JPL/ECC/Phase-II/FHY/2024-2025/Nov. Nov. 08, 2024

To,

The Director,
Ministry of Environment, Forests & Climate Change
3rd Floor, Vayu Block,
Indira Paryavaran Bhawan, Jor Bagh Road,
Aliganj, New Delhi-110003

Sub.: Submission of Six Monthly Compliance Report - 1x660 MW Coal Based Thermal Power Plant, Villages- Barela & Gorakpur, Tehsil- Ghansore, Distt.-Seoni, Madhya Pradesh.

Ref.: MoEF letter no. J 13012/63/2010-IA.II (T) Dated 21th August'2014 & 6th August 2021

Dear Sir,

Please find attached the **Six Monthly Compliance Report (April' 2024 to September' 2024)** in fulfilment of conditions stipulated in the Environment Clearance (letter issued by MoEF, New Delhi and referenced above) for 1x660 MW Coal based Thermal Power Plant at Villages- Barela & Gorakpur, Tehsil- Ghansore, Distt.- Seoni, Madhya Pradesh of M/s Jhabua Power Ltd. Soft copy is uploaded on MoEF & CC web site-Parivesh.

Kindly acknowledge.

Regards,

For Jhabua Power Ltd.

Authorized Signatory

Encl.: Six Monthly Compliance Report (April' 2024 to September' 2024)

Jhabua Power Limited
(A Joint Venture of NTPC Limited)
CIN : U40105WB1995PLC068616
Corporate Office: Unit No- 307, 3rd Floor, ABW Tower, M.G. Road, Near IFFCO Chowk, Gurugram- 122002, Haryana, India
Tel: 0124- 4392000/01 E- Mail : communications@jhabuapower.co.in Web : www.jhabuapower.co.in
Registered Office: Macmet House, 7th Floor, 10B, O C Ganguly Sarani, Kolkata- 700 020, West Bengal, India
Site Office: Village- Barela, Post Office- Attaria, Tehsil- Ghansore, District- Seoni- 480997, Madhya Pradesh, India

M/s JHABUA POWER LTD.

COMPLIANCE REPORT

In respect of

ENVIRONMENTAL CLEARANCE

"MoEF LETTER NO. J 13012/63/2010-IA.II (T) Dated 21th August'2014"

"MoEF LETTER NO. J 13012/63/2010-IA.II (T) Dated 6th August'2021" Extension of Validity

(COMPLIANCE PERIOD: APRIL 2024 to SEPTEMBER 2024)

FOR

Jhabua Power Limited

EXPANSION BY ADDITION OF

1 x 660 MW SUPERCRITICAL THERMAL POWER PLANT

AT

VILLAGE:- BARELA & GORAKHPUR
TEHSIL: - GHANSORE
DISTRICT: - SEONI
MADHYA PRADESH

INDEX

Compliance to conditions stipulated in Environmental Clearance

Ref MoEF letter no. J 13012/63/2010-IA.II (T) dated 21st August'2014		
A. Specific Conditions		
Sr. No	**Specific Conditions**	**Compliance**
i	Vision document specifying prospective plan for the site shall be formulated and submitted to the Regional Office of the Ministry within six months.	Vision documents specified prospective plan is already submitted with 1st half yearly compliance report in 2014.
ii	Harnessing solar power within the premises of the plant particularly at available roof tops shall be carried out and status of implementation including actual generation of solar power shall be submitted along with half yearly monitoring report.	Harnessing of solar power within premises could not be implemented due to M/s Jhabua Power Ltd was under stressed asset. It was under resolution professionals, financial creditors and was under NCLT and financial authorities has been transfer to resolution professionals from JPL to them. However, Resolution plan submitted by NTPC Limited and approved by NCLT, Kolkata Bench vide its order dated 6th July 2022 for Jhabua Power Ltd has been implemented on 05.09.2022. Now Project is being operated as NTPC-JPL joint venture. Construction work of Phase-II yet not started. We are committed to install the Harnessing of solar power in the near future along with the start of construction work of phase-II and the status of

		implementation will be submitted to the regional office of the Ministry.
iii	A stack of 275 m height shall be provided with continuous online monitoring equipment's for SOx, NOx and $PM_{2.5}$ & PM_{10}. Exit velocity of flue gases shall not be less than 22 m/sec. Mercury emissions from stack shall also be monitored on periodic basis.	A bi-flue Stack of 275 height is already provided with continuous online monitoring equipment's for SOx, Nox & PM for Phase –I. Continuous online monitoring equipment's for SOx, NOx, PM will also be provided for Phase –II. Exit velocity of flue gases will be maintained >22 m/sec & Mercury emissions from stack will be monitored periodically for phase-II.
iv	Sulphur and ash contents in the imported coal to be used in the project shall not exceed 0.5 % and 8.0 % respectively at any given time. In case of variation of coal quality at any point of time, fresh reference shall be made to the Ministry for suitable amendments to environmental clearance wherever necessary.	Imported coal is not envisaged to be used with sulphur & ash content more than 0.5% and 8.0 % respectively.
v	High Efficiency Electrostatic Precipitators (ESPs) shall be installed to ensure that particulate emission does not exceed 50 mg/Nm^3. 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.	High Efficiency Electrostatic Precipitators (ESPs) will be provided to restrict the emission < 50 $mg/Nm^{3.}$ Effective and adequate dust suppression system like water sprinkling system, Cyclone Separator & Bag Filters will be installed in the dusty areas such as in coal handling and ash handling points, transfer areas. Coal conveyer system is permanently covered to restrict the dust release whereas transportation of fly ash from the

		AHP to the ash pond will be through high concentration slurry disposal system.
vi	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.	Shall be complied.
vii.	COC of at least 5.0 shall be adopted.	Optimization of cycle of concentration will be carried out to achieve the COC 5.0.
viii.	Monitoring of 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 also be undertaken and results/findings submitted along with half yearly monitoring report.	The ground water and surface water samples are regularly collected and records maintained effectively under the compliance of Environment Clearance granted for Phase –I. Ground water and surface water reports are submitted on half-yearly basis to statutory authority. Surface & Ground water report is enclosed as **Annexure -1.**
ix	A well designed rain water harvesting system shall be put in place within six months, which shall comprise of rain water collection from the built up and open area in the plant premises and detailed record kept of the quantity of water harvested every year and its use.	A rain water harvesting & recharging system, designed in consultation with Central Groundwater Authority/ Board (Authentication letter is enclosed as **Annexure -2**).
x	No water bodies including natural drainage system in the area shall be disturbed due to activities associated with the setting up /	Water bodies including natural drainage are not being disturbed due to any activity

	operation of the power plant.	of our existing power plant.
xi	Hydrogeology of the area shall be reviewed annually from an institute/ organization of repute to assess impact of surface water and ground regime (especially around ash dyke). In case any deterioration is observed specific mitigation measures shall be undertaken and reports/ data of water quality monitored regularly and maintained shall be submitted to the Regional Office of the Ministry.	Hydro-geological study of the area is being reviewed under the Phase -I. The hydrogeological report of the area reviewed is submitted under the E.C. compliance of Phase-I. The consistent trend of change in water level from pre monsoon to post monsoon of monitoring wells shows that there is no adverse impact in the ground water table in the project area and adjoining villages because of the project site.
xii	Wastewater generated from the plant shall be treated before discharge to comply limits prescribed by the SPCB/CPCB.	Wastewater generated from the plant during phase-II operation will be treated in ETP to confirm the SPCB/CPCB limits before its utilization.
xiii	Additional soil for leveling of the proposed site shall be generated within the sites (to the extent possible) so that natural drainage system of the area is protected and improved.	The site is fairly levelled and there are no undulations. Soil if required for minor leveling shall be sourced from within the site so that natural drainage system of the area is protected and improved.
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. Mercury and other heavy metals (As, Hg, Cr, Pb etc.) will be monitored in the bottom ash as also in the effluents emanating from the existing ash pond. No ash shall be disposed off in low lying area.	Fly ash will be collected in dry form. Silo will be provided as a storage facility for storage of dry fly ash apart from the ash pond for the disposal of unutilized fly ash through high concentration slurry system. Mercury and other heavy metals (As, Hg, Cr, Pb etc.) will be monitored in the bottom ash as well as effluent of ash pond. Fly Ash will not be disposed off in

		low laying area without NOC from MPPCB. Ash pond effluent report for phase -I is enclosed as **Annexure -3.**
xv	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, prior 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 coordination with the State Pollution Control Board.	Fly ash will not be used in agriculture and filling of mines without NOC from MPPCB.
xvi	Fugitive emission of fly ash (dry or wet) shall be controlled such that no agricultural or non-agricultural land is affected. Damage to any land shall be mitigated and suitable compensation provided in consultation with the local Panchayat.	Effective measures like sprinkling will be adopted to control fugitive emission of fly ash so that no agricultural or non-agricultural land is affected.
xvii	Ash pond shall be lined with HDPE/LDPE 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.	Ash pond will be lined with 500-µ liner to prevent the leachate. Besides, adequate safety measures will be taken to avoid any breach of the dyke.
xviii	A long term study of radio activity and heavy metals contents on coal to be used	Required Mechanism for an in-built continuous monitoring for radio activity

	shall be carried out through a reputed institute and results thereof analyzed every two year and reported along with monitoring reports. 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.	and heavy metals in coal and fly ash (including bottom ash) will be put in place. The radioactivity content study carried out by Department of Atomic Energy Board of Radiation & Isotope Technology in coal and fly ash for phase -I is enclosed as **Annexure -4.**
xix	Green Belt consisting of three tiers of plantations of native species around plant and at least 50 m width shall be raised. Wherever 50 m width is not feasible a 20 m width shall be raised and adequate justification shall be submitted to the Ministry. Tree density shall not be less than 2500 per ha with survival rate not less than 80 %.	We are developing greenery in and around the plant and planted 186232 trees. Local plant species have been preferred for the plantation having following characteristics • Fast growing with thick canopy cover • Adequate height with longer duration of foliage • Perennial and evergreen Green belt development report is enclosed as **Annexure -5.**
xx	The green belt development of the existing unit shall be expedited with the native species and for the proposed expansion, shall be initiated at the earliest and well before the start of construction.	Native species is already being expedite for green belt development under existing unit. Green belt development is already initiated for proposed expansion.
xxi	CSR schemes identified based on need based assessment shall be implemented in consultation with the village Panchayat and the District Administration starting from the development of project itself. As part of CSR prior identification of local employable youth and eventual employment in the project after imparting relevant training shall be	Assessment done. Shall be complied with.

	also undertaken. Company shall provide separate budget for community development activities and income generating programs.	
xxii	A minimum amount of Rs 14.0 Crores as one time capital investment shall be earmarked for activities to be taken up under CSR during construction phase of the Project. Recurring expenditure for CSR thereafter shall be Rs 2.8 Crores per annum or as per CSR guidelines of Govt. of India, whichever is more till the life of the plant.	Shall be complied with.
xxiii	The project proponent shall also adequately contribute in the development of the neighboring villages. Special package with implementation schedule for free potable drinking water supply in the nearby villages in and schools shall be undertaken a time bound manner.	Being continuously implemented. Bore wells and hand pumps are being installed in the surrounding villages of Barela, Gorakhpur & Binaiki. Construction of new open dug well is done in village Binaiki. The new dedicated pipe line along with suitable electric motor is installed in the well for supply of drinking water to the village.
xxiv	For proper and periodic monitoring of CSR activities, a CSR committee or a Social Audit committee or a suitable credible external agency shall be appointed. CSR activities shall also be evaluated by an independent external agency. This evaluation shall be both concurrent and final.	MGSIRD – Mahatma Gandhi State Institute of Rural Development, (Govt. of MP) is appointed by JPL external agency for evaluation of CSR activities. The CSR audit report is enclosed as **Annexure -6.**
xxv	An Environmental Cell comprising of at least one expert in environmental science/ engineering, ecology, occupational health	A separate Environment Management Cell is in place headed by Mr. Anoop Kumar Srivastava, DGM. Environment.

	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.	Details of Environment Management cell including personnel involved, their designation, qualification and hierarchy is enclosed as **Annexure -7.**
B. General Conditions:		
i	The treated effluents conforming to the prescribed standards only shall be re-circulated and reused within the plant. Arrangements shall be made that effluents and storm water do not get mixed.	Treated effluents conforming to the prescribed standards will only be recycled & reused. Zero Discharge condition will be maintained effectively except in monsoon season for which separate storm water system is constructed under phase-I to avoid the mixing of effluent.
ii	A sewage treatment plant shall be provided (as applicable) and the treated sewage shall be used for raising greenbelt/plantation.	Sewage treatment plant based on Fixed Film Aerobic Treatment System of adequate capacity has been installed for the treatment of raw sewage under phase -I. Treated sewage water is being used for greenbelt development/plantation.
iii	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.	Continuous and effective safety measures will be taken and provided for effective fire prevention & protection in the plant area to check/minimize the spontaneous fires in coal yard, especially during summer season. Besides, above, a dedicated and well-equipped Fire & Safety department is in place to avoid such type

		of incident in the plant area.
iv	Storage facilities for auxiliary liquid fuel such as LDO/ 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.	• Storage facilities for LDO will be made in the plant area in consultation with Department of Explosives, Nagpur after getting the NOC for the same. • Disaster management plan has been prepared and is in place to handle case of any accident taking place due to storage of oil for phase -I.
v	First Aid and sanitation arrangements shall be made for the drivers and other contract workers during construction phase.	Adequate First aid and sanitation facility are being provided round the clock for phase –same and I will be maintained in Phase –II also.
vi	Noise levels emanating from turbines shall be so controlled such that the noise in the work zone shall be limited to 85 dB(A) from source. 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.	• The noise level in the work zone area will be maintained below 85 dBA. • Acoustic hood will be provided for the turbine. • Earplugs /earmuffs being provided as personal protective equipment to the workers in phase -I. Noise level monitoring report is enclosed as **Annexure 8.**
vii	Regular monitoring of ambient air ground level concentration of SO_2, NOx, $PM_{2.5}$ & PM_{10} and Hg shall be carried out in the impact zone and records maintained. If at	• Regular monitoring of ground level concentration of SO_2, NO_x, RSPM ($PM_{2.5}$ & PM_{10}) and Hg is being carried out in the impact zone and records

	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.	are being maintained in phase-I and same will be continued for phase-II also. Ambient Air Quality monitoring report is enclosed as **Annexure- 9.** • The location of the monitoring stations has already been decided in consultation with Regional Office of MPPCB, Jabalpur. • Permanent Online Ambient Air Quality Monitoring Station has been installed and commissioned for the continuous monitoring of PM10, PM2.5, SOx, NOx & CO along with meteorological study like % Humidity, Rainfall, Wind Velocity, Wind Velocity, Solar Radiation, Atmospheric Pressure, temperature. • Other than permanent AAQMS, Mobile Van for monitoring of PM10, PM2.5, SOx, NOx & CO has also been installed & commissioned.
viii	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.	All necessary facility for workers will be provided. After completion of the project activities and start of O&M phase, temporary structure will be either used for O&M personnel or will be removed.

ix	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 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.	We had published in two newspaper" Dainik Bhaskar & Nai Duniya on 27.08.2014" in local language which are widely circulated in the area.
x	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, were received while processing the proposal. The clearance letter shall also be put on the website of the Company by the proponent.	Copy of clearance has also been sent to concerned Panchayat, Zila Parisad and the Local NGO. Environmental Clearance has already been web hosted on company web site.
xi	The proponent shall upload the status of compliance of the stipulated environmental clearance 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	Status of compliance of the stipulated EC conditions, including results of monitored data is hosted on company web site. The criteria pollutant levels namely; RSPM, SO_2, NO_x (ambient levels as well as stack emissions) is displayed at the plant main gate.

	emissions) shall be displayed at a convenient location near the main gate of the company in the public domain.	
xii	The environment statement for each financial year ending 31st 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 respective Regional Offices of the Ministry by e-mail.	The environment Statement report is being submitted regularly to Madhya Pradesh State Pollution Control Board before 30th September every year.
xiii	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 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.	We are regularly submitting the six monthly compliance reports on the status of compliance of the stipulated EC conditions including results of monitored data to the respective Regional Office of MOEF, Bhopal, the respective Zonal Office of CPCB and the SPCB. The receipts of last compliance report submission is enclosed as **Annexure-10.** Status of compliance of the stipulated EC conditions, including results of monitored data is hosted on company web site.
xiv	Regional Office of the Ministry of Environment & Forests will monitor the implementation of the stipulated conditions. A complete set of documents including	The same is being complied with.

