 Receipt Date : 30/03/2021
 Sampling Date : 24/03/2021
 Sampling Quantity : 3 Kg.
 Sampling Type : Composite
 Packing Status : Temp. Sealed

S.No.	Parameters	Test Method	Results	Units
1	pH (at 25°C)	IS : 2720 (P- 26): 1987,RA: 2016	7.50	-
2	Electrical Conductivity	IS 14767: 2000 RA:2016	0.328	mS/cm
3	Bulk density	USDA:1954 (Page-121) RA: 2014	1.23	gm/cc
4	Chloride	USDA:1954 Method 13 (Page-98) RA: 2010	95.59	mg/kg
5	Calcium (as Ca)	Lab SOP no. VEL/STP/01: 2018	331.86	mg/kg
6	Sodium (as Na)	USDA:1954 Method 10A (Page-96) RA: 2010	91.99	mg/kg
7	Potassium (as K)	Lab SOP no. VEL/STP/01: 2018	94.53	kg/hect.
8	Organic Matter	IS 2720 (P-22) 1972 RA:2015	0.71	%
9	Magnesium (as Mg)	Lab SOP no. VEL/STP/01: 2018	44.71	mg/kg
10	Available Nitrogen (as N)	IS : 14684,1999 RA: 2015	246.56	kg. /hect.
11	Available Phosphorus	Lab SOP no. VEL/STP/01: 2018	34.62	kg. /hect.
12	Total Zinc (as Zn)	USEPA 3050 B: 1996	20.95	mg/kg
13	Total Manganese (as Mn)	USEPA 3050	129.67	mg/kg
14	Total Lead (as Pb)	USEPA 3050 B: 1996	3.49	mg/kg
15	Total Cadmium (as Cd)	USEPA 3050	0.49	mg/kg
16	Total Copper (as Cu)	USEPA 3050 B: 1996	11.47	mg/kg

End of Report

TEJAN KUMAR
 (Checked By)

RAJ KUMAR YADAV
 (Authorized Signatory)

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Vardan EnviroLab



Laboratory: Plot No. 24 & 25, Narayan Vihar, B-Block, Jaipur (Rajasthan) 302020
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Test Report

Sample Number : VEL/S/12/20 -01
 Name & Address of the Party : M/s Raigarh Energy Generation Ltd.
 Village Chhote Bhandar, Post Office Bade Bhandar
 Tehsil Pussore, Dist-Raigarh-496100 (Chhattisgarh)

Sample Description : SOIL
 Location : Village - Bade Bhandar
 Sample Collected by : Vardan EnviroLab Team
 Parameter Required : As Per Work Order
 Sampling and Analysis Protocol : IS 2720, APHA & USDA

Report No. : VEL/S0/2103300009/B
 Format No : 7.8 F-01
 Party Reference No : NIL
 Report Date : 05/04/2021
 Period of Analysis : 30/03/2021-05/04/2021
 Receipt Date : 30/03/2021
 Sampling Date : 24/03/2021
 Sampling Quantity : 3 Kg
 Sampling Type : Composite
 Packing Status : Temp. Sealed

S.No.	Parameters	Test Method	Results	Units
1	Colour	USDA:1954-Reaffirmed,2010	Yellowish Red	-
2	Water holding capacity	USDA:1954-Reaffirmed,2010	32.5	%
3	Total Chromium (as Cr)	USEPA 3050 B:1996	0.50	mg/kg
4	Soil Texture	IS:2720 (P-4) RA:2006	Silty Loam	--

End of Report

VINODRA KUMAR
 (Checked By)
 TECHNICAL MANAGER

RAJ KUMAR YADAV
 (Authorized Signatory)
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Test Report

Sample Number : VEL/S/12/2021-02
Name & Address of the Party : M/s Raigarh Energy Generation Ltd.
Village Chhote Bhandar, Post Office Bade Bandar
Tehsil Pussore, Dist-Raigarh-496100 (Chhattisgarh)

Sample Description : SOIL
Location : Village - Palsada
Sample Collected by : Vardan EnviroLab Team
Parameter Required : As Per Work Order
Sampling and Analysis Protocol : IS 2720, APHA & USDA

Report No. : VEL/S0/2103300010/A
Format No : 7.8 F-01
Party Reference No : NIL
Report Date : 05/04/2021
Period of Analysis : 30/03/2021-05/04/2021
Receipt Date : 30/03/2021
Sampling Date : 24/03/2021
Sampling Quantity : 3 Kg
Sampling Type : Composite
Packing Status : Temp. Sealed

S.No.	Parameters	Test Method	Results	Units
1	pH (at 25°C)	IS : 2720 (P- 26): 1987,RA: 2016	7.63	-
2	Electrical Conductivity	IS 14767: 2000 RA:2016	0.339	mS/cm
3	Bulk density	USDA:1954 (Page-121) RA: 2014	1.27	gm/cc
4	Chloride	USDA:1954 Method 13 (Page-98) RA: 2010	93.65	mg/kg
5	Calcium (as Ca)	Lab SOP no. VEL/STP/01: 2018	322.64	mg/kg
6	Sodium (as Na)	USDA:1954 Method 10A (Page-96) RA: 2010	87.91	mg/kg
7	Potassium (as K)	Lab SOP no. VEL/STP/01: 2018	107.63	kg/hect.
8	Organic Matter	IS 2720 (P-22) 1972 RA:2015	0.64	%
9	Magnesium (as Mg)	Lab SOP no. VEL/STP/01: 2018	83.84	mg/kg
10	Available Nitrogen (as N)	IS : 14684,1999 RA: 2015	202.30	kg. /hect.
11	Available Phosphorus	Lab SOP no. VEL/STP/01: 2018	30.49	kg. /hect.
12	Total Zinc (as Zn)	USEPA 3050 B: 1996	13.99	mg/kg
13	Total Manganese (as Mn)	USEPA 3050	124.89	mg/kg
14	Total Lead (as Pb)	USEPA 3050 B: 1996	3.49	mg/kg
15	Total Cadmium (as Cd)	USEPA 3050	0.99	mg/kg
16	Total Copper (as Cu)	USEPA 3050 B: 1996	14.49	mg/kg

End of Report

VIJAY KUMAR
(Checked By)
TECHNICAL MANAGER

RAJ KUMAR YADAV
(Authorized Signatory)
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Vardan EnviroLab



Laboratory: Plot No. 24 & 25, Narayan Vihar, B-Block, Jaipur (Rajasthan) 302020
MoEF & CC Recognized | ISO 9001 | ISO 45001

Test Report

Sample Number : VEL/S/12/2021-02
 Name & Address of the Party : M/s Raigarh Energy Generation Ltd.
 Village Chhote Bhandar, Post Office Bade Bandar
 Tehsil Pussore, Dist-Raigarh-496100 (Chhattisgarh)

Sample Description : SOIL
 Location : Village - Palsada
 Sample Collected by : Vardan EnviroLab Team
 Parameter Required : As Per Work Order
 Sampling and Analysis Protocol : IS 2720, APHA & USDA

Report No. : VEL/S0/2103300010/B
 Format No : 7.8 F-01
 Party Reference No : NIL
 Report Date : 05/04/2021
 Period of Analysis : 30/03/2021-05/04/2021
 Receipt Date : 30/03/2021
 Sampling Date : 24/03/2021
 Sampling Quantity : 3 Kg.
 Sampling Type : Composite
 Packing Status : Temp. Sealed

S.No.	Parameters	Test Method	Results	Units
1	Colour	USDA:1954-Reaffirmed,2010	Yellowish Red	-
2	Water holding capacity	USDA:1954-Reaffirmed,2010	33.96	%
3	Total Chromium (as Cr)	USEPA 3050 B:1996	1.99	mg/kg
4	Soil Texture	IS:2720 (P-4) RA:2006	Silty Loam	-

End of Report

V. **INDRA KUMAR**
 (Checked By) **TECHNICAL MANAGER**

RAJ KUMAR YADAV
 (Authorized Signatory)
G.M. LAB OPERATION



Test Report

Sample Number : VEL/S/03/2021-03
Name & Address of the Party : M/s Raigarh Energy Generation Ltd.
Village Chhote Bhandar, Post Office Bade Bandar
Tehsil Pussore, Dist-Raigarh-496100 (Chhattisgarh)

Sample Description : SOIL
Location : Village - Kathli
Sample Collected by : Vardan EnviroLab Team
Parameter Required : As Per Work Order
Sampling and Analysis Protocol : IS 2720, APHA & USDA

Report No. : VEL/S0/2103300011/A
Format No : 7.8 F-01
Party Reference No : NIL
Report Date : 05/04/2021
Period of Analysis : 30/03/2021-05/04/2021
Receipt Date : 30/03/2021
Sampling Date : 24/03/2021
Sampling Quantity : 3 Kg.
Sampling Type : Composite
Packing Status : Temp. Sealed

S.No.	Parameters	Test Method	Results	Units
1	pH (at 25°C)	IS : 2720 (P- 26): 1987,RA: 2016	7.51	-
2	Electrical Conductivity	IS 14767: 2000 RA:2016	0.341	mS/cm
3	Bulk density	USDA:1954 (Page-121) RA: 2014	1.28	gm/cc
4	Chloride	USDA:1954 Method 13 (Page-98) RA: 2010	94.75	mg/kg
5	Calcium (as Ca)	Lab SOP no. VEL/STP/01: 2018	350.29	mg/kg
6	Sodium (as Na)	USDA:1954 Method 10A (Page-96) RA: 2010	97.48	mg/kg
7	Potassium (as K)	Lab SOP no. VEL/STP/01: 2018	132.14	kg/hect.
8	Organic Matter	IS 2720 (P-22) 1972 RA:2015	0.64	%
9	Magnesium (as Mg)	Lab SOP no. VEL/STP/01: 2018	89.43	mg/kg
10	Available Nitrogen (as N)	IS : 14684,1999 RA: 2015	234.18	kg. /hect.
11	Available Phosphorus	Lab SOP no. VEL/STP/01: 2018	47.56	kg. /hect.
12	Total Zinc (as Zn)	USEPA 3050 B: 1996	15.49	mg/kg
13	Total Manganese (as Mn)	USEPA 3050	144.89	mg/kg
14	Total Lead (as Pb)	USEPA 3050 B: 1996	2.49	mg/kg
15	Total Cadmium (as Cd)	USEPA 3050	0.49	mg/kg
16	Total Copper (as Cu)	USEPA 3050 B: 1996	10.49	mg/kg