	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 up-load the compliance status in their website and up-date the same from time to time at least six monthly basis. Criteria pollutants levels including NO_x (from stack & ambient air) shall be displayed at the main gate of the power plant.	
xv	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.	Complied with and are being followed.
xvi	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.	Same will be complied.
xvii	Full cooperation shall be extended to the Scientists/Officers from the Ministry / Regional Office of the Ministry / CPCB/ SPCB who would be monitoring the compliance of	We ensure full cooperation to the Scientists / Officers from the Ministry / Regional Office of the Ministry / CPCB/ SPCB who would be monitoring the

	environmental status.	compliance of environmental status.
7	The Ministry of Environment and Forests reserves the right to revoke the clearance if conditions stipulated are not implemented to the satisfaction of the Ministry. The Ministry may also impose additional environmental conditions or modify the existing ones, if necessary.	Agreed for the same.
8	The environmental clearance accorded shall be valid for a period of 5 years to start operations by the power plant.	Agreed
9	Concealing factual data or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of Environment (Protection) Act, 1986.	Agreed
10	In case of any deviation or alteration in the project proposed including coal transportation system from those submitted to this Ministry for clearance, a fresh reference should be made to the Ministry to assess the adequacy of the condition(s) imposed and to add additional environmental protection measures required, if any.	Agreed
11	The above stipulations would be enforced among others under the Water (Prevention and Control of Pollution) Act, 1974, the Air (Prevention and Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986 and rules there under, Hazardous	Noted & same shall be complied with.

	Wastes (Management and Handling) Rules, 1989 and its amendments, the Public Liability Insurance Act, 1991 and its amendments.	
12	Any appeal against this environmental clearance shall lie with the National Environment Appellate Authority, if preferred, within 30 days as prescribed under Section 11 of the National Environment Appellate Act, 1997.	Agreed
Ref MoEF letter no. J 13012/63/2010-IA.II (T) dated 6th August'2021		
i	PP shall implement all the condition of E.C dated 21st August, 2014 within certain time line.	All the Conditions under E.C. grated for 1 x 660 supercritical coal based power plant are under implementation.
ii	100% Fly ash and Bottom ash utilization plan shall be prepared and to be implemented in stipulated time period. PP shall comply with Ministry's notification dated 22nd April, 2021 regarding Fly ash utilization from first year of commissioning. Bottom ash should be treated as a resource not as a waste.	Fly ash utilization plan for 1 x 660 MW power plant is enclosed as **Annexure -11**. Fly ash utilization notification of MoEF & CC dated 31st December will be complied effectively. Bottom ash will be used as a filler in low-lying are for wasteland reclamation as per CPCB guideline March 2019.
iii	Latest emission standard (after January 2017 onwards) shall be complied with.	We will adhere with the prescribed norms of Emission applicable for thermal power stations commissioned after January 2017.
iv	PP shall implement silo loading facility for fly ash storage.	Similar to Phase-I, Silo will also be constructed for Phase-II for fly ash storage.

V	PP shall submit plan for the implementation of 33% peripheral green belt (only trees of local species) with fund allocated and time line to Ministry's Regional office within six months.	We have already submitted green belt development plan to CCF, Seoni with Phase –I project and more than 186232 plantations has been completed out of which 47342 plantations are planted under phase-II. Submission receipt along with plot plan highlighting green belt area is enclosed as **Annexure -12**.
Vi	PP shall submit the timeline for fulfillment of commitments during Public Hearing with allotted fund to Ministry's Regional Office.	All the commitments during public hearing has been fulfilled.
Vii	PP shall increase the fund allocation for Environment Management plan since the overall project cost has been increase.	Details of fund allocation for Environment Management plan is given below; 1. Capital cost, Phase –II: 193 Cr. 2. Recurring cost, Phase-II: 9.5 CR.
Viii	PP shall submit the fund allocation for Wildlife conservation plan to Forest Department within six months from the issues of this letter and submit the action taken to Ministry's Regional Office.	Wildlife Management plan along with flora & Fauna details and allocated fund is submitted to Forest officer during EIA study for Phase-I for approval. Approved copy of Wildlife Conservation plan is enclosed as **Annexure -13.**
ix	PP shall develop tree plantation all along the raw material/ coal storage yard with in six month of issue of this letter and shall maintain survival rate over 90%. The status of compliance will be submitted to the regional office of the Ministry along with six monthly compliance report.	Plantation all along the raw material/ coal storage yard has already been developed under Phase-I project with survival rate >90%. We are doing more plantation in these area to increase the plantation density.

Annexure -1

Surface & Ground water report.

TEST REPORT

VIBRANT
"Experience the unimaginable"

TC-11227

Sample Number : VTL/SW/01

Name & Address of the Party : M/s Jhabua Power Limited (A JV of NTPC LTD.)
Post Office - Attaria, Tehsil- Ghansore Seoni MP

ULR No. : TC112273400000215OF
Report No. : VTL/W/2410030014/A
Format No : 7.6 F-01
Party Reference No : 4300005689
Report Date : 10/10/2024
Period of Analysis : 03/10/2024-10/10/2024
Receipt Date : 03/10/2024
Sampling Date : 02/10/2024
Sampling Type : Grab
Sample Quantity : 2 Ltr.
Coordinates : --

Sample Description : SURFACE WATER
Sampling Location : Pariyat River
Sample Collected By : VTL Team
Preservation : Suitable Preservation
Method of sampling : IS :3025

S.No.	Test Parameters	Test Method	Results	Unit
1	pH value	IS : 3025 (P-11) : 2022	7.55	--
2	Turbidity	IS : 3025 (P- 10) : 1984, RA 2017	*BLQ(**LOQ-1.0)	NTU
3	Total Dissolved Solids (TDS)	IS : 3025 (P-16) : 1984, RA 2017	392	mg/l
4	Chloride (as Cl)	IS: 3025 (P-32) : 1988, RA 2019	34.8	mg/l
5	Sulphate as (SO4)	IS: 3025 (P- 24) : 1998,Sec.RA 2022	17.6	mg/l
6	Total Alkalinity (as CaCO3)	IS: 3025 (P- 23) : 1986, RA 2019	176	mg/l
7	Total Suspended Solids (TSS)	IS: 3025 (P-17) : 2022	9.2	mg/l
8	Total Hardness (CaCO3)	IS: 3025 (P- 21) : 2009, RA 2019	227	mg/l
9	Calcium (as Ca)	IS : 3025 (P-40) : 1991 RA 2019	49.6	mg/l
10	Magnesium (as Mg)	IS : 3025 (P- 46) : 1994, RA 2019	25.09	mg/l
11	Fluoride (as F)	APHA 23rd Edition, 4500D, 2017	0.58	mg/l
12	Nitrate (as NO3)	IS: 3025 (P- 34) : 1988 RA 2022	6.54	mg/l
13	Biochemical Oxygen Demand (BOD) (3 days at 27°C)	IS: 3025 (P-44) : 1993, RA : 2019	10.8	mg/l
14	Chemical Oxygen Demand (COD)	IS : 3025 (P- 58) : 2006 RA 2017	37.3	mg/l
15	Iron (as Fe)	APHA 23rd Edition,3111B, 2017	0.21	mg/l
16	Zinc (as Zn)	APHA 23rd Edition, 3030D,3113B, 2017	0.32	mg/l
17	Copper (as Cu)	APHA 23rd edition, 3111B, 2017	*BLQ(**LOQ- 0.02)	mg/l
18	Manganese (as Mn)	APHA 23rd Edition, 3030D,3113B, 2017	*BLQ(**LOQ- 0.05)	mg/l
19	Lead (as Pb)	APHA 23rd Edition, 3030D,3113B, 2017	*BLQ(**LOQ- 0.005)	mg/l
20	Arsenic (as As)	APHA 23rd Edition, 3030D,3114C, 2017	*BLQ(**LOQ- 0.005)	mg/l
21	Boron (as B)	APHA 23rd Edition, 4500D, 2017	*BLQ(**LOQ- 0.2)	mg/l

Checked by

RK Yadav
Lab Incharge
Authorized Signatory

Approved & Certified EPA 1986 Recognised, ISO:9001 and OHSAS:45001 Certified

Vibrant Techno Lab Pvt. Ltd.
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TEST REPORT

VIBRANT
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TC-11227

ULR No. : TC112272400000215OF
Report No. : VTL/W/2410030014/A

Sample Number : VTL/SW/01

S.No.	Test Parameters	Test Method	Results	Unit
22	Chromium (as Cr)	APHA 23rd Edition,3113B, 2017	*BLQ(**LOQ- 0.02)	mg/l
23	Cadmium (as Cd)	APHA 23rd Edition,3113B ,2017	*BLQ(**LOQ- 0.002)	mg/l
24	Selenium (as Se)	APHA 23rd Edition,3114C, 2017	*BLQ(**LOQ- 0.005)	mg/l
25	Mercury (as Hg)	APHA 23rd Edition,3114C, 2017	*BLQ(**LOQ- 0.001)	mg/l
26	Phenolic Compounds	APHA 23rd Edition,5530C, 2017	*BLQ(**LOQ- 0.05)	mg/l

*BLQ Blow limit of Quantification **LOQ Limit of Quantification

End of Report

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RK Yadav
Lab Incharge
Authorized Signatory

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TEST REPORT

VIBRANT
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Sample Number : VTL/SW/01

Name & Address of the Party : M/s Jhabua Power Limited (A JV of NTPC LTD.)
Post Office - Attaria, Tehsil- Ghansore Seoni MP

Report No. : VTL/W/2410030014/B
Format No : 7.8 F-01
Party Reference No : 4300005669
Report Date : 10/10/2024
Period of Analysis : 03/10/2024-10/10/2024
Receipt Date : 03/10/2024
Sampling Date : 02/10/2024
Sampling Type : Grab
Sample Quantity : 2 Ltr.
Coordinates : --

Sample Description : SURFACE WATER
Sampling Location : Pariyat River
Sample Collected By : VTL Team
Preservation : Suitable Preservation
Method of sampling : IS :3025

S.No.	Test Parameters	Test Method	Results	Unit
1	Colour	IS : 3025 (P-4) : 2021	*BLQ(**LOQ-5.0)	Hazen
2	Odour	IS : 3025 (P-5) : 2018	Agreeable	--
3	Taste	IS : 3025 (P-8) : 1984 RA 2017	Agreeable	--
4	Residual Free Chlorine (RFC)	IS : 3025 (P-26) :2021	*BLQ(**LOQ- 0.2)	mg/l
5	Cyanide (as CN)	APHA 23rd Edition, 4500D, 2017	*BLQ(**LOQ- 5.0)	mg/l
6	Anionic Detergents (MBAS)	APHA 23rd ed., 2017, 5530C	*BLQ(**LOQ 0.02)	mg/l

*BLQ Blow limit of Quantification **LOQ Limit of Quantification

End of Report

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TEST REPORT

VIBRANT
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Sample Number : VTL/SW/02

Name & Address of the Party : M/s Jhabua Power Limited (A JV of NTPC LTD.)
Post Office - Attaria, Tehsil- Ghansore Seoni MP

ULR No. : TC112272400000215IF
Report No. : VTL/W/24100300151A
Format No : 7.8 F-01
Party Reference No : 4300005689
Report Date : 10/10/2024
Period of Analysis : 03/10/2024-10/10/2024
Receipt Date : 03/10/2024
Sampling Date : 02/10/2024
Sampling Type : Grab
Sample Quantity : 2 Ltr.
Coordinates : --

Sample Description : SURFACE WATER
Sampling Location : Tomar River
Sample Collected By : VTL Team
Preservation : Suitable Preservation
Method of sampling : IS :3025

S.No.	Test Parameters	Test Method	Results	Unit
1	pH value	IS : 3025 (P-11) : 2022	7.69	--
2	Turbidity	IS : 3025 (P- 10) : 1984, RA 2017	*BLQ(**LOQ-1.0)	NTU
3	Total Dissolved Solids (TDS)	IS : 3025 (P-16) : 1984, RA 2017	320	mg/l
4	Chloride (as Cl)	IS: 3025 (P-32) : 1988, RA 2019	36.4	mg/l
5	Sulphate as (SO4)	IS: 3025 (P- 24) : 1986,Sec.RA 2022	17.1	mg/l
6	Total Alkalinity (as CaCO3)	IS: 3025 (P- 23) : 1986, RA 2019	168	mg/l
7	Total Suspended Solids (TSS)	IS: 3025 (P-17) : 2022	6.9	mg/l
8	Total Hardness (CaCO3)	IS: 3025 (P- 21) : 2009, RA 2019	141	mg/l
9	Calcium (as Ca)	IS : 3025 (P-40) : 1991 RA 2019	27.46	mg/l
10	Magnesium (as Mg)	IS : 3025 (P- 46) : 1994, RA 2019	17.61	mg/l
11	Fluoride (as F)	APHA 23rd Edition, 4500D, 2017	0.51	mg/l
12	Nitrate (as NO3)	IS: 3025 (P- 34) : 1988 RA 2022	7.23	mg/l
13	Biochemical Oxygen Demand (BOD) (3 days at 27°C)	IS: 3025 (P-44) : 1993, RA : 2019	6.18	mg/l
14	Chemical Oxygen Demand (COD)	IS : 3025 (P- 58) : 2006 RA 2017	28.6	mg/l
15	Iron (as Fe)	APHA 23rd Edition,3111B, 2017	0.21	mg/l
16	Zinc (as Zn)	APHA 23rd Edition, 3030D,3113B, 2017	0.35	mg/l
17	Copper (as Cu)	APHA 23rd edition, 3111B, 2017	*BLQ(**LOQ- 0.02)	mg/l
18	Manganese (as Mn)	APHA 23rd Edition, 3030D,3113B, 2017	*BLQ(**LOQ- 0.05)	mg/l
19	Lead (as Pb)	APHA 23rd Edition, 3030D,3113B, 2017	*BLQ(**LOQ- 0.005)	mg/l
20	Arsenic (as As)	APHA 23rd Edition, 3030D,3114C, 2017	*BLQ(**LOQ- 0.005)	mg/l
21	Boron (as B)	APHA 23rd Edition, 4500D, 2017	*BLQ(**LOQ- 0.2)	mg/l