End of Report

VIHENDRA KUMAR
(Checked By)
TECHNICAL MANAGER

RAJ KUMAR YADAV
(Authorized Signatory)
G M LAB OPERATION



Vardan EnviroLab



Laboratory: Plot No. 24 & 25, Narayan Vihar, B-Block, Jaipur (Rajasthan) 302020
MoEF & CC Recognized | ISO 9001 | ISO 45001

Test Report

Sample Number : VEL/S/03/2021-03
 Name & Address of the Party : M/s Raigarh Energy Generation Ltd.
 Village Chhote Bhandar, Post Office Bade Bandar
 Tehsil Pussore, Dist-Raigarh-496100 (Chhattisgarh)

Sample Description : SOIL
 Location : Village - Kathli
 Sample Collected by : Vardan EnviroLab Team
 Parameter Required : As Per Work Order
 Sampling and Analysis Protocol : IS 2720, APHA & USDA

Report No. : VEL/S0/2103300011/B
 Format No : 7.8 F-01
 Party Reference No : NIL
 Report Date : 05/04/2021
 Period of Analysis : 30/03/2021-05/04/2021
 Receipt Date : 30/03/2021
 Sampling Date : 24/03/2021
 Sampling Quantity : 3 Kg.
 Sampling Type : Composite
 Packing Status : Temp. Sealed

S.No.	Parameters	Test Method	Results	Units
1	Colour	USDA:1954-Reaffirmed,2010	Yellowish Red	-
2	Water holding capacity	USDA:1954-Reaffirmed,2010	34.57	%
3	Total Chromium (as Cr)	USEPA 3050 B:1996	1.49	mg/kg
4	Soil Texture	IS:2720 (P-4) RA:2006	Silty Loam	--

End of Report

V. INDRA KUMAR
 (Checked By)
 TECHNICAL MANAGER

RAJ KUMAR YADAV
 (Authorized Signatory)
 G.M. LAB OPERATION



Test Report

Sample Number : VEL/S/03/2021-04
 Name & Address of the Party : M/s Raigarh Energy Generation Ltd.
 Village Chhote Bhandar, Post Office Bade Bandar
 Tehsil Pussore, Dist-Raigarh-496100 (Chhattisgarh)

Sample Description : SOIL
 Location : Village - Chote Bhandar
 Sample Collected by : Vardan EnviroLab Team
 Parameter Required : As Per Work Order
 Sampling and Analysis Protocol : IS 2720, APHA & USDA

Report No. : VEL/S0/2103300012/A
 Format No : 7.8 F-01
 Party Reference No : NIL
 Report Date : 05/04/2021
 Period of Analysis : 30/03/2021-05/04/2021
 Receipt Date : 30/03/2021
 Sampling Date : 23/03/2021
 Sampling Quantity : 3 Kg
 Sampling Type : Composite
 Packing Status : Temp. Sealed

S.No.	Parameters	Test Method	Results	Units
1	pH (at 25°C)	IS : 2720 (P- 26): 1987,RA: 2016	7.78	-
2	Electrical Conductivity	IS 14767: 2000 RA:2016	0.349	mS/cm
3	Bulk density	USDA:1954 (Page-121) RA: 2014	1.29	gm/cc
4	Chloride	USDA:1954 Method 13 (Page-98) RA: 2010	76.51	mg/kg
5	Calcium (as Ca)	Lab SOP no. VEL/STP/01: 2018	331.86	mg/kg
6	Sodium (as Na)	USDA:1954 Method 10A (Page-96) RA: 2010	81.19	mg/kg
7	Potassium (as K)	Lab SOP no. VEL/STP/01: 2018	92.28	kg/hect.
8	Organic Matter	IS 2720 (P-22) 1972 RA:2015	0.61	%
9	Magnesium (as Mg)	Lab SOP no. VEL/STP/01: 2018	55.89	mg/kg
10	Available Nitrogen (as N)	IS : 14684,1999 RA: 2015	227.87	kg. /hect.
11	Available Phosphorus	Lab SOP no. VEL/STP/01: 2018	38.49	kg. /hect.
12	Total Zinc (as Zn)	USEPA 3050 B: 1996	18.98	mg/kg
13	Total Manganese (as Mn)	USEPA 3050	115.93	mg/kg
14	Total Lead (as Pb)	USEPA 3050 B: 1996	4.99	mg/kg
15	Total Cadmium (as Cd)	USEPA 3050	0.99	mg/kg
16	Total Copper (as Cu)	USEPA 3050 B: 1996	17.99	mg/kg

End of Report

VIJENDRA KUMAR
 (Checked By)
 TECHNICAL MANAGER

RAJ KUMAR YADAV
 (Authorized Signatory)
 G M LAB OPERATION



Test Report

Sample Number : VEL/S/03/2021-04
 Name & Address of the Party : M/s Raigarh Energy Generation Ltd.
 Village Chhote Bhandar, Post Office Bade Bandar
 Tehsil Pussore, Dist-Raigarh-496100 (Chhattisgarh)

Sample Description : SOIL
 Location : Village - Chote Bhandar
 Sample Collected by : Vardan EnviroLab Team
 Parameter Required : As Per Work Order
 Sampling and Analysis Protocol : IS 2720, APHA & USDA

Report No. : VEL/S0/2103300012/B
 Format No : 7.8 F-01
 Party Reference No : NIL
 Report Date : 05/04/2021
 Period of Analysis : 30/03/2021-05/04/2021
 Receipt Date : 30/03/2021
 Sampling Date : 23/03/2021
 Sampling Quantity : 3 Kg.
 Sampling Type : Composite
 Packing Status : Temp. Sealed

S.No.	Parameters	Test Method	Results	Units
1	Colour	USDA:1954-Reaffirmed,2010	Yellowish Red	-
2	Water holding capacity	USDA:1954-Reaffirmed,2010	32.99	%
3	Total Chromium (as Cr)	USEPA 3050 B:1996	1.99	mg/kg
4	Soil Texture	IS:2720 (P-4) RA:2006	Silty Loam	--

End of Report

VIENDRA KUMAR

 (Checked By)
 TECHNICAL MANAGER

RAJ KUMAR YADAV

 (Authorized Signatory)
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Test Report

Sample Number : VEL/S/03/2021-05
Name & Address of the Party : M/s Raigarh Energy Generation Ltd.
 Village Chhote Bhandar, Post Office Bade Bandar
 Tehsil Pussore, Dist-Raigarh-496100 (Chhattisgarh)

Sample Description : SOIL
Location : Nursery (Near Mine Area)
Sample Collected by : Vardan EnviroLab Team
Parameter Required : As Per Work Order
Sampling and Analysis Protocol : IS 2720, APHA & USDA

Report No. : VEL/S0/2103300013/A
Format No : 7.8 F-01
Party Reference No : NIL
Report Date : 05/04/2021
Period of Analysis : 30/03/2021-05/04/2021
Receipt Date : 30/03/2021
Sampling Date : 23/03/2021
Sampling Quantity : 3 Kg.
Sampling Type : Composite
Packing Status : Temp. Sealed

S.No.	Parameters	Test Method	Results	Units
1	pH (at 25°C)	IS : 2720 (P- 26): 1987,RA: 2016	7.43	-
2	Electrical Conductivity	IS 14767: 2000 RA:2016	0.321	mS/cm
3	Bulk density	USDA:1954 (Page-121) RA: 2014	1.29	gm/cc
4	Chloride	USDA:1954 Method 13 (Page-98) RA: 2010	95.70	mg/kg
5	Calcium (as Ca)	Lab SOP no. VEL/STP/01: 2018	322.64	mg/kg
6	Sodium (as Na)	USDA:1954 Method 10A (Page-96) RA: 2010	118.98	mg/kg
7	Potassium (as K)	Lab SOP no. VEL/STP/01: 2018	85.55	kg/hect.
8	Organic Matter	IS 2720 (P-22) 1972 RA:2015	0.55	%
9	Magnesium (as Mg)	Lab SOP no. VEL/STP/01: 2018	22.36	mg/kg
10	Available Nitrogen (as N)	IS : 14684,1999 RA: 2015	215.21	kg. /hect.
11	Available Phosphorus	Lab SOP no. VEL/STP/01: 2018	38.49	kg. /hect.
12	Total Zinc (as Zn)	USEPA 3050 B: 1996	17.48	mg/kg
13	Total Manganese (as Mn)	USEPA 3050	139.36	mg/kg
14	Total Lead (as Pb)	USEPA 3050 B: 1996	4.49	mg/kg
15	Total Cadmium (as Cd)	USEPA 3050	0.99	mg/kg
16	Total Copper (as Cu)	USEPA 3050 B: 1996	13.98	mg/kg

End of Report

VIHENDRA KUMAR
 (Checked By)
 TECHNICAL MANAGER

RAJ KUMAR YADAV
 (Authorized Signatory)
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Vardan EnviroLab



Laboratory: Plot No. 24 & 25, Narayan Vihar, B-Block, Jaipur (Rajasthan) 302020
MoEF & CC Recognized | ISO 9001 | ISO 45001

Test Report

Sample Number : VEL/S/03/2021-05
Name & Address of the Party : M/s Raigarh Energy Generation Ltd.
 Village Chhote Bhandar, Post Office Bade Bandar
 Tehsil Pussore, Dist-Raigarh-496100 (Chhattisgarh)