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TEST REPORT

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ULR No. : TC112272400000215 1F
Sample Number : VTL/SW/02 Report No. : VTL/W/2410330015/A

S.No.	Test Parameters	Test Method	Results	Unit
22	Chromium (as Cr)	APHA 23rd Edition,3113B, 2017	*BLQ(**LOQ- 0.02)	mg/l
23	Cadmium (as Cd)	APHA 23rd Edition,3113B ,2017	*BLQ(**LOQ- 0.002)	mg/l
24	Selenium (as Se)	APHA 23rd Edition,3114C, 2017	*BLQ(**LOQ- 0.005)	mg/l
25	Mercury (as Hg)	APHA 23rd Edition,3114C, 2017	*BLQ(**LOQ- 0.001)	mg/l
26	Phenolic Compounds	APHA 23rd Edition,5530C, 2017	*BLQ(**LOQ- 0.05)	mg/l

*BLQ Blow limit of Quantification **LOQ Limit of Quantification

End of Report

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TEST REPORT

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Sample Number : VTL/SW/02

Name & Address of the Party : M/s Jhabua Power Limited (A JV of NTPC LTD.)
Post Office - Attaria, Tehsil- Ghansore Seoni MP

Report No.	: VTL/W/24100300151B
Format No	: 7.8 F-01
Party Reference No	: 4300005689
Report Date	: 10/10/2024
Period of Analysis	: 03/10/2024-10/10/2024
Receipt Date	: 03/10/2024
Sampling Date	: 02/10/2024
Sampling Type	: Grab
Sample Quantity	: 2 Ltr.
Coordinates	: --

Sample Description	: SURFACE WATER
Sampling Location	: Tomar River
Sample Collected By	: VTL Team
Preservation	: Suitable Preservation
Method of sampling	: IS :3025

S.No.	Test Parameters	Test Method	Results	Unit
1	Colour	IS : 3025 (P-4) : 2021	*BLQ(**LOQ-5.0)	Hazen
2	Odour	IS : 3025 (P-5) : 2018	Agreeable	--
3	Taste	IS : 3025 (P-8) : 1984 RA 2017	Agreeable	--
4	Residual Free Chlorine (RFC)	IS : 3025 (P-26) :2021	*BLQ(**LOQ- 0.2)	mg/l
5	Cyanide (as CN)	APHA 23rd Edition, 4500D, 2017	*BLQ(**LOQ- 5.0)	mg/l
6	Anionic Detergents (MBAS)	APHA 23rd ed., 2017, 5530C	*BLQ(**LOQ 0.02)	mg/l

*BLQ Blow limit of Quantification **LOQ Limit of Quantification

End of Report

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TEST REPORT

VIBRANT
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TC-11227

Sample Number : VTL/W/06

Name & Address of the Party : M/s Jhabua Power Limited (A JV of NTPC LTD.)
Post Office - Attaria, Tehsil- Ghansore Seoni MP

ULR No. : TC112272400000214 3F
Report No. : VTL/W/2410030006/A
Format No : 7.8 F-01
Party Reference No : 4300005689
Report Date : 10/10/2024
Period of Analysis : 03/10/2024-10/10/2024
Receipt Date : 03/10/2024
Sampling Date : 02/10/2024
Sampling Type : Grab
Sample Quantity : 2 Ltr.
Coordinates : --

Sample Description : Ground Water Sample
Sampling Location : Project Site
Sample Collected By : VTL Team
Preservation : Suitable Preservation
Method of sampling : IS :3025

S.No.	Test Parameters	Test Method	Results	Units	IS:10500-2012	
					Acceptable Limit	Permissible Limit
1	pH (at 25°C)	IS : 3025 (P-11) : 2022	7.48	--	6.5 to 8.5	No Relaxation
2	Turbidity	IS : 3025: (P-10)1984, RA 2017	*BLQ(**LOQ-1.0)	NTU	1	5
3	Total Hardness (as CaCO3)	IS: 3025 (P-21): 2009, RA 2019	196	mg/l	200	600
4	Calcium (as Ca)	IS: 3025 (P- 40): 1991 RA 2019	61.3	mg/l	75	200
5	Total Alkalinity (as CaCO3)	IS: 3025 (P-23): 1986, RA 2019	165	mg/l	200	600
6	Chloride (as Cl)	IS: 3025 (P-32): 1988, RA 2019	68.3	mg/l	250	1000
7	Magnesium (as Mg)	IS: 3025 (P-46): 1994, RA 2019	10.46	mg/l	30	100
8	Total Dissolved Solids	IS :3025 (P-16): 1984, RA 2017	465	mg/l	500	2000
9	Sulphate (as SO4)	IS: 3025 (P-24): 1986, RA 2022	39.4	mg/l	200	400
10	Fluoride (as F)	APHA 23rd Edition ,4500FD :2017	0.71	mg/l	1.0	1.5
11	Nitrate (as NO3)	IS: 3025 (P-34): 1988	9.86	mg/l	45.0	No Relaxation
12	Iron (as Fe)	APHA 23rd Edition , 3111B,2017	0.28	mg/l	1.0	No Relaxation
13	Aluminium (as Al)	IS 3025 (P-55): 2003, RA 2019	*BLQ(**LOQ-0.03)	mg/l	0.03	0.2
14	Boron (as B)	APHA 23rd Edition 4500B,2017	*BLQ(**LOQ-0.2)	mg/l	0.5	1.0
15	Total Chromium (as Cr)	APHA 23rd Edition 2017 3113 B, 2017	*BLQ(**LOQ-0.02)	mg/l	0.05	No Relaxation
16	Phenolic Compounds (C6H5OH)	APHA 23rd Edition 5530C 2017	*BLQ(**LOQ-0.001)	mg/l	0.001	0.002
17	Zinc (as Zn)	APHA 23rd Edition,3030D, 3113 B , 2017	0.34	mg/l	5.0	15.0

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Sample Number : VTL/W/06

ULR No. : TC112272400000214 3F
Report No. : VTL/W/2410030006/A

S.No.	Test Parameters	Test Method	Results	Units	IS:10500-2012	
					Acceptable Limit	Permissible Limit
18	Copper (as Cu)	APHA 23rd Edition 3111B 2017	*BLQ(**LOQ-0.02)	mg/l	0.05	1.5
19	Manganese (as Mn)	APHA 23rd Edition, 3030D, 3111 B, 2017	*BLQ(**LOQ-0.05)	mg/l	0.1	0.3
20	Cadmium (as Cd)	APHA 23rd Edition, 3030D, 3113 B, 2017	*BLQ(**LOQ-0.002)	mg/l	0.003	No Relaxation
21	Lead (as Pb)	APHA 23rd Edition, 3030D, 3113 B,2017	*BLQ(**LOQ-0.005)	mg/l	0.01	No Relaxation
22	Selenium (as Se)	APHA 23rd Edition, 3114C, 2017	*BLQ(**LOQ-0.005)	mg/l	0.01	No Relaxation
23	Arsenic (as As)	APHA 23rd Edition, 3114C, 2017	*BLQ(**LOQ-0.005)	mg/l	0.01	0.05
24	Mercury (as Hg)	APHA 23rd edition, 3114C 2017	*BLQ(**LOQ-0.001)	mg/l	0.001	No Relaxation
25	Total Coliform	IS : 15185 : 2016	Absent	per 100 ml	Shall not be detectable in any 100 ml sample	--
26	E.Coli	IS : 15185 : 2016	Absent	per 100 ml	Shall not be detectable in any 100 ml sample	--
27	Free Residual Chlorine	IS 3025 (P-26):2021	*BLQ(**LOQ-0.2)	mg/l	0.2	1.0

*BLQ-Below Limit Of Quantification, **LOQ- Limit of Quantification

End of Report

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TEST REPORT

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Sample Number : VTL/W/06

Name & Address of the Party : M/s Jhabua Power Limited (A JV of NTPC LTD)
Post Office - Attaria, Tehsil- Ghansore Seoni MP

Report No. : VTL/W/2410030006/B
Format No : 7.8 F-01
Party Reference No : 4300005669
Report Date : 10/10/2024
Period of Analysis : 03/10/2024-10/10/2024
Receipt Date : 03/10/2024
Sampling Date : 02/10/2024
Sampling Type : Grab
Sample Quantity : 2 Ltr.
Coordinates : --

Sample Description : Ground Water Sample
Sampling Location : Project Site
Sample Collected By : VTL Team
Preservation : Suitable Preservation
Method of sampling : IS :3025

S.No.	Test Parameters	Test Method	Results	Units	IS:10500-2012	
					Acceptable Limit	Permissible Limit
1	Colour	IS : 3025:(P-4)1983, :RA 2017	*BLQ(**LOQ-5.0)	Hazen	5	15
2	Odour	IS : 3025 (P-5) : RA 2018	Agreeable	--	Agreeable	Agreeable
3	Taste	IS :3025 (P-8): 1984 RA 2017	Agreeable	--	Agreeable	Agreeable
4	Cyanide (as CN)	APHA 23rd Edition ,4500D 2017	*BLQ(**LOQ-5.0)	mg/l	0.05	No Relaxation
5	Anionic Detergents (as MBAS)	APHA 23rd Edition , 5540C 2017	*BLQ(**LOQ-0.05)	mg/l	0.2	1.0

*BLQ-Below Limit Of Quantification, **LOQ- Limit of Quantification

End of Report

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TEST REPORT

VIBRANT
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TC-11327

Sample Number : VTL/W/07

Name & Address of the Party : M/s Jhabua Power Limited (A JV of NTPC LTD.)
Post Office - Attaria, Tehsil- Ghansore Seoni MP

Report No. : VTL/W/2410030007/A
Format No : 7.8 F-01
Party Reference No : 4300005689
Report Date : 10/10/2024
Period of Analysis : 03/10/2024-10/10/2024

Sample Description : Ground Water Sample
Sampling Location : Village - Barela
Sample Collected By : VTL Team
Preservation : Suitable Preservation
Method of sampling : IS :3025

Receipt Date : 03/10/2024
Sampling Date : 02/10/2024
Sampling Type : Grab
Sample Quantity : 2 Ltr.
Coordinates : --

S.No.	Test Parameters	Test Method	Results	Units	IS:10500-2012	
					Acceptable Limit	Permissible Limit
1	pH (at 25°C)	IS : 3025 (P-11) : 2022	7.28	--	6.5 to 8.5	No Relaxation
2	Turbidity	IS : 3025: (P-10)1984, RA 2017	*BLQ(**LOQ-1.0)	NTU	1	5
3	Total Hardness (as CaCO3)	IS: 3025 (P-21): 2009, RA 2019	146	mg/l	200	600
4	Calcium (as Ca)	IS: 3025 (P- 40): 1991 RA 2019	38.6	mg/l	75	200
5	Total Alkalinity (as CaCO3)	IS: 3025 (P-23): 1986, RA 2019	120	mg/l	200	600
6	Chloride (as Cl)	IS: 3025 (P-32): 1988, RA 2019	55.9	mg/l	250	1000
7	Magnesium (as Mg)	IS: 3025 (P-46): 1994, RA 2019	12.07	mg/l	30	100
8	Total Dissolved Solids	IS :3025 (P-16): 1984, RA 2017	336	mg/l	500	2000
9	Sulphate (as SO4)	IS: 3025 (P-24): 1986, RA 2022	33.4	mg/l	200	400
10	Fluoride (as F)	APHA 23rd Edition ,4500FD 2017	0.62	mg/l	1.0	1.5
11	Nitrate (as NO3)	IS: 3025 (P-34): 1988	8.41	mg/l	45.0	No Relaxation
12	Iron (as Fe)	APHA 23rd Edition , 3111B.2017	0.21	mg/l	1.0	No Relaxation
13	Aluminium (as Al)	IS 3025 (P-55): 2003, RA 2019	*BLQ(**LOQ-0.03)	mg/l	0.03	0.2
14	Boron (as B)	APHA 23rd Edition, 4500B,2017	*BLQ(**LOQ-0.2)	mg/l	0.5	1.0
15	Total Chromium (as Cr)	APHA 23rd Edition 2017 3113 B, 2017	*BLQ(**LOQ-0.02)	mg/l	0.05	No Relaxation
16	Phenolic Compounds (C6H5OH)	APHA 23rd Edition 5530C 2017	*BLQ(**LOQ-0.001)	mg/l	0.001	0.002
17	Zinc (as Zn)	APHA 23rd Edition,3030D, 3113 B , 2017	0.30	mg/l	5.0	15.0

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TEST REPORT

VIBRANT
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TC-15227

Sample Number : VTL/W/07 Report No. : VTL/W/2410030007/A

S.No.	Test Parameters	Test Method	Results	Units	IS:10500-2012	
					Acceptable Limit	Permissible Limit
18	Copper (as Cu)	APHA 23rd Edition 3111B 2017	*BLQ(**LOQ-0.02)	mg/l	0.05	1.5
19	Manganese (as Mn)	APHA 23rd Edition, 3030D, 3111 B, 2017	*BLQ(**LOQ-0.05)	mg/l	0.1	0.3
20	Cadmium (as Cd)	APHA 23rd Edition, 3030D, 3113 B, 2017	*BLQ(**LOQ-0.002)	mg/l	0.003	No Relaxation
21	Lead (as Pb)	APHA 23rd Edition, 3030D, 3113 B,2017	*BLQ(**LOQ-0.005)	mg/l	0.01	No Relaxation
22	Selenium (as Se)	APHA 23rd Edition, 3114C, 2017	*BLQ(**LOQ-0.005)	mg/l	0.01	No Relaxation
23	Arsenic (as As)	APHA 23rd Edition, 3114C, 2017	*BLQ(**LOQ-0.005)	mg/l	0.01	0.05
24	Mercury (as Hg)	APHA 23rd edition, 3114C 2017	*BLQ(**LOQ-0.001)	mg/l	0.001	No Relaxation
25	Total Coliform	IS : 15185 : 2016	Absent	per 100 ml	Shall not be detectable in any 100 ml sample	--
26	E.Coli	IS : 15185 : 2016	Absent	per 100 ml	Shall not be detectable in any 100 ml sample	--
27	Free Residual Chlorine	IS 3025 (P-26):2021	*BLQ(**LOQ-0.2)	mg/l	0.2	1.0

*BLQ-Below Limit Of Quantification, **LOQ- Limit of Quantification

End of Report

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VIBRANT TECHNO LAB PRIVATE LIMITED JAIPUR

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TEST REPORT

VIBRANT
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Sample Number : VTL/W/07

Name & Address of the Party : M/s Jhabua Power Limited (A JV of NTPC LTD.)
Post Office - Attaria, Tehsil- Ghansore Seoni MP