Sample Description : SOIL
Location : Nursery (Near Mine Area)
Sample Collected by : Vardan EnviroLab Team
Parameter Required : As Per Work Order
Sampling and Analysis Protocol : IS 2720, APHA & USDA

Report No. : VEL/S0/2103300013/B
Format No : 7.8 F-01
Party Reference No : NIL
Report Date : 05/04/2021
Period of Analysis : 30/03/2021-05/04/2021
Receipt Date : 30/03/2021
Sampling Date : 23/03/2021
Sampling Quantity : 3 Kg.
Sampling Type : Composite
Packing Status : Temp. Sealed

S.No.	Parameters	Test Method	Results	Units
1	Colour	USDA:1954-Reaffirmed,2010	Yellowish Red	-
2	Water holding capacity	USDA:1954-Reaffirmed,2010	30.97	%
3	Total Chromium (as Cr)	USEPA 3050 B:1996	1.49	mg/kg
4	Soil Texture	IS:2720 (P-4) RA:2006	Silty Loam	--

End of Report

RAJ KUMAR YADAV

✓ **INDRA KUMAR**
(Checked By)

G M LAB OPERATION
(Authorized Signatory)

TECHNICAL MANAGER

4.6 Effluent Sample Analysis Report

Locations

1. STP Outlet
2. ETP Outlet



Test Report

Sample Number : REGL/WW/03/21-07
Name & Address of the Party : M/s Raigarh Energy Generation Ltd.
Village Chhote Bhandar, Post Office Bade Bandar
Tehsil Pussore, Dist-Raigarh-496100 (Chhattisgarh)

Report No. : VEL/WW/2103300012/A
Format No : 7.8 F-01
Party Reference No : NIL
Report Date : 05/04/2021
Period of Analysis : 30/03/2021-05/04/2021
Receipt Date : 30/03/2021
Sampling Date : 25/03/2021
Sampling Quantity : 3 Ltr.
Sampling Type : Grab
Packing Status : Temp. Sealed


Sample Description : Waste Water
Location : STP Outlet
Sample Collected by : Vardan EnviroLab Team
Parameter Required : As Per Work Order
Sampling and Analysis Protocol : IS 3025

S.No.	Test Parameters	Test Method	Result	Unit	Prescribed Limit
1	pH	IS 3025 (P-11): 1983 RA2017	7.89	-	5.5 - 9.0
2	Total Suspended Solids	IS: 3025 (Part 17): 1984, RA2017	21.1	mg/l	100.0
3	Oil & Grease	IS 3025(P-39):1991 RA 2019	1.70	mg/l	10.0
4	BOD (3 days @ 27°C)	IS: 3025 (Part-44): 1993, RA: 2019	24.60	mg/l	30.0
5	COD	IS : 3025 (Part 58) : 2006 RA: 2017	116.16	mg/l	250.0

*BDL-Below Detection Limit, **DL-Detection Limit

End of Report


(Checked By)


RAJ KUMAR YADAV
(Authorized Signatory)
G M LAB OPERATION



TC-6652

Test Report

Sample Number : REGL/WW/03/21-IV
Name & Address of the Party : M/s Raigarh Energy Generation Ltd.
Village Chhote Bhandar, Post Office Bade Bandar
Tehsil Pussore, Dist-Raigarh-496100 (Chhattisgarh)

Report No. : VEL/WW/2103300014/A
Format No : 7.8 F-01
Party Reference No : NIL
Report Date : 05/04/2021
Period of Analysis : 30/03/2021-05/04/2021
Receipt Date : 30/03/2021
Sampling Date : 25/03/2021
Sampling Quantity : 3 Ltr.
Sampling Type : Grab
Packing Status : Temp. Sealed

Sample Description : Waste Water
Location : ETP Outlet
Sample Collected by : Vardan EnviroLab Team
Parameter Required : As Per Work Order
Sampling and Analysis Protocol : IS 3025

S.No.	Test Parameters	Test Method	Result	Unit	Prescribed Limit
1	pH	IS 3025 (P-11): 1983 RA2017	7.57	-	5.5 - 9.0
2	Total Suspended Solids	IS: 3025 (Part 17): 1984, RA2017	18.5	mg/l	100.0
3	Oil & Grease	IS 3025(P-39):1991 RA 2019	0.8	mg/l	10.0
4	BOD (3 days @ 27°C)	IS: 3025 (Part-44): 1993, RA: 2019	22.50	mg/l	30.0
5	COD	IS : 3025 (Part 58) : 2006 RA: 2017	96.80	mg/l	250.0

*BDL(Below Detection Limit),**DL(Detection Limit)

End of Report


(Checked By)

RAJ KUMAR YADAV
(Authorized Signatory)
G.M LAB OPERATION



Test Report

Sample Number : VEL/S/01
Name & Address of the Party : M/s Raigarh Energy Generation Ltd.
Village Chhote Bhandar, Post Office Bade Bandar
Tehsil Pussore, Dist-Raigarh-496100 (Chhattisgarh)

Report No. : VEL/S/2103300005/A
Format No : 7.8 F-01
Party Reference No : NIL
Report Date : 05/04/2021
Period of Analysis : 30/03/2021-05/04/2021
Receipt Date : 30/03/2021

Sample Description : Stack Emission Monitoring

General Information

Sampling Location : TPP
Sample Collected by : Vardan EnviroLab Team
Date of Sampling : 25/03/2021
Sampling duration (Minutes) : 32 Min.(12.30 to 13.02 Hrs.)
Stack attached to : TPP
Make of stack : Iron
Diameter of stack(m) : 7.5 m
Height of stack(m) : 275 m
Instrument calibration status : Calibrated
Meteorological Condition : Clear Sky
Ambient Temperature - Ta (°C) : 36
Temperature of Stack Gases - Ts (°C) : 142
Velocity of Stack Gases (m/sec.) : 22.44
Flow rate of PM (LPM) : 43
Flow rate of Gas (LPM) : 2.0
Sampling condition : Ok
Protocol used : IS 11255 & EPA

S.No.	Parameters	Test Method	Results	Units	Limits
1	Particulate Matter (as PM)	IS: 11255 (Part1) : 1985, RA 2014	47.83	mg/Nm3	50.0
2	Sulphur Dioxide (as SO2)	IS: 11255(P- 2): 1985, RA.2014	699.01	mg/Nm3	600.0
3	Oxide of Nitrogen as NO2	IS-11255 P-7, RA 2017	274.58	mg/Nm3	300.0

BDL** (Below Detection Limit) DL Detection Limit

End of Report

VIHENDRA KUMAR

(Checked By)

TECHNICAL MANAGER

RAJ KUMAR YADAV

(Authorized Signatory)

G.M. LAB OPERATION



Test Report

Sample Number : VEL/S/01

Name & Address of the Party : M/s Raigarh Energy Generation Ltd.
Village Chhote Bhandar, Post Office Bade Bandar
Tehsil Pussore, Dist-Raigarh-496100 (Chhattisgarh)

Report No. : VEL/S/2103300005/B

Format No : 7.8 F-01

Party Reference No : NIL

Report Date : 05/04/2021

Period of Analysis : 30/03/2021-05/04/2021

Receipt Date : 30/03/2021

Sample Description : Stack Emission Monitoring

General Information

Sampling Location : TPP
Sample Collected by : Vardan EnviroLab Team
Date of Sampling : 25/03/2021
Sampling duration (Minutes) : 32 Min.(12.30 to 13.02 Hrs.)
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Velocity of Stack Gases (m/sec.) : 22.44
Flow rate of PM (LPM) : 43
Flow rate of Gas (LPM) : 2.0
Sampling condition : Ok
Protocol used : IS 11255 & EPA

S.No.	Parameters	Test Method	Results	Units	Limits
1	Mercury as Hg	APHA 3rd edition 2017, 303A (Page No. 365)	BDL (DL 0.1)	mg/Nm ³	0.03

BDL** (Below Detection Limit) DL Detection Limit.

End of Report

VIENDRA KUMAR

(Checked By)
TECHNICAL MANAGER

RAJ KUMAR YADAV

(Authorized Signatory)

G M LAB OPERATION

Chapter – 5.0 CONCLUSION

RAIGARH ENERGY GENERATION LTD., authorities have been taken successful steps in controlling environmental pollution in and around the project. This fact is clear from analytical results of different environmental parameters. A brief conclusion is as follows.

Sr. No.	Environmental Parameters	Conclusion
5.1	Air Environment	After analysis of the samples from five different locations it is observed that both the individuals and average concentration of air pollutants in respect of SO ₂ , NO ₂ , PM ₁₀ , PM _{2.5} , CO and Mercury are well within the prescribed limits of NAAQM standards. People of township and of surrounding villages do not have any problems regarding the air quality and have no grievances because of Thermal Power Plant activities.
5.2	Water Environment	The analytical result of the samples from the ground water of villages, surface water from river, and domestic & industrial effluent after treatment shows that the concentrations of different water parameters are well within prescribed limits and will not cause any adverse impact on human health and on surrounding area. People of surrounding areas express satisfaction about the water quality of That area.
5.3	Noise Environment	The observations taken at four village location during day and night time shows that the noise level are well within prescribed limits of CPCB. Hence there is no possibility of any adverse effect of noise generated due to Thermal Power Plant activities on peoples of Surrounding areas.

All the above details show that Thermal Power Plant of RAIGARH ENERGY GENERATION LTD. is not causing any adverse impact on the human health and ecological balance.