Report No. : VTL/W/2410030007/B
Format No : 7.8 F-01
Party Reference No : 4300005689
Report Date : 10/10/2024
Period of Analysis : 03/10/2024-10/10/2024
Receipt Date : 03/10/2024
Sampling Date : 02/10/2024
Sampling Type : Grab
Sample Quantity : 2 Ltr.
Coordinates : --

Sample Description : Ground Water Sample
Sampling Location : Village - Barela
Sample Collected By : VTL Team
Preservation : Suitable Preservation
Method of sampling : IS :3025

S.No.	Test Parameters	Test Method	Results	Units	IS:10500-2012	
					Acceptable Limit	Permissible Limit
1	Colour	IS : 3025 (P-4)1983, :RA 2017	*BLQ(**LOQ-5.0)	Hazen	5	15
2	Odour	IS : 3025 (P-5) : RA 2018	Agreeable	--	Agreeable	Agreeable
3	Taste	IS :3025 (P-8): 1984 RA 2017	Agreeable	--	Agreeable	Agreeable
4	Cyanide (as CN)	APHA 23rd Edition ,4500D,2017	*BLQ(**LOQ-5.0)	mg/l	0.05	No Relaxation
5	Anionic Detergents (as MBAS)	APHA 23rd Edition , 5540C 2017	*BLQ(**LOQ-0.05)	mg/l	0.2	1.0

*BLQ-Below Limit Of Quantification, **LOQ- Limit of Quantification

End of Report

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TEST REPORT

VIBRANT
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TC-11227

Sample Number : VTL/W/08

Name & Address of the Party : M/s Jhabua Power Limited (A JV of NTPC LTD.)
Post Office - Attaria, Tehsil- Gharsore Seoni MP

ULR No. : TC112272400002144F
Report No. : VTL/W/2410030006/A
Format No : 7.8 F-01
Party Reference No : 4300005689
Report Date : 10/10/2024
Period of Analysis : 03/10/2024-10/10/2024
Receipt Date : 03/10/2024
Sampling Date : 02/10/2024
Sampling Type : Grab
Sample Quantity : 2 Ltr.
Coordinates : --

Sample Description : Ground Water Sample
Sampling Location : Village - Panarjhir
Sample Collected By : VTL Team
Preservation : Suitable Preservation
Method of sampling : IS :3025

S.No.	Test Parameters	Test Method	Results	Units	IS:10500-2012	
					Acceptable Limit	Permissible Limit
1	pH (at 25°C)	IS : 3025 (P-11) : 2022	7.33	--	6.5 to 8.5	No Relaxation
2	Turbidity	IS : 3025: (P-10)1984, RA 2017	*BLQ(**LOQ-1.0)	NTU	1	5
3	Total Hardness (as CaCO3)	IS: 3025 (P-21): 2009, RA 2019	162	mg/l	200	600
4	Calcium (as Ca)	IS: 3025 (P- 40): 1991 RA 2019	42.8	mg/l	75	200
5	Total Alkalinity (as CaCO3)	IS: 3025 (P-23): 1986, RA 2019	141	mg/l	200	600
6	Chloride (as Cl)	IS: 3025 (P-32): 1988, RA 2019	75.8	mg/l	250	1000
7	Magnesium (as Mg)	IS: 3025 (P-46): 1994, RA 2019	13.42	mg/l	30	100
8	Total Dissolved Solids	IS :3025 (P-16): 1984, RA 2017	388	mg/l	500	2000
9	Sulphate (as SO4)	IS: 3025 (P-24): 1986, RA 2022	49.5	mg/l	200	400
10	Fluoride (as F)	APHA 23rd Edition ,4500FD ,2017	0.73	mg/l	1.0	1.5
11	Nitrate (as NO3)	IS: 3025 (P-34): 1988	7.26	mg/l	45.0	No Relaxation
12	Iron (as Fe)	APHA 23rd Edition , 3111B,2017	0.31	mg/l	1.0	No Relaxation
13	Aluminium (as Al)	IS 3025 (P-55): 2003, RA 2019	*BLQ(**LOQ-0.03)	mg/l	0.03	0.2
14	Boron (as B)	APHA 23rd Edition, 4500B,2017	*BLQ(**LOQ-0.2)	mg/l	0.5	1.0
15	Total Chromium (as Cr)	APHA 23rd Edition 2017 3113 B, 2017	*BLQ(**LOQ-0.02)	mg/l	0.05	No Relaxation
16	Phenolic Compounds (C6H5OH)	APHA 23rd Edtion 5530C: 2017	*BLQ(**LOQ-0.001)	mg/l	0.001	0.002
17	Zinc (as Zn)	APHA 23rd Edition,3030D, 3113 B , 2017	0.40	mg/l	5.0	15.0

Checked by

RK Yadav
Lab Incharge
Authorized Signatory

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TEST REPORT

VIBRANT
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Sample Number : VTL/W/08

ULR No. : TC112272400000214 4F
Report No. : VTL/W/2410030008/A

S.No.	Test Parameters	Test Method	Results	Units	IS:10500-2012	
					Acceptable Limit	Permissible Limit
18	Copper (as Cu)	APHA 23rd Edition 3111B 2017	*BLQ(**LOQ-0.02)	mg/l	0.05	1.5
19	Manganese (as Mn)	APHA 23rd Edition, 3030D, 3111 B, 2017	*BLQ(**LOQ-0.05)	mg/l	0.1	0.3
20	Cadmium (as Cd)	APHA 23rd Edition, 3030D, 3113 B, 2017	*BLQ(**LOQ-0.002)	mg/l	0.003	No Relaxation
21	Lead (as Pb)	APHA 23rd Edition, 3030D, 3113 B,2017	*BLQ(**LOQ-0.005)	mg/l	0.01	No Relaxation
22	Selenium (as Se)	APHA 23rd Edition, 3114C, 2017	*BLQ(**LOQ-0.005)	mg/l	0.01	No Relaxation
23	Arsenic (as As)	APHA 23rd Edition, 3114C, 2017	*BLQ(**LOQ-0.005)	mg/l	0.01	0.05
24	Mercury (as Hg)	APHA 23rd edition, 3114C 2017	*BLQ(**LOQ-0.001)	mg/l	0.001	No Relaxation
25	Total Coliform	IS : 15185 : 2016	Absent	per 100 ml	Shall not be detectable in any 100 ml sample	--
26	E.Coli	IS : 15185 : 2016	Absent	per 100 ml	Shall not be detectable in any 100 ml sample	--
27	Free Residual Chlorine	IS 3025 (P-26):2021	*BLQ(**LOQ-0.2)	mg/l	0.2	1.0

*BLQ-Below Limit Of Quantification, **LOQ- Limit of Quantification

End of Report

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TEST REPORT

VIBRANT
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Sample Number : VTL/W/08

Name & Address of the Party : M/s Jhabua Power Limited (A JV of NTPC LTD.)
Post Office - Attaria, Tehsil- Ghansore Seoni MP

Report No. : VTL/W/2410030008/B
Format No : 7.8 F-01
Party Reference No : 4300005689
Report Date : 10/10/2024
Period of Analysis : 03/10/2024-10/10/2024

Sample Description : Ground Water Sample
Sampling Location : Village - Panarjhir
Sample Collected By : VTL Team
Preservation : Suitable Preservation
Method of sampling : IS :3025

Receipt Date : 03/10/2024
Sampling Date : 02/10/2024
Sampling Type : Grab
Sample Quantity : 2 Ltr.
Coordinates : --

S.No.	Test Parameters	Test Method	Results	Units	IS:10500-2012	
					Acceptable Limit	Permissible Limit
1	Colour	IS : 3025:(P-4)1983, :RA 2017	*BLQ(**LOQ-5.0)	Hazen	5	15
2	Odour	IS : 3025 (P-5) : RA 2018	Agreeable	--	Agreeable	Agreeable
3	Taste	IS :3025 (P-8): 1984 RA 2017	Agreeable	--	Agreeable	Agreeable
4	Cyanide (as CN)	APHA 23rd Edition ,4500D,2017	*BLQ(**LOQ-5.0)	mg/l	0.05	No Relaxation
5	Anionic Detergents (as MBAS)	APHA 23rd Edition , 5540C 2017	*BLQ(**LOQ-0.05)	mg/l	0.2	1.0

*BLQ-Below Limit Of Quantification, **LOQ- Limit of Quantification

End of Report

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TEST REPORT

VIBRANT
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TC-11227

Sample Number : VTL/W/09

Name & Address of the Party : M/s Jhabua Power Limited (A JV of NTPC LTD.)
Post Office - Attaria, Tehsil- Gharsore Seoni MP

ULR No. : TC112272400002145F
Report No. : VTL/W/2410030009/A
Format No : 7.8 F-01
Party Reference No : 4300005689
Report Date : 10/10/2024
Period of Analysis : 03/10/2024-10/10/2024
Receipt Date : 03/10/2024
Sampling Date : 02/10/2024
Sampling Type : Grab
Sample Quantity : 2 Ltr
Coordinates : --

Sample Description : **Water Sample**
Sampling Location : Village - Binaiki
Sample Collected By : VTL Team
Preservation : Suitable Preservation
Method of sampling : IS :3025

S.No.	Test Parameters	Test Method	Results	Units	IS:10500-2012	
					Acceptable Limit	Permissible Limit
1	pH (at 25°C)	IS : 3025 (P-11) : 2022	7.56	--	6.5 to 8.5	No Relaxation
2	Turbidity	IS : 3025: (P-10)1984, RA 2017	*BLQ(**LOQ-1.0)	NTU	1	5
3	Total Hardness (as CaCO3)	IS: 3025 (P-21): 2009, RA 2019	208	mg/l	200	600
4	Calcium (as Ca)	IS: 3025 (P- 40): 1991 RA 2019	56.5	mg/l	75	200
5	Total Alkalinity (as CaCO3)	IS: 3025 (P-23): 1986, RA 2019	184	mg/l	200	600
6	Chloride (as Cl)	IS: 3025 (P-32): 1988, RA 2019	70.3	mg/l	250	1000
7	Magnesium (as Mg)	IS: 3025 (P-46): 1994, RA 2019	16.28	mg/l	30	100
8	Total Dissolved Solids	IS :3025 (P-16): 1984, RA 2017	479	mg/l	500	2000
9	Sulphate (as SO4)	IS: 3025 (P-24): 1986, RA 2022	50.3	mg/l	200	400
10	Fluoride (as F)	APHA 23rd Edition ,4500FD :2017	0.78	mg/l	1.0	1.5
11	Nitrate (as NO3)	IS: 3025 (P-34): 1988	15.4	mg/l	45.0	No Relaxation
12	Iron (as Fe)	APHA 23rd Edition , 3111B,2017	0.27	mg/l	1.0	No Relaxation
13	Aluminium (as Al)	IS 3025 (P-55): 2003, RA 2019	*BLQ(**LOQ-0.03)	mg/l	0.03	0.2
14	Boron (as B)	APHA 23rd Edition, 4500B,2017	*BLQ(**LOQ-0.2)	mg/l	0.5	1.0
15	Total Chromium (as Cr)	APHA 23rd Edition 2017 3113 B, 2017	*BLQ(**LOQ-0.02)	mg/l	0.05	No Relaxation
16	Phenolic Compounds (C6H5OH)	APHA 23rd Edition 5530C: 2017	*BLQ(**LOQ-0.001)	mg/l	0.001	0.002
17	Zinc (as Zn)	APHA 23rd Edition,3030D, 3113 B , 2017	0.39	mg/l	5.0	15.0

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TEST REPORT

VIBRANT
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TC-11237

Sample Number : VTL/W/09

ULR No. : TC112272400002145F
Report No. : VTL/W/2410030009/A

S.No.	Test Parameters	Test Method	Results	Units	IS:10500-2012	
					Acceptable Limit	Permissible Limit
18	Copper (as Cu)	APHA 23rd Edition 3111B 2017	*BLQ(**LOQ-0.02)	mg/l	0.05	1.5
19	Manganese (as Mn)	APHA 23rd Edition, 3030D, 3111 B, 2017	*BLQ(**LOQ-0.05)	mg/l	0.1	0.3
20	Cadmium (as Cd)	APHA 23rd Edition, 3030D, 3113 B, 2017	*BLQ(**LOQ-0.002)	mg/l	0.003	No Relaxation
21	Lead (as Pb)	APHA 23rd Edition, 3030D, 3113 B,2017	*BLQ(**LOQ-0.005)	mg/l	0.01	No Relaxation
22	Selenium (as Se)	APHA 23rd Edition, 3114C, 2017	*BLQ(**LOQ-0.005)	mg/l	0.01	No Relaxation
23	Arsenic (as As)	APHA 23rd Edition, 3114C, 2017	*BLQ(**LOQ-0.005)	mg/l	0.01	0.05
24	Mercury (as Hg)	APHA 23rd edition, 3114C 2017	*BLQ(**LOQ-0.001)	mg/l	0.001	No Relaxation
25	Total Coliform	IS : 15185 : 2016	Absent	per 100 ml	Shall not be detectable in any 100 ml sample	--
26	E.Coli	IS : 15185 : 2016	Absent	per 100 ml	Shall not be detectable in any 100 ml sample	--
27	Free Residual Chlorine	IS 3025 (P-26) 2021	*BLQ(**LOQ-0.2)	mg/l	0.2	1.0

*BLQ-Below Limit Of Quantification, **LOQ- Limit of Quantification

End of Report

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TEST REPORT

VIBRANT
"Experience the unimaginable"

Sample Number : VTL/W/09

Name & Address of the Party : M/s Jhabua Power Limited (A JV of NTPC LTD.)
Post Office - Attaria, Tehsil- Gharsore Seoni MP

Report No. : VTL/W/2410030009/S
Format No : 7.8 F-01
Party Reference No : 4300005689
Report Date : 10/10/2024
Period of Analysis : 03/10/2024-10/10/2024
Receipt Date : 03/10/2024
Sampling Date : 02/10/2024
Sampling Type : Grab
Sample Quantity : 2 Ltr.
Coordinates : --

Sample Description : Water Sample
Sampling Location : Village - Binaiki
Sample Collected By : VTL Team
Preservation : Suitable Preservation
Method of sampling : IS :3025

S.No.	Test Parameters	Test Method	Results	Units	IS:10500-2012	
					Acceptable Limit	Permissible Limit
1	Colour	IS : 3025:(P-4)1983, :RA 2017	*BLQ(**LOQ-5.0)	Hazen	5	15
2	Odour	IS : 3025 (P-5) : RA 2018	Agreeable	--	Agreeable	Agreeable
3	Taste	IS :3025 (P-8): 1984 RA 2017	Agreeable	--	Agreeable	Agreeable
4	Cyanide (as CN)	APHA 23rd Edition 4500D 2017	*BLQ(**LOQ-5.0)	mg/l	0.05	No Relaxation
5	Anionic Detergents (as MBAS)	APHA 23rd Edition , 5540C 2017	*BLQ(**LOQ-0.05)	mg/l	0.2	1.0

*BLQ-Below Limit Of Quantification, **LOQ- Limit of Quantification

End of Report

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TEST REPORT

VIBRANT
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TC-11227

Sample Number : VTL/W/10
Name & Address of the Party : M/s Jhabua Power Limited (A JV of NTPC LTD.)
Post Office - Attaria, Tehsil- Ghansore Seoni MP

ULR No. : TC112272400002146F
Report No. : VTL/W/2410030010/A
Format No : 7.8 F-01
Party Reference No : 4300005689
Report Date : 10/10/2024
Period of Analysis : 03/10/2024-10/10/2024
Receipt Date : 03/10/2024
Sampling Date : 02/10/2024
Sampling Type : Grab
Sample Quantity : 2 Ltr
Coordinates : --

Sample Description : Water Sample
Sampling Location : Village - Durjanpur
Sample Collected By : VTL Team
Preservation : Suitable Preservation
Method of sampling : IS :3025

S.No.	Test Parameters	Test Method	Results	Units	IS:10500-2012	
					Acceptable Limit	Permissible Limit
1	pH (at 25°C)	IS : 3025 (P-11) : 2022	7.63	--	6.5 to 8.5	No Relaxation
2	Turbidity	IS : 3025: (P-10)1984, RA 2017	*BLQ(**LOQ-1.0)	NTU	1	5
3	Total Hardness (as CaCO3)	IS: 3025 (P-21): 2009, RA 2019	186	mg/l	200	600
4	Calcium (as Ca)	IS: 3025 (P- 40): 1991 RA 2019	54.8	mg/l	75	200
5	Total Alkalinity (as CaCO3)	IS: 3025 (P-23): 1986, RA 2019	157	mg/l	200	600
6	Chloride (as Cl)	IS: 3025 (P-32): 1988, RA 2019	70.3	mg/l	250	1000
7	Magnesium (as Mg)	IS: 3025 (P-46): 1994, RA 2019	11.97	mg/l	30	100
8	Total Dissolved Solids	IS :3025 (P-16): 1984, RA 2017	435	mg/l	500	2000
9	Sulphate (as SO4)	IS: 3025 (P-24): 1986, RA 2022	40.6	mg/l	200	400
10	Fluoride (as F)	APHA 23rd Edition ,4500FD :2017	0.81	mg/l	1.0	1.5
11	Nitrate (as NO3)	IS: 3025 (P-34): 1988	12.6	mg/l	45.0	No Relaxation
12	Iron (as Fe)	APHA 23rd Edition , 3111B,2017	0.30	mg/l	1.0	No Relaxation
13	Aluminium (as Al)	IS 3025 (P-55): 2003, RA 2019	*BLQ(**LOQ-0.03)	mg/l	0.03	0.2
14	Boron (as B)	APHA 23rd Edition, 4500B,2017	*BLQ(**LOQ-0.2)	mg/l	0.5	1.0
15	Total Chromium (as Cr)	APHA 23rd Edition 2017 3113 B, 2017	*BLQ(**LOQ-0.02)	mg/l	0.05	No Relaxation
16	Phenolic Compounds (C6H5OH)	APHA 23rd Edition 5530C: 2017	*BLQ(**LOQ-0.001)	mg/l	0.001	0.002
17	Zinc (as Zn)	APHA 23rd Edition,3030D, 3113 B , 2017	0.43	mg/l	5.0	15.0

Checked by

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TEST REPORT

VIBRANT
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TC-11227

Sample Number : VTL/W/10

ULR No. : TC112272400000214 6F
Report No. : VTL/W/2410030010/A

S.No.	Test Parameters	Test Method	Results	Units	IS:10500-2012	
					Acceptable Limit	Permissible Limit
18	Copper (as Cu)	APHA 23rd Edition 3111B 2017	*BLQ(**LOQ-0.02)	mg/l	0.05	1.5
19	Manganese (as Mn)	APHA 23rd Edition, 3030D, 3111 B, 2017	*BLQ(**LOQ-0.05)	mg/l	0.1	0.3
20	Cadmium (as Cd)	APHA 23rd Edition, 3030D, 3113 B, 2017	*BLQ(**LOQ-0.002)	mg/l	0.003	No Relaxation
21	Lead (as Pb)	APHA 23rd Edition, 3030D, 3113 B,2017	*BLQ(**LOQ-0.005)	mg/l	0.01	No Relaxation
22	Selenium (as Se)	APHA 23rd Edition, 3114C, 2017	*BLQ(**LOQ-0.005)	mg/l	0.01	No Relaxation
23	Arsenic (as As)	APHA 23rd Edition, 3114C, 2017	*BLQ(**LOQ-0.005)	mg/l	0.01	0.05
24	Mercury (as Hg)	APHA 23rd edition, 3114C 2017	*BLQ(**LOQ-0.001)	mg/l	0.001	No Relaxation
25	Total Coliform	IS : 15185 : 2016	Absent	per 100 ml	Shall not be detectable in any 100 ml sample	--
26	E.Coli	IS : 15185 : 2016	Absent	per 100 ml	Shall not be detectable in any 100 ml sample	--
27	Free Residual Chlorine	IS 3025 (P-26):2021	*BLQ(**LOQ-0.2)	mg/l	0.2	1.0

*BLQ-Below Limit Of Quantification, **LOQ- Limit of Quantification

End of Report

Checked by

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Term & conditions Apply

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TEST REPORT

VIBRANT
"Experience the unimaginable"

Sample Number : VTL/W/10

Name & Address of the Party : M/s Jhabua Power Limited (A JV of NTPC LTD.)
Post Office - Attaria, Tehsil- Ghansore Seoni MP

Report No.	: VTL/W/2410030010/B
Format No	: 7.6 F-01
Party Reference No	: 4300005689
Report Date	: 10/10/2024
Period of Analysis	: 03/10/2024-10/10/2024
Receipt Date	: 03/10/2024
Sampling Date	: 02/10/2024
Sampling Type	: Grab
Sample Quantity	: 2 Ltr.
Coordinates	: --

Sample Description	: Water Sample
Sampling Location	: Village - Durjanpur
Sample Collected By	: VTL Team
Preservation	: Suitable Preservation
Method of sampling	: IS :3025

S.No.	Test Parameters	Test Method	Results	Units	IS:10500-2012	
					Acceptable Limit	Permissible Limit
1	Colour	IS : 3025:(P-4)1983, :RA 2017	*BLQ(**LOQ-5.0)	Hazen	5	15
2	Odour	IS : 3025 (P-5) : RA 2018	Agreeable	--	Agreeable	Agreeable
3	Taste	IS :3025 (P-8): 1984 RA 2017	Agreeable	--	Agreeable	Agreeable
4	Cyanide (as CN)	APHA 23rd Edition ,4500D,2017	*BLQ(**LOQ-5.0)	mg/l	0.05	No Relaxation
5	Anionic Detergents (as MBAS)	APHA 23rd Edition , 5540C 2017	*BLQ(**LOQ-0.05)	mg/l	0.2	1.0

*BLQ-Below Limit Of Quantification, **LOQ- Limit of Quantification

End of Report

Checked by

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TEST REPORT

VIBRANT
"Experience the unimaginable"

Sample Number : VTL/W/11

Name & Address of the Party : M/s Jhabua Power Limited (A JV of NTPC LTD.)
Post Office - Attara, Tehsil- Ghansore Seoni MP

ULR No. : TC112272400002147F
Report No. : VTL/W/2410030011/A
Format No : 7.8 F-01
Party Reference No : 4300009589
Report Date : 10/10/2024
Period of Analysis : 03/10/2024-10/10/2024
Receipt Date : 03/10/2024
Sampling Date : 02/10/2024
Sampling Type : Grab
Sample Quantity : 2 Ltr.
Coordinates : --

Sample Description : Water Sample
Sampling Location : Village - Gunen
Sample Collected By : VTL Team
Preservation : Suitable Preservation
Method of sampling : IS 3025

S.No.	Test Parameters	Test Method	Results	Units	IS:10500-2012	
					Acceptable Limit	Permissible Limit
1	pH (at 25°C)	IS : 3025 (P-11) : 2022	7.46	--	6.5 to 8.5	No Relaxation
2	Turbidity	IS : 3025: (P-10)1984, RA 2017	*BLQ(**LOQ-1.0)	NTU	1	5
3	Total Hardness (as CaCO3)	IS: 3025 (P-21): 2009, RA 2019	178	mg/l	200	600
4	Calcium (as Ca)	IS: 3025 (P- 40): 1991 RA 2019	52.3	mg/l	75	200
5	Total Alkalinity (as CaCO3)	IS: 3025 (P-23): 1986, RA 2019	143	mg/l	200	600
6	Chloride (as Cl)	IS: 3025 (P-32): 1988, RA 2019	66.8	mg/l	250	1000
7	Magnesium (as Mg)	IS: 3025 (P-46): 1994, RA 2019	11.54	mg/l	30	100
8	Total Dissolved Solids	IS :3025 (P-16): 1984, RA 2017	396	mg/l	500	2000
9	Sulphate (as SO4)	IS: 3025 (P-24): 1986, RA 2022	44.8	mg/l	200	400
10	Fluoride (as F)	APHA 23rd Edition ,4500FD :2017	0.83	mg/l	1.0	1.5
11	Nitrate (as NO3)	IS: 3025 (P-34): 1988	13.5	mg/l	45.0	No Relaxation
12	Iron (as Fe)	APHA 23rd Edition , 3111B,2017	0.35	mg/l	1.0	No Relaxation
13	Aluminium (as Al)	IS 3025 (P-55): 2003, RA 2019	*BLQ(**LOQ-0.03)	mg/l	0.03	0.2
14	Boron (as B)	APHA 23rd Edition, 4500B,2017	*BLQ(**LOQ-0.2)	mg/l	0.5	1.0
15	Total Chromium (as Cr)	APHA 23rd Edition 2017 3113 B, 2017	*BLQ(**LOQ-0.02)	mg/l	0.05	No Relaxation
16	Phenolic Compounds (C6H5OH)	APHA 23rd Edition 5530C: 2017	*BLQ(**LOQ-0.001)	mg/l	0.001	0.002
17	Zinc (as Zn)	APHA 23rd Edition,3030D, 3113 B , 2017	0.49	mg/l	5.0	15.0

Checked by

RK Yadav
Lab Incharge
Authorized Signatory

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TEST REPORT

VIBRANT
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TC-11227

Sample Number : VTL/W/11

ULR No. : TC112272400000214 7F
Report No. : VTL/W/2410030011/A

S.No.	Test Parameters	Test Method	Results	Units	IS:10500-2012	
					Acceptable Limit	Permissible Limit
18	Copper (as Cu)	APHA 23rd Edition 3111B 2017	*BLQ(**LOQ-0.02)	mg/l	0.05	1.5
19	Manganese (as Mn)	APHA 23rd Edition, 3030D, 3111 B, 2017	*BLQ(**LOQ-0.05)	mg/l	0.1	0.3
20	Cadmium (as Cd)	APHA 23rd Edition, 3030D, 3113 B, 2017	*BLQ(**LOQ-0.002)	mg/l	0.003	No Relaxation
21	Lead (as Pb)	APHA 23rd Edition, 3030D, 3113 B,2017	*BLQ(**LOQ-0.005)	mg/l	0.01	No Relaxation
22	Selenium (as Se)	APHA 23rd Edition, 3114C, 2017	*BLQ(**LOQ-0.005)	mg/l	0.01	No Relaxation
23	Arsenic (as As)	APHA 23rd Edition, 3114C, 2017	*BLQ(**LOQ-0.005)	mg/l	0.01	0.05
24	Mercury (as Hg)	APHA 23rd edition, 3114C 2017	*BLQ(**LOQ-0.001)	mg/l	0.001	No Relaxation
25	Total Coliform	IS : 15185 : 2016	Absent	per 100 ml	Shall not be detectable in any 100 ml sample	--
26	E.Coli	IS : 15185 : 2016	Absent	per 100 ml	Shall not be detectable in any 100 ml sample	--
27	Free Residual Chlorine	IS 3025 (P-26):2021	*BLQ(**LOQ-0.2)	mg/l	0.2	1.0

*BLQ-Below Limit Of Quantification, **LOQ- Limit of Quantification

End of Report

Checked by

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Lab Incharge
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TEST REPORT

VIBRANT
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Sample Number : VTL/W/11

Name & Address of the Party : M/s Jhabua Power Limited (A JV of NTPC LTD.)
Post Office - Attaria, Tehsil- Ghansore Seoni MP

Report No. : VTL/W/2410030011/B
Format No : 7.8 F-01
Party Reference No : 4300005689
Report Date : 10/10/2024
Period of Analysis : 03/10/2024-10/10/2024
Receipt Date : 03/10/2024
Sampling Date : 02/10/2024
Sampling Type : Grab
Sample Quantity : 2 Ltr.
Coordinates : --

Sample Description : Water Sample
Sampling Location : Village - Guneri
Sample Collected By : VTL Team
Preservation : Suitable Preservation
Method of sampling : IS :3025

S.No.	Test Parameters	Test Method	Results	Units	IS:10500-2012	
					Acceptable Limit	Permissible Limit
1	Colour	IS : 3025:(P-4)1983, :RA 2017	*BLQ(**LOQ-5.0)	Hazen	5	15
2	Odour	IS : 3025 (P-5) : RA 2018	Agreeable	--	Agreeable	Agreeable
3	Taste	IS :3025 (P-8): 1984 RA 2017	Agreeable	--	Agreeable	Agreeable
4	Cyanide (as CN)	APHA 23rd Edition ,4500D,2017	*BLQ(**LOQ-5.0)	mg/l	0.05	No Relaxation
5	Anionic Detergents (as MBAS)	APHA 23rd Edition , 5540C 2017	*BLQ(**LOQ-0.05)	mg/l	0.2	1.0

*BLQ-Below Limit Of Quantification, **LOQ- Limit of Quantification

End of Report

Checked by

RK Yadav
Lab Incharge
Authorized Signatory

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TEST REPORT

VIBRANT
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Sample Number : VTL/W/12

Name & Address of the Party : M/s Jhabua Power Limited (A JV of NTPC LTD.)
Post Office - Attaria, Tehsil- Ghansore Seoni MP

ULR No. : TC112272400002148F
Report No. : VTL/W/2410030012/A
Format No : 7.8 F-01
Party Reference No : 4300005689
Report Date : 10/10/2024
Period of Analysis : 03/10/2024-10/10/2024
Receipt Date : 03/10/2024
Sampling Date : 02/10/2024
Sampling Type : Grab
Sample Quantity : 2 Ltr.
Coordinates : --

Sample Description : Water Sample
Sampling Location : Village - Dola
Sample Collected By : VTL Team
Preservation : Suitable Preservation
Method of sampling : IS :3025