Raigarh Energy Generation Limited

Sl. No.	ASH GENERATION AND UTILIZATION (LMT)			MODE OF ASH UTILIZATION AND UTILIZATION IN EACH MODE (in LMT)					
	Month	Fly Ash Generation	Fly Ash Utilization	In making of Fly Ash based Bricks / Blocks / Tiles etc.	In manufacture of Portland Pozzolana Cement	In Ash Dyke raising	In reclamation of low lying area	In Mine Filing	In Agriculture /Waste Land Development
1	October-20	0.96112	0.64856	0	0	0	0.64856	0	0
2	November-20	1.27376	0.18422	0	0	0	0.18422	0	0
3	December-20	1.03931	0.17249	0	0	0	0.17249	0	0
4	January-21	1.10979	0.26276	0	0	0	0.26276	0	0
5	February-21	0.86010	0.23324	0	0	0	0.23324	0	0
6	March-21	1.11223	0.38271	0	0	0	0.38271	0	0
	Total	6.35631	1.88398	0.00	0.00	-	1.88398	0.00	0.00

GREEN BELT DEVELOPMENT

Sl. No.	Description	Quantity / Unit
1.	Plantation on 33% land of 487 acre	167 acre
2.	Density of plantation	2500 plants/ Hectare
3.	Area required per plant	4.0 SQM
4.	Total no. of plantation since commissioning	206474 Nos.
5.	Total no. of plantation in FY 2019-20	2,600
6.	Total no. of plantation in FY 2020-21	4,426
7.	Survival Rate	>70%
Plant species planted at Raigarh Energy Generation Limited, Raigarh		
Sl. No.	Scientific Name	Common Name
1.	<i>Mangifera indica</i>	Mango
2.	<i>Azadirachta indica</i>	Neem
3.	<i>Ficus religiosa</i>	Pipal
4.	<i>Delonix regia</i>	Gulmohar
5.	<i>Peltophorum pterocarpum</i>	Peltafarm
6.	<i>Acacia mangium</i>	Arkesia
7.	<i>Casuarina equisetifolia</i>	Casurina
8.	<i>Alstonia scholaris</i>	Chitwan
9.	<i>Swietenia macrophylla</i>	Mahogany

Raigarh Energy Generation Ltd.

Corporate Social Responsibility

FY 2020-21

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REGL Backdrop -

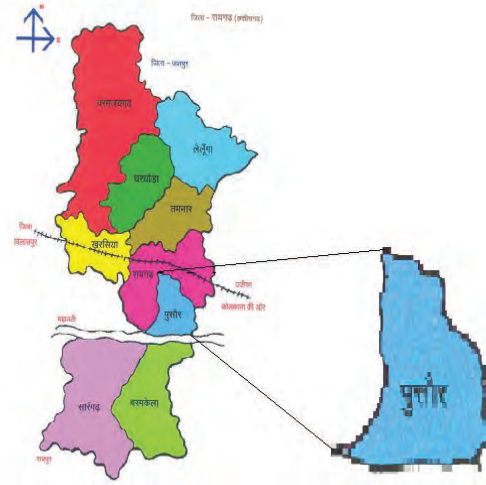
- Raigarh Energy Generation Limited formerly known as Korba West Power Company Limited (KWPCCL) is in Pussore block of Raigarh district, Chhattisgarh State. The block Pussore headquarter is situated 15 km from the power plant, comprised of 86 Panchayats covering 148 villages
- The project villages are Bade Bhandar, Chote Bhandar, Amalibhouna and Sarwani, Kalma is Raw Water Pump house village in Dabhra block of Janjgir-Champa district
- It is a 1x600 MW coal based thermal power plant initiated in the year 2008 and commissioned in the year 2014
- CSR activities regulated due financial adverse situation
- *Adani Power Limited took ownership of the company through Hon'ble NCLT bench on 24.06.2019*
- CSR activities are operational in 15 villages including Raw water pump house village
- REGL entered MOA for upgradation of ITI Sariya under Public Private Partnership
- *MOU executed with Adani Foundation on dated 22th December 2020, expecting to roll out CSR activities through AF from FY2021-22.*

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Power

LOCATION MAP



Chhattisgarh State



Raigarh District



CSR Vision – Improve Quality of life for all our communities through integrated and sustainable development



CSR & Group Values –

Courage : To embrace new and innovative ideas for betterment of people



Trust : Believe in all stakeholders

Commitment : Stand by our promises and adhere to high standard of work in all CSR activities



Program Thrust Area – Undertake activities, and projects as specified in schedule VII of section 135 of Companies Act-2013 and CSR rules there under:

1. Community Health Program
2. Sustainable Livelihood Development
3. Education Support Program
4. Community Infrastructure Development
5. Promotion of Rural Sports
6. Response to Emergencies and relief



CSR – Program Coverage

SL	Name of Panchayat	Village SL	Name of Villages	Number of Households	Population			
					SC	ST	Others	Total
1	Bade Bhandar	1	Bade Bhandar	316	116	329	753	1198
2	Chote Bhandar	2	Chhote Bhandar	166	58	28	479	565
	Chote Bhandar	3	Amlibhouna	149	0	532	45	577
	Chote Bhandar	4	Jevridih	107	197	42	186	425
3	Barpali	5	Barpali	210	422	112	268	802
	Barpali	6	Sarwani	133	25	384	51	460
4	Kotmara	7	Kotmara	340	41	411	681	1133
5	Supa	8	Supa	465	668	278	839	1785
6	Taparda	9	Taparda	301	440	90	479	1009
	Taparda	10	Tupakdhar	51	13	10	180	203
	Taparda	11	Kathali	152	61	24	524	609
7	Bunga	12	Bunga	695	245	453	1962	2660
8	Ranbhata	13	Ranbhata	298	206	373	642	1221
9	Kalma	14	Kalma	297	66	601	513	1180
10	Chandeli	15	Chandli	312	103	70	998	1171
			TOTAL	3992	2661	3737	8600	14998

As per census report-2011



COVID-19 Care -

Our Commitment towards welfare of society encouraged us to take initiatives during the COVID pandemic in consultation with local key stakeholders and district administration.