S.No.	Test Parameters	Test Method	Results	Units	IS:10500-2012	
					Acceptable Limit	Permissible Limit
1	pH (at 25°C)	IS : 3025 (P-11) : 2022	7.51	--	6.5 to 8.5	No Relaxation
2	Turbidity	IS : 3025: (P-10)1984, RA 2017	*BLQ(**LOQ-1.0)	NTU	1	5
3	Total Hardness (as CaCO3)	IS: 3025 (P-21): 2009, RA 2019	234	mg/l	200	600
4	Calcium (as Ca)	IS: 3025 (P- 40): 1991 RA 2019	70.63	mg/l	75	200
5	Total Alkalinity (as CaCO3)	IS: 3025 (P-23): 1986, RA 2019	214	mg/l	200	600
6	Chloride (as Cl)	IS: 3025 (P-32): 1988, RA 2019	79.5	mg/l	250	1000
7	Magnesium (as Mg)	IS: 3025 (P-46): 1994, RA 2019	14.04	mg/l	30	100
8	Total Dissolved Solids	IS :3025 (P-16): 1984, RA 2017	478	mg/l	500	2000
9	Sulphate (as SO4)	IS: 3025 (P-24): 1986, RA 2022	48.6	mg/l	200	400
10	Fluoride (as F)	APHA 23rd Edition ,4500FD :2017	0.87	mg/l	1.0	1.5
11	Nitrate (as NO3)	IS: 3025 (P-34): 1988	18.5	mg/l	45.0	No Relaxation
12	Iron (as Fe)	APHA 23rd Edition , 3111B,2017	0.33	mg/l	1.0	No Relaxation
13	Aluminium (as Al)	IS 3025 (P-55): 2003, RA 2019	*BLQ(**LOQ-0.03)	mg/l	0.03	0.2
14	Boron (as B)	APHA 23rd Edition, 4500B,2017	*BLQ(**LOQ-0.2)	mg/l	0.5	1.0
15	Total Chromium (as Cr)	APHA 23rd Edition 2017 3113 B, 2017	*BLQ(**LOQ-0.02)	mg/l	0.05	No Relaxation
16	Phenolic Compounds (C6H5OH)	APHA 23rd Edition 5530C: 2017	*BLQ(**LOQ-0.001)	mg/l	0.001	0.002
17	Zinc (as Zn)	APHA 23rd Edition,3030D, 3113 B , 2017	0.50	mg/l	5.0	15.0

Checked by

RK Yadav
Lab Incharge
Authorized Signatory

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TEST REPORT

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TC-11227

Sample Number : VTL/W/12

ULR No. : TC112272400000214 8F
Report No. : VTL/W/24!0030012/A

S.No.	Test Parameters	Test Method	Results	Units	IS:10500-2012	
					Acceptable Limit	Permissible Limit
18	Copper (as Cu)	APHA 23rd Edition 3111B 2017	*BLQ(**LOQ-0.02)	mg/l	0.05	1.5
19	Manganese (as Mn)	APHA 23rd Edition, 3030D, 3111 B, 2017	*BLQ(**LOQ-0.05)	mg/l	0.1	0.3
20	Cadmium (as Cd)	APHA 23rd Edition, 3030D, 3113 B, 2017	*BLQ(**LOQ-0.002)	mg/l	0.003	No Relaxation
21	Lead (as Pb)	APHA 23rd Edition, 3030D, 3113 B,2017	*BLQ(**LOQ-0.005)	mg/l	0.01	No Relaxation
22	Selenium (as Se)	APHA 23rd Edition, 3114C, 2017	*BLQ(**LOQ-0.005)	mg/l	0.01	No Relaxation
23	Arsenic (as As)	APHA 23rd Edition, 3114C, 2017	*BLQ(**LOQ-0.005)	mg/l	0.01	0.05
24	Mercury (as Hg)	APHA 23rd edition, 3114C 2017	*BLQ(**LOQ-0.001)	mg/l	0.001	No Relaxation
25	Total Coliform	IS : 15185 : 2016	Absent	per 100 ml	Shall not be detectable in any 100 ml sample	--
26	E.Coli	IS : 15185 : 2016	Absent	per 100 ml	Shall not be detectable in any 100 ml sample	--
27	Free Residual Chlorine	IS 3025 (P-26):2021	*BLQ(**LOQ-0.2)	mg/l	0.2	1.0

*BLQ-Below Limit Of Quantification, **LOQ- Limit of Quantification

End of Report

Checked by

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Lab Incharge
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www.vibranttechnolab.com

TEST REPORT

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Sample Number : VTL/W/12

Name & Address of the Party : M/s Jhabua Power Limited (A JV of NTPC LTD.)
Post Office - Attaria, Tehsil- Ghahsore Seoni MP

Report No. : VTL/W/24100300012/B
Format No : 7.8 F-01
Party Reference No : 4300005669
Report Date : 10/10/2024
Period of Analysis : 03/10/2024-10/10/2024
Receipt Date : 03/10/2024
Sampling Date : 02/10/2024
Sampling Type : Grab
Sample Quantity : 2 Ltr.
Coordinates : --

Sample Description : Water Sample
Sampling Location : Village - Dola
Sample Collected By : VTL Team
Preservation : Suitable Preservation
Method of sampling : IS :3025

S.No.	Test Parameters	Test Method	Results	Units	IS:10500-2012	
					Acceptable Limit	Permissible Limit
1	Colour	IS : 3025:(P-4)1983, RA 2017	*BLQ(**LOQ-5.0)	Hazen	5	15
2	Odour	IS : 3025 (P-5) : RA 2018	Agreeable	--	Agreeable	Agreeable
3	Taste	IS :3025 (P-8): 1984 RA 2017	Agreeable	--	Agreeable	Agreeable
4	Cyanide (as CN)	APHA 23rd Edition , 4500D,2017	*BLQ(**LOQ-5.0)	mg/l	0.05	No Relaxation
5	Anionic Detergents (as MBAS)	APHA 23rd Edition , 5540C 2017	*BLQ(**LOQ-0.05)	mg/l	0.2	1.0

*BLQ-Below Limit Of Quantification, **LOQ- Limit of Quantification

End of Report

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TEST REPORT

VIBRANT
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TC-11227

Sample Number : VTL/W/13
Name & Address of the Party : M/s Jhabua Power Limited (A JV of NTPC LTD.)
Post Office - Attaria, Tehsil- Ghansore Seoni MP

ULR No. : TC112272400002149F
Report No. : VTL/W/2410030013/A
Format No : 7.8 F-01
Party Reference No : 4300005689
Report Date : 10/10/2024
Period of Analysis : 03/10/2024-10/10/2024
Receipt Date : 03/10/2024
Sampling Date : 02/10/2024
Sampling Type : Grab
Sample Quantity : 2 Ltr.
Coordinates : --

Sample Description : Water Sample
Sampling Location : Village - Gorakhpur
Sample Collected By : VTL Team
Preservation : Suitable Preservation
Method of sampling : IS :3025

S.No.	Test Parameters	Test Method	Results	Units	IS:10500-2012	
					Acceptable Limit	Permissible Limit
1	pH (at 25°C)	IS : 3025 (P-11) : 2022	7.68	--	6.5 to 8.5	No Relaxation
2	Turbidity	IS : 3025: (P-10)1984, RA 2017	*BLQ(**LOQ-1.0)	NTU	1	5
3	Total Hardness (as CaCO3)	IS: 3025 (P-21): 2009, RA 2019	247	mg/l	200	600
4	Calcium (as Ca)	IS: 3025 (P- 40): 1991 RA 2019	67.52	mg/l	75	200
5	Total Alkalinity (as CaCO3)	IS: 3025 (P-23): 1986, RA 2019	192	mg/l	200	600
6	Chloride (as Cl)	IS: 3025 (P-32): 1988, RA 2019	70.5	mg/l	250	1000
7	Magnesium (as Mg)	IS: 3025 (P-46): 1994, RA 2019	19.08	mg/l	30	100
8	Total Dissolved Solids	IS :3025 (P-16): 1984, RA 2017	420	mg/l	500	2000
9	Sulphate (as SO4)	IS: 3025 (P-24): 1986, RA 2022	35.2	mg/l	200	400
10	Fluoride (as F)	APHA 23rd Edition ,4500FD :2017	0.69	mg/l	1.0	1.5
11	Nitrate (as NO3)	IS: 3025 (P-34): 1988	15.3	mg/l	45.0	No Relaxation
12	Iron (as Fe)	APHA 23rd Edition , 3111B,2017	0.36	mg/l	1.0	No Relaxation
13	Aluminium (as Al)	IS 3025 (P-55): 2003, RA 2019	*BLQ(**LOQ-0.03)	mg/l	0.03	0.2
14	Boron (as B)	APHA 23rd Edition, 4500B,2017	*BLQ(**LOQ-0.2)	mg/l	0.5	1.0
15	Total Chromium (as Cr)	APHA 23rd Edition 2017 3113 B, 2017	*BLQ(**LOQ-0.02)	mg/l	0.05	No Relaxation
16	Phenolic Compounds (C6H5OH)	APHA 23rd Edition 5530C 2017	*BLQ(**LOQ-0.001)	mg/l	0.001	0.002
17	Zinc (as Zn)	APHA 23rd Edition,3030D, 3113 B , 2017	0.45	mg/l	5.0	15.0

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TEST REPORT

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Sample Number : VTL/W/13

ULR No. : TC112272400002149F
Report No. : VTL/W/2410030013/A

S.No.	Test Parameters	Test Method	Results	Units	IS:10500-2012	
					Acceptable Limit	Permissible Limit
18	Copper (as Cu)	APHA 23rd Edition 3111B 2017	*BLQ(**LOQ-0.02)	mg/l	0.05	1.5
19	Manganese (as Mn)	APHA 23rd Edition, 3030D, 3111 B, 2017	*BLQ(**LOQ-0.05)	mg/l	0.1	0.3
20	Cadmium (as Cd)	APHA 23rd Edition, 3030D, 3113 B, 2017	*BLQ(**LOQ-0.002)	mg/l	0.003	No Relaxation
21	Lead (as Pb)	APHA 23rd Edition, 3030D, 3113 B,2017	*BLQ(**LOQ-0.005)	mg/l	0.01	No Relaxation
22	Selenium (as Se)	APHA 23rd Edition, 3114C, 2017	*BLQ(**LOQ-0.005)	mg/l	0.01	No Relaxation
23	Arsenic (as As)	APHA 23rd Edition, 3114C, 2017	*BLQ(**LOQ-0.005)	mg/l	0.01	0.05
24	Mercury (as Hg)	APHA 23rd edition, 3114C 2017	*BLQ(**LOQ-0.001)	mg/l	0.001	No Relaxation
25	Total Coliform	IS : 15185 : 2016	Absent	per 100 ml	Shall not be detectable in any 100 ml sample	--
26	E.Coli	IS : 15185 : 2016	Absent	per 100 ml	Shall not be detectable in any 100 ml sample	--
27	Free Residual Chlorine	IS 3025 (P-26):2021	*BLQ(**LOQ-0.2)	mg/l	0.2	1.0

*BLQ-Below Limit Of Quantification, **LOQ- Limit of Quantification

End of Report

Checked by

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TEST REPORT

VIBRANT
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Sample Number : VTL/W/13

Name & Address of the Party : M/s Jhabua Power Limited (A JV of NTPC LTD.)
Post Office - Attaria, Tehsil- Ghansore Seoni MP

Report No. : VTL/W/24100300013/B
Format No : 7.8 F-01
Party Reference No : 4300005689
Report Date : 10/10/2024
Period of Analysis : 03/10/2024-10/10/2024
Receipt Date : 03/10/2024
Sampling Date : 02/10/2024
Sampling Type : Grab
Sample Quantity : 2 Ltr.
Coordinates : --

Sample Description : Water Sample
Sampling Location : Village - Gorakhpur
Sample Collected By : VTL Team
Preservation : Suitable Preservation
Method of sampling : IS :3025

S.No.	Test Parameters	Test Method	Results	Units	IS:10500-2012	
					Acceptable Limit	Permissible Limit
1	Colour	IS : 3025 (P-4)1983, :RA 2017	*BLQ(**LOQ-5.0)	Hazen	5	15
2	Odour	IS : 3025 (P-5) : RA 2018	Agreeable	--	Agreeable	Agreeable
3	Taste	IS :3025 (P-8): 1984 RA 2017	Agreeable	--	Agreeable	Agreeable
4	Cyanide (as CN)	APHA 23rd Edition ,4500D,2017	*BLQ(**LOQ-5.0)	mg/l	0.05	No Relaxation
5	Anionic Detergents (as MBAS)	APHA 23rd Edition , 5540C 2017	*BLQ(**LOQ-0.05)	mg/l	0.2	1.0

*BLQ-Below Limit Of Quantification, **LOQ- Limit of Quantification

End of Report

Checked by

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Lab Incharge
Authorized Signatory

Approved & Certified EPA 1986 Recognised, ISO:9001 and OHSAS:45001 Certified

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Annexure –2

Authentication letter of CGWA/CGWB

No.1-8/NCR/TS (CGWA)-
Government of India
Central Ground Water Board
North Central Region
Block-1, 4th Floor, Paryavas Bhawan
38 Arera Hills, Jail Road
Bhopal – 462 011
Date 08-10-2014

To

M/s Jhabua Power Ltd..
6th & 6th Floor, Vatika City Point
M.G.Road,
Gurgaon- 122002

Sub: Rain Water Harvesting proposal for the proposed Jhabua Power Project at villages Barela & Gorakpur, Tehsil-Ghansour, District-Seoni.

Ref: Your letters dated 02/01/14, 24/04/2014 & 17/07/2014.

With reference to the above, the report on" Hydrogeological Investigation for Rainwater Harvesting and Artificial Recharge at Jhabua Power Ltd, Barela, District Seoni, Madhya Pradesh" for seeking guidelines on construction of Rainwater harvesting system as per item xvi of MOEF letter No.J-13012/105/2008-iA.ii(T) dated 17-02-2010, the report was examined. The following observations are made.

1. The implementation of rainwater harvesting structures at the Jhabua Power Project at villages Barela & Gorakpur, Tehsil-Ghansour, District-Seoni shall be carried out in accordance with the design mentioned in the report.
2. While implementation of the recharge structures, necessary intake capacity tests of the recharge structures may be carried out to ensure the efficacy of the constructed structures. The lithologs of the recharge wells and the data of intake capacity tests may be submitted to CGWB, NCR, Bhopal.
3. Firm at its own cost shall install piezometers at suitable locations for ground water monitoring in the project area on regular basis (once in a month). The ground water monitoring data may be submitted on quarterly basis to the office of CGWB, NCR, Bhopal.

4. The ground water quality in and around the project area should be monitored twice in each year both during pre-monsoon and post-monsoon period and the data submitted to this office regularly.
5. The compliance report and photographs of recharge structures after completion of the same are to be furnished to CGWB, NCR, Bhopal for verification.
6. If there is any abstraction of ground water for the project at any stage, it is manadatory to obtain NOC from CGWA.
7. The firm shall comply with all the directions of CGWA from time to time with respect to recharge of ground water in and around the project area.

Based on the report, construction of the proposed rain water harvesting and artificial recharge structures in the project area is recommended, subject to the above mentioned conditions.

Yours Faithfully

(Parvinder Singh)
Regional Director

Copy for information to:

1. The Member Secretary, Central Ground Water Authority, West Block-2, Wing-3, Sector-1, R.K.Puram, New Delhi-110066.
2. The Director, Ministry of Environment & Forest, Government of India, Paryavaran Bhawan, CGO Complex, Lodi Road, New Delhi 110003.

(Parvinder Singh)
Regional Director

Annexure -3

Analysis Report of Ash pond effluent

TEST REPORT

VIBRANT
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Sample Number : VTL/WW/08

M/s Jhabua Power Limited (A JV of NTPC LTD.)
Post Office - Attaria, Tehsil- Ghansore Seoni MP

Name & Address of the Party :

Sample Description : Waste Water
Sampling Location : Ash Pond Effluent
Sample Collected By : VTL Team
Coordinates : --

ULR No. : TC112272400000213 4F
Report No. : VTL/WW/2410030006/A
Format No : 7.8 F-01
Party Reference No : 4300005689
Report Date : 10/10/2024
Period of Analysis : 03/10/2024-10/10/2024
Receipt Date : 03/10/2024
Sampling Date : 02/10/2024
Parameter Required : As per work order

S.No.	Test Parameters	Test Method	Result	Unit	Limits
1	pH	IS: 3025 (P-11): 2022	7.42	-	5.5 to 9.0
2	Total Suspended Solids (TSS)	IS: 3025 (P-17): 2022	29.42	mg/l	100
3	Oil & Grease	IS:3025 (P-39): 2021	*BLQ(**LOQ-4.0)	mg/l	10
4	Lead (as Pb)	APHA 23rd Edition-3030 D, 3113 B, 2017	*BLQ(**LOQ-0.1)	mg/l	0.1
5	Chromium (as Cr)	APHA 23rd Edition 3113 B, 2017	0.29	mg/l	2
6	Arsenic (as As)	APHA 23rd Edition-3114C, 2017	*BLQ(**LOQ-0.05)	mg/l	0.2
7	Mercury (as Hg)	APHA 23rd Edition-3114 C, 2017	*BLQ(**LOQ-0.05)	mg/l	0.01

*BLQ-Below Limit OF Quantification, **LOQ- Limit Of Detection

End of Report

Checked by

RK Yadav
Lab Incharge
Authorized Signatory

Approved & Certified EPA 1986 Recognised, ISO:9001 and OHSAS:45001 Certified

Term & conditions PTO

Vibrant Techno Lab Pvt. Ltd.
SC-40, 3rd Floor, Narayan Vihar S, Ajmer Road, Jaipur Raj. 302020
9929108691, 9810205356, 8005707098, 9549956601
0141-2954638
bd@vibranttechnolab.com
www.vibranttechnolab.com

Annexure -4

The radioactivity content study in coal & Fly ash

BOARD OF RADIATION AND ISOTOPE TECHNOLOGY
GOVERNMENT OF INDIA - DEPARTMENT OF ATOMIC ENERGY

TEL: 022-27867413
TELE-FAX: 022-27867414
E-mail: ralvashi@britatom.gov.in
WEBSITE: www.brabtom.gov.in

Radioanalytical Laboratory

BRIT-BARC Vashi Complex
Navi Mumbai - 400 703

INVOICE

Invoice No. : RAL/196/19-20

12/04/2019

To

C-RAL/2782
M/S. JHABUA POWER LIMITED
VILLAGE-BARELA, GORAKHPUR,
POST OFFICE-ATTARIA, TEHSIL-GHANSORE
SEONI - 480997
Cust. GSTIN: 23AABCK3364R1Z7

Sample Reg No. : D-632-19

BRIT GSTIN: 27AAAGB0360B1Z8

Order Ref: JPL/ENV/JAN/02 dated 10/01/2019

Description	No. of Tests per Sample	Rate per Test (Rs.)	No. of Samples	Amount (Rs.)
Measurement and certification of Radioactivity content in commodities	4	3400.00	2	27200.00
			(SAC : 998346) IGST @ 18.00%	4896.00
			Total Amount	32096

Bank Details for Electronic/DD Payments:

Name of Account Holder :	Pay & Accounts Officer, Board of Radiation and Isotope Technology
Email Id :	pao@britatom.gov.in, aaocs@britatom.gov.in, ralvashi@britatom.gov.in
Bank Name :	State Bank of India
Branch Name & Code :	BARC Branch, Trombay, Mumbai - 85 Code. 0001268 (Tel No.: 022-25592701)
Account No. :	303 943 372 26
IFSC Code :	SBIN 0001268
Account Type :	BRIT Parking Account
Bankers MICR Code :	400 002 006 (BARC Branch)
Demand Draft :	**in favor of Accounts Officer, BRIT payable at Mumbai**

Note

1. No income tax is deductable under section 196 of IT act, 1961 on any payment made to Board of Radiation and Isotope Technology (BRIT), since BRIT is under Department of Atomic Energy, Government of India.

2. In case of Electronic payment, you are requested to provide invoice no. and customer name on the transaction slip for identification.

देविका. के / Devika. K.
वैज्ञानिक अधिकारी / Scientific Officer
रेडियोविश्लेषक प्रयोगशाला / Radioanalytical Laboratory, BRIT
विकिरण एवं आइसोटोप प्रौद्योगिकी बोर्ड
Board of Radiation & Isotope Technology.
सेक्टर / Sector-20, वाशी संकुल / Vashi Complex
नवी मुंबई / Navi Mumbai - 400 703

क्रम सं. / SL. NO : A372 A 37134

ब्रिट/ बीएआरसी वाशी कॉम्प्लेक्स,
BRIT/ BARC Vashi Complex,
सेक्टर-20, वाशी/ Sec-20, Vashi,
नवी मुंबई/ Navi Mumbai-400 703
www.brit.barc.gov.in

भारत सरकार / GOVERNMENT OF INDIA

परमाणु ऊर्जा विभाग / DEPARTMENT OF ATOMIC ENERGY

विकिरण एवं आइसोटोप प्रौद्योगिकी बोर्ड / BOARD OF RADIATION & ISOTOPE TECHNOLOGY

रेडियोसक्रियता परीक्षण प्रमाण-पत्र / RADIOACTIVITY TEST CERTIFICATE

RADIOANALYTICAL LABORATORY

Ref: BRIT/RAL/D/632-39/MISC/530-37/18-19 **FEB 28, 2019**

TO,
M/S. JHABUA POWER LIMITED
VILLAGE -BARELA, POST-ATARIA,
TEHSIL-GHANSORE, DIST-SEONI, PIN 480997
MADHYA PRADESH

This is regarding the " **LINKAGE COAL AND FLYASH** " samples submitted by you vide letter ref no. JPL/ENV/JAN/02 dated 10.01.2019 for radioactivity analysis

SL.NO.	SAMPLE DESCRIPTION	DATE OF SAMPLING	TOTAL BULK QUANTITY FROM WHICH SAMPLE IS DRAWN
1	LINKAGE COAL FOR 1X600 MW COAL BASED THERMAL POWER PLANT M/S JHABUA POWER LIMITED	10.01.2019	25000 MT
2	FLY ASH FROM 1X600 MW COAL BASED THERMAL POWER PLANT M/S. JHABUA POWER LIMITED	10.01.2019	2300 MT

Date of receipt of sample : 17.01.2019 **Date of completion of test : 20.02 2019**

The samples were analysed for U-238, Ra-226, Th-232, & K-40 radioactivity content and the values obtained are as follows:

SR NO	SAMPLE DETAILS	U-238 (Bq/Kg)	Ra-226 (Bq/Kg)	Th-232 (Bq/Kg)	K-40 (Bq/Kg)
1	LINKAGE COAL	44 ± 1.0	49.8 ± 2.8	60 ± 1.4	55.3 ± 1.7
2	FLY ASH	150.6 ± 4.3	63.8 ± 6.6	176.2 ± 5.5	248.8 ± 14.7

The measurement values are below the clearance level for radionuclides of natural origin in bulk solid materials, as per AERB directive 01/2010 (table-3) dated 26/11/2010.

Note: (i)The report pertains to the given sample only, (ii)The sample will be retained in this laboratory for a period of one month from certificate date and thereafter it will be disposed off, (iii)This report shall not be reproduced except in full, without written approval of the laboratory (iv) The sample is not done by this laboratory.

checked by:

(AJAY N. THAKARE)

Authorized Signatory

28/02/2019

एन. जयचंद्रन / N. Jayachandran
प्रभारी अधिकारी / Officer-In-Charge
रेडियोविश्लेषक प्रयोगशाला / Radioanalytical Laboratory
विकिरण एवं आइसोटोप प्रौद्योगिकी बोर्ड
Board of Radiation & Isotope Technology,
सेक्टर / Sector-20, वाशी संकुल / Vashi Complex
नवी मुंबई / Navi Mumbai - 400 703

****End of Report****

Annexure -5

Green belt development report

Annexure-5

Green Belt Development

Plantation on 33% land of 406 acres	**134 acres**
Density of plantation	2500 plants/Hectare
Area required per plant	4.0 SQM
Total plantation required on 134 acres (542164 SQM) of land	135541 Nos
No of plantation completed	186232

PLANTATION PHOTOGRAPH

Annexure -6

CSR Audit Report

CSR Audit and Evaluation Report

(An assessment of Sustainable Development programme deliveries April 2017 to March 2023 as per EC of Ministry of Environment, Forest and Climate Change, Govt. of India)

Of

NTPC-Jhabua Power Ltd

By

Mahatma Gandhi State institute of Rural Development and Panchayat Raj
(Rural Development Dept. Govt. of M.P.)

Aadhartal, Jabalpur-482004(M.P)
Telephone: -+91-761-2681864, 2681924
Fax: - +91-761-2681864
Jabalpur M.P.

Email: ddmgsirdjab@mp.gov.in , mgsirdmgsird@yahoo.com

MAHATMA GANDHI STATE INSTITUTE OF RURAL DEVELOPMENT AND PANCHAYAT RAJ, M.P.

(Government of Madhya Pradesh, Panchayat and Rural Development Department)

Adhartal, Jabalpur (M.P.) 482004

Phone : 0761-2681864

E-mail : mgsirdmgsird@yahoo.com, / ddmgsirdjab@mp.gov.in, Website : www.mgsird.org

क्रमांक/1200 12/09/2023

To,

The Chief Executive officer,
NTPC, Jhabua Power ltd.
Village:Barela Gorakhpur,
Tehsil: Ghansore
Dist. Seoni. M.P.

Dear Sir,

Please find attached herewith CSR audit cum Evaluation report of CSR activities of NTPC-JPL. It is for April 2017 to March 2023 period.

Regards,

11/9/23

Director
MGSIRD&PR, Jabalpur

Contents

List of Abbreviation

NTPC- JPL	National Thermal Power Corporation & Jhabua Power Limited
CSR	Company Social Responsibility
IGA	Income Generation Activity
SHG	Self Help Group
EC and MoEF, Govt.of India	Environmental Clearance , Ministry of Environment, Forest & Climate Change , Government of India

Executive Summary

The State Institute for Rural Development (SIRD), Jabalpur was established by Govt. of India in 1964 as one of the core distinguished institutions of the country with the objective of becoming a regional center in the matter of conducting training programmes in tribal and community development.
In the year 1967, Govt.of M. P took over the charge of the Institute.Mahatma Gandhi State Institute of Rural Development, (MGSIRD). It is an apex Institute of Department of Rural Development & Panchayat Raj, under Government of Madhya Pradesh. Every state of the country is having SIRD.

The Jhabua Power ltd (erstwhile Avantha Group Company) was under National Company Law Tribunal – NCLT Calcutta bench from 27th March 2019 due to bankruptcy case. Later on after process of NCLT court, National Thermal Power Corporation – NTPC ltd. (Maharatna Company), a PSU of Govt. of India acquired JPL on 5th September 2022 duly approved by NCLT Court. Afterwards Jhabua Power ltd. (JPL) became a joint venture company of NPTC and Secured Financial Creditors (SFC).

Director Operations of NTPC is chairman of JPL. Shri. Anil Kumar Sharma is Chief Executive Officer (CEO). Mr. Somnath Chattopadhyay is working as Deputy CEO of the company. Both are posted at the JPL site. Other HoDs like Finance & Accounts, Contracts and Material, Fuel Management, Energy Efficiency Management Group are NPTC officials and leading respective departments at the site.

The CSR department (now NTPC-JPL) is working under arena of Human Resource Department. It is working under guidance of Shri. G. Raysen – Head(HR). Shri. Shailendra Sangamnerkar DGM- CSR is leading the CSR activities and its MoEF's Compliances since year 2010 in the capacity of HoD – CSR.

After acquisition of JPL by NTPC ltd, the CSR activities continued in the field as per work model of CSR by taking services of domain expertise from associates BAIF and IDYWC. The Gram Panchayat (GP) is the lowest planning unit for development programmes and schemes. The CSR audit cum evaluation is conducted as per laid down process in five different Gram Panchayats of Ghansore Block of Seoni District namely Barela, Gorakhpur, Bineki, Durjanpur and Bagdari covering 14 villages/hamlets. Similar kind of CSR activities are going on in Atariya, Rupdone, Sarasdol, Chari Gram Panchayats.

The institute (MGSIRD) has conducted the CSR evaluation cum audit in villages to with an objective of CSR activities done by the company from period of April 2017 to March 2023. The MGSIRD team has visited the field, made interactions with beneficiaries of the activity, community and Peoples representatives through a public meetings/Gram Sabha. It is done covering five Gram Panchayats of Ghansore Block of Seoni District namely Barela, Gorakhpur, Bineki, Durjanpur and Bagdari as per laid down process. MGSIRD's branch (Extension Training center) Seoni supported to facilitating meeting for evaluation cum audit of CSR activities done by Jhabua Power ltd.

List of year wise activities (from April 2017 to March 2023) along with list of workwise beneficiaries is provided to the audit team for above mentioned five Gram Panchayats by NTPC-JPL for CSR audit and evaluation purpose. Copy of same is provided to Sarpanch and Secretaries of above mentioned GPs well in advance. The purpose of providing it to different Gram Panchayats is to Keep relevant records, registers, documents list of beneficiaries, in proper and updated manner and making it available for anyone who wants to see and check.

About CSR audit and evaluation:

To put it in a simpler way, CSR /social audit cum evaluation can be described as checking and verification of a programme/ scheme implementation and its results by the community with the active involvement of the primary stakeholders.

Through CSR process the people, the final beneficiaries of socio-economic development scheme, programme, policy or law, are empowered to audit such schemes, programmes. It thereby tries to ensure that the activity or project is designed and implemented in a manner that is most suited for the prevailing (local) conditions, appropriately reflects the priorities and preferences of those affected by it, and most effectively serves public interest. Social audit covers the quantity and quality of works in relation to the expenses incurred/ disbursement made, number of works/ materials used and also selection of works and location of works. The aim is effective implementation.

Jhabua power ltd (JPL) is working in Nine Gram panchayats of Ghansore block of Seoni district under its Corporate Social Responsibility. JPL is working and implementing project of integrated development of the community mainly focusing Health and sanitation, Livelihood, Education, Women empowerment and rural infrastructure development. JPL is also working on MDG – Millennium Development Goals of UN.

SCOPE OF CSR audit and Evaluation by MGSIRD team:

The scope of CSR audit and Evaluation is based on EC issued to JPL by MoEF, Govt.of India. The details are as follows.

Jhabua Power ltd is doing CSR activities in accordance to the stipulated conditions for JPL vide EC no. J-13012/105/2008- IA. II(T) dated 17/2/2010 issued by Ministry of Environment, Forest and Climate change, Govt. of India. It contains nine conditions. The CSR related conditions under said EC are as follows.