- Sanitization conducted in 18 peripheral villages, police station, primary health center, quarantine center and in plant premises
- Distributed Rice, pulse, onions, potatoes and groceries to 1,605 daily wage earners suffered during the lockdown
- Total 10,000 mask distributed to the service providers, communities and plant workers, stitched by SHGs
- Displayed flex banners on COVID-19 prevention protocols at strategic locations in plant, villages and Raigarh city for mass awareness
- Actively participated in district led campaign "Ek Rakshsutra Mask Ka" for awareness generation on importance of mask
- Provided ambulance for two months to most affected Sarangarh tehsil to carry COVID patients from village to COVID care centers at Raigarh



Mobile Health Care Unit -



To achieve universal health coverage, including financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines for all at all ages, *Mobile Health Care Unit (MHCU) launched on 05th Jan 2021*



- Basic health care services provided free of cost at the doorsteps covering about 15,000 population in 15 peripheral villages in partnership with HelpAge India
- Health check up and free medicines distributed & treated to 3653 (male-1721, female-1932) persons since the start of the program
- Home visits conducted by the Doctor to serve the critical & aged patients who can't reach to the Mobile Medical Unit
- Motivation and sensitization sessions conducted on promotion of COVID-19 vaccination
- The average percent of major illness reported was Musculoskeletal -16.41%, Hypertension -08.75%, Skin disorder -07.32%, Diabetes - 0.5.74%, General ailments were -61.78%



Livelihood Enhancement - Tailoring training benefits women



Sarita Chouhan of village Sarwani, elder among her four sisters had no option taking charge of household activities after completing 12th standard as her mother left home being mentally disabled. Sarita had no choice left with her, but she had zeal to do something which was noticed by Sakhi volunteer.



Sarita joined the Tailoring Training center at village Bade Bhandar organized by REGL under CSR. Following a six months stitching course, she earns INR 500 – 1000 per month through stitching, recently she stitched mask and cotton bags against order with other five trained women. Today, she also offers her services voluntarily in assisting the trainer at the Tailoring Training center.



At the tailoring center, 30 women from four core villages have been trained this year and 10 are stitching cloths at production center, rest are planning to start activity from their home.





Livelihood Enhancement - Women Empowerment

REGL focuses on the development of village level institutions to dispense its livelihood enhancement initiatives. The village level institutions include Self-Help Groups (SHGs), Surbhi Dugdh Utpadan Samiti, Mahanadi Gramin Mahila Bahudesi Sahkari Samiti and Village Development Committee.

The activities included :

- Regular meeting with the groups by Sakhi volunteer
- Encourage savings and credit support linkages
- 62 meetings with SHGs organized in seven villages where about 502 members participated, Total number of SHG-69 in 8 villages
- Mahanadi GMBS Samiti have revolving fund of Rs. 3.5 lakhs to extend credit support to SHGs to initiate income generating activities

International Women's Day observed in presence of women panchayat leaders and schoolteachers where about 50 women of peripheral village participated. Various activities organized for the overall development of the women.



Response to Emergency -

Response to emergencies like fire, accidents, flood, pandemic is critical and important to act on time. As a responsible citizen, REGL team proactively responded to such emergencies:

- Our safety and fire team extended support during fire calls from the near by villages and local administration
- Ambulance sent to villages and incident locations during road accidents and critical illness to shift patients to hospital and saved lives of the people
- Total 7,140 Kg rice distributed to flood affected people at flood relief camp of four villages
- Pro-actively undertook various activities during COVID-19 pandemic

CSR – Budget vs Actual Expense



Budget Line Items	Budget for FY 2020-21 (Rs. in lakh)				
	CAPEX	OPEX	TOTAL	Actual Exp.	Utilization %
A Community Health Program	0.00	20.00	20.00	7.32	36.60
B Sustainable Livelihood development	0.00	31.50	31.50	16.86	53.52
C Education Support Program	2.90	3.50	6.40	0.89	13.91
D Community Infrastructure Development	0.00	0.00	0.00	0.00	0.00
E Promotion of Rural Sports	0.00	2.00	2.00	0.15	7.50
F Community Dev/ Emergencies	0.00	24.12	24.12	1.79	7.42
G COVID-19	0.00	15.98	15.98	14.70	91.99
TOTAL BUDGET	2.90	97.10	100.00	41.71	41.71

Note:-To verify with F&A

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with
Goodness

Thank You