Condition no. 4. (iii) – A special scheme as a part of CSR activity for sustainable livelihood of poor tribal and marginalized population within the study area shall be formulated with inbuilt monitoring mechanism of time bound implementation. The status of implementation shall be submitted to the regional office of the Ministry and competent authority in the state Govt. half yearly. The audit shall be get conducted from a Govt. institute/organization in the region.

Condition no.4. (xxvi) – An amount of Rs. 12.0 crore shall be earmarked as one-time capital cost for CSR programme. Subsequently a recurring expanse of Rs. 2.50 crore per annum shall be earmarked as recurring expanses of CSR activities. Details of activities to be undertaken shall be submitted along with road map for implementation.

Condition no. 4. (xxvii) – As a part of CSR programme the company shall conduct need 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 be a part of such programme. Company shall provide separate budget for community development activities and income generation programmes. This will be addition to vocational training for individuals imparted to take up self-employment and jobs.

Implementation by JPL

JPL is working with two partner organizations having domain expertise in development vertical. An associate organization is BAIF Development Research Foundation, and another is Institute for Development of Youth Women and Child (IDYWC).

Project Coverage – At present Jhabua Power Ltd. is working in the peripheral Gram Panchayats of Power Plant namely five Gram panchayats namely Barela, Gorakhpur, Bineki, Durjanpur and Bagdari are included. Said Gram Panchayats are considered as core project Gram Panchayats, while Atariya, Rupdone, Sarasdol and Chari are considered as associate Gram Panchayat considering development of adjacent area of the cluster rather than developing few.

Implementation Approach: - This project had multi-pronged approach to Improve the livelihood pattern of vulnerable section of the society in a sustainable way. Improved agriculture and Livestock development practices being integral part of rural livelihood as well as integrated farming system. An important aspect of health, Education, women empowerment and need based rural infrastructure.

Schedule of Gram Sabha organized for evaluation cum CSR audit conducted for NTPC-JPL

Sr No	Date	Name of Gram Panchayat	Remarks
01	14.04.2023	Barela	Year wise list of CSR activities duly verified by Sarpanch and Secretary of Gram Panchayat and resolution of Gram Sabha is attached.
02.	14.04.2023	Bineki	Year wise list of CSR activities duly verified by Sarpanch and Secretary of Gram Panchayat and resolution of Gram Sabha is attached.
03.	14.04.2023	Gorakhpur	Year wise list of CSR activities duly verified by Sarpanch and Secretary of Gram Panchayat and resolution of Gram Sabha is attached.
04.	14.04.2023	Durjanpur	Year wise list of CSR activities duly verified by Sarpanch and Secretary of Gram Panchayat and resolution of Gram Sabha is attached.
05.	14.04.2023	Bagdari	Year wise list of CSR activities duly verified by Sarpanch and Secretary of Gram Panchayat and resolution of Gram Sabha is attached.

Observations of CSR works of NTPC- JPL

The audit team of MGSIRD led by Shri. S. K. Sachan – Deputy Commissioner (Development) and Deputy Director along with Senior Auditor Dr. Vinod Singh and Mr. Ravindra Pal for audit cum evaluation of CSR activities carried out by NTPC-JPL noted following observations during field visit and interaction with local community.

1. Started work in 3 villages in year April 2010. At present working in nine Gram Panchayats of Ghansore block. After acquisition of NTPC on 5th September 2022 working in five gram panchayats. In other four gram panchayats soft and low cost CSR activities are continued.
2. Proper and regular need assessment is done by CSR dept. before starting of CSR activities in the field. Every year CSR activities are planned based on need of the community.
3. All processes are followed by CSR Department of the company and found streamlined in the field along with its relevant documents, support documents, records, stock regarding agro based livelihoods, Women empowerment, Primary health, Primary education and works done on public drinking water.
4. Local community was able to survive with ease by cultivating and growing different crops in Kharif and Rabi season with differentiated cultivation methods and using better quality seeds and improved techniques. Same is supported, motivated and guided by CSR department of the company and BAIF (associate of NTPC-JPL in CSR). Thus helped to ensure the food and nutritional security and achieved one of the Sustainable Development Goal – SDG.
5. An additional crop – 3rd crop in summer season is cultivated by the farmers in Bagdari which has increased cropping intensity.
6. Based on success and adaptation of activities such as fruit bearing orchards (wadi development), breed improvement in cattle for dairy development through AI, SRI technique in paddy the scaling up is done under CSR project effectively. It is visible in the project area.
7. Interaction is done with community at the different places in the field, where the process of CSR activities, its benefits was explained by beneficiaries where the milk yield of the progeny born through artificial insemination has increased from 1 liter per day to 12 liters per day. Many of such progenies are in the lactation in all nine gram panchayats. Various families with 4-5 nos. of good genetic quality cattle are producing 50-52 liters' milk per day and selling it @ Rs. 40/- per liter rates in nearby market. Some families are producing 32-35 liters' milk per day. Thus an additional income is generated by such families. In past six years it is found that number of AI has increased and community is taking interest for same. Gir and Sahiwal indigenous breeds calving (progeny born out of AI) are performing well in the area. Till now 800 female calves are born through artificial insemination programme in the cattle. It is door step service (free of cost) programme to the cattle rearer from the company. It was started in June 2011 by the JPL and still it is continued. It is creating good impact by high capacity milk yield cattle for enhancing income levels of the poor families.
8. Based on need assessment of the project area the works are planning and are being executed by CSR team of JPL.

9. Under Primary Health initiative weekly dispensary services are regularly provided by the Company. It was kept on hold during COVID-19 pandemic period, based on District Administration and Govt. guidelines. Post COVID, same it is re started and regular services are provided to the community.
10. Fruit bearing orchards development is proper. This activity is scaled up and becoming popular among beneficiary farmers of the area. Farmers are selling fruits in local / nearby market.
11. Empowerment of SHGs is done constantly. SHGs members started their small enterprises this is boosting up their livelihood and socio-economic status. They are becoming better as compare to their earlier status.
12. Income generation activities like purchase of tent house material for business purpose, opening Grocery shop, general store and cosmetics shop, vegetable shop, cloth store, tailoring shop, brick making, taking agriculture land on lease, vegetable cultivation by SHGs are among main activities. There are 58 SHGs in the field. The corpus of SHGs is Rs.88.00 lakh. It consists of Rs. 8.50 lakh support from JPL as revolving fund, Rs. 30.0 lakh their own savings and rest Rs. 49.50 lakh is leveraged from available Govt. schemes for rural poor from National Rural Livelihood Mission (NRLM) and Cash Credit Limit (CCL) of bank.
13. The capacity building programme of SHGs, Shiksha Mitra, Farmers and other beneficiaries continued in the field. A positive effect of environment creation is visible in the field on awareness part.
14. The company is running weekly dispensaries at Barela, Bineki, Gorakhpur, Durjanpur and Bagdari where company doctor goes to respective villages on particular fixed days and provides medicines to patients free of cost for 3 to 5 days as per requirement.
15. Work emphasis is on inclusive growth which includes majorly Agro based livelihood enhancement initiatives, Health, Education, Women empowerment and need based rural infrastructure.
16. Under education initiative programme the CSR department is running remedial classes in villages in the area which are found helpful for the students of primary section. Teaching is done by a trained local community person.
17. In built monitoring mechanism is followed by CSR team at JPL and found working actively in the all activities of the field.
18. Regular field visits from Company's CSR department for monitoring of activities is done on regular basis. Micro planning of each component of implementation plan of CSR for its effectiveness is done on regular basis in weekly review meetings, with associate partners, communities' takes place regularly. The inbuilt monitoring mechanism is in place and relevant records found updated and maintained.
19. From April 2017 to March 2023 JPL spent Rs.3,58,98,650 (rounded Rs.3.59 Crore) against stipulated amount of Rs. 15.0 Crore for above mentioned period (Rs.2.50 crore per annum recurring expenses for CSR activities as per condition no. 4. (xxvi) mentioned in the EC of MoEF, issued to JPL by Govt. of India).
20. A mandatory adherence is required for compliance of the EC of MoEF issued by Govt. of India, an amount of Rs. 2.50 Crore per annum is to be earmarked and spent by NTPC- JPL management on regular basis for CSR activities in the peripheral villages of the plant for needful and mandatory compliance of EC.

21. The audit team here by recommending field activities for CSR. The following activities should be increased substantially and maintained its regularity.
    - **A.** CSR activity for sustainable livelihood of poor tribal and marginalized population within the area is to be channelized for larger out reach.
    - **B.** More involvement of agro based livelihood, that helps in upliftment of poor section of society includes forward and back ward linkages.
    - **C.** More on and off farm activities should be taken for income generation.
    - **D.** Providing support for strengthening Primary Education, Primary health through Weekly consultation OPDs, Specialized health camps

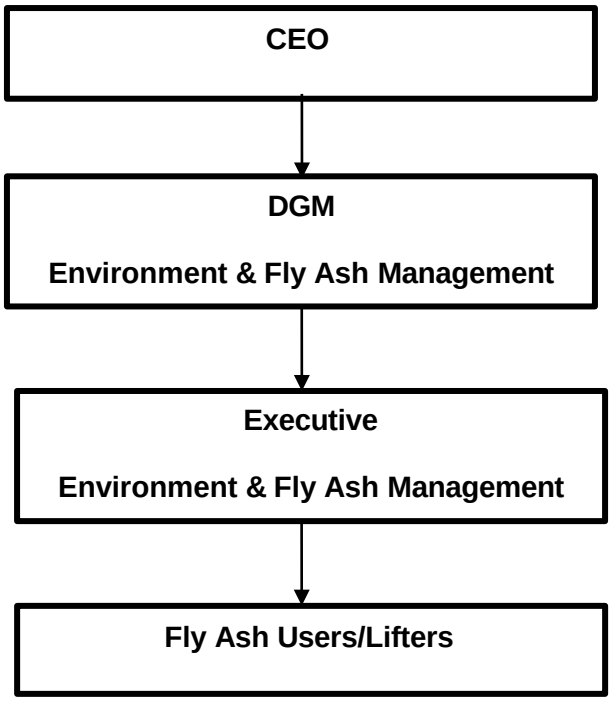
22. Regarding Village level infrastructure development works – Village internal infrastructure like village internal public roads (Not more than 500 Meter length in each village), construction of class rooms and toilet in Govt. schools. Beside this, development/maintenance of public drinking water sources may be taken up through CSR based on need of the village. A separate need assessment is to be done for said infra works.
23. All income generation activities work needs to be scaled up on larger scale to cover up more number of beneficiaries under successful CSR activities (community development) and may be replicated.
24. Based on interaction held with people and beneficiaries, the pace of CSR works needs to be increase substantially in the project area.
25. Condition no. 4(iii), 4 (xxvi) and 4 (xxvii) related CSR as mentioned in the EC of MoEF, Govt. of India vide EC no. J-13012/105/2008- IA. II(T) dated 17/2/2010, issued to JPL, is to be followed consistently.

Annexure -7

Details of Environment Management cell

Annexure -15

ENVIRONMENT MANAGEMENT CELL



Sr. No	NAME	QUALIFICATION	DESIGNATION
1	Mr. Neeraj Jalota		CHIEF EXECUTIVE OFFICER
2	Mr. Anoop Kumar Srivastava	M.Sc. Environment P.G. Diploma in Industrial Safety	DGM (Environment & Ash Management)

Annexure -8

Noise level monitoring report

TEST REPORT

VIBRANT
"Experience the unimaginable"

TC-11227

Sample Number : VTL/AN/01

Name & Address of the Party : M/s Jhabua Power Limited (A JV of NTPC LTD.)
Post Office - Attaria, Tehsil- Ghansore Seoni MP

Report No. : VTL/N/2410030001/A
Format No : 7.8 F-04
Party Reference No : 4300006669
Report Date : 10/10/2024
Receipt Date : 03/10/2024
Sampling Duration : 24 Hrs
Sample Collected : VTL Team
Instrument Calibration Status : Calibrated

Sample Description : Ambient Noise Level Monitoring
Scope of Monitoring : Regulatory Requirment
Protocol Used : IS 9989
Instrument Used : SLM

General Information:-

Sampling Location : Project Site (Jhabua Power Plant)
Instrument Code : VTL/SLM/01
Meteorological condition during monitoring : Clear Sky
Date of Monitoring : 30/09/2024 To 01/10/2024
Time of Monitoring : 06:00 to 06:00 Hrs.
Ambient Temperature (°C) : Min.22° Max 33°
Surrounding Activity : Human, Vehicular & Plant Activities
Parameter Required : As per work order
Coordinates : --

S.No.	Test Parameters	Protocol	Test Result dB(A)	
			Day Time	Night Time
1	Leq	IS 9989 - 1981 RA 2020	63.8	52.5

Ambient Noise Quality Standards as per Noise Pollution (Regulation and Control) Rules, 2000

Area Code	Category of Area/Zone	Limits in dB[A] Leq*	
		Day Time	Night Time
A	Industrial area	75	70
B	Commercial area	65	55
C	Residential area	55	45
D	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 100 m around premises of Hospitals, Educational 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

Checked by

RK Yadav
Lab Incharge
Authorized Signatory

Approved & Certified EPA 1986 Recognised, ISO:9001 and OHSAS:45001 Certified

Term & conditions F/O

Vibrant Techno Lab Pvt. Ltd.
SC-40, 3rd Floor, Narayan Vihar S, Ajmer Road, Jaipur Raj. 302020
9929108691, 9810205356, 8005707098, 9549956601
0141-2954638
bd@vibranttechnolab.com
www.vibranttechnolab.com

TEST REPORT

VIBRANT
"Experience the unimaginable"

TC-15227

Sample Number : VTL/AN/02

Name & Address of the Party : M/s Jhabua Power Limited (A JV of NTPC LTD.)
Post Office - Attaria, Tehsil- Ghansore Seoni MP

Report No. : VTL/N/2410030002/A
Format No : 7.8 F-04
Party Reference No : 4300005689
Report Date : 10/10/2024
Receipt Date : 03/10/2024
Sampling Duration : 24 Hrs.
Sample Collected : VTL Team
Instrument Calibration Status : Calibrated

Sample Description : Ambient Noise Level Monitoring
Scope of Monitoring : Regulatory Requirment
Protocol Used : IS 9989
Instrument Used : SLM

General Information:-

Sampling Location : Village - Barela
Instrument Code : VTL/SLM/02
Meteorological condition during monitoring : Clear Sky
Date of Monitoring : 30/09/2024 To 01/10/2024
Time of Monitoring : 06:00 to 06:00 Hrs.
Ambient Temperature (°C) : Min.22° Max 33°
Surrounding Activity : Human, Vehicular & Other Activities
Parameter Required : As per work order
Coordinates : --

S.No.	Test Parameters	Protocol	Test Result dB(A)	
			Day Time	Night Time
1	Leq	IS 9989 - 1981 RA:2020	54.2	42.8

Ambient Noise Quality Standards as per Noise Pollution (Regulation and Control) Rules, 2000

Area Code	Category of Area/Zone	Limits in dB(A) Leq*	
		Day Time	Night Time
A	Industrial area	75	70
B	Commercial area	65	55
C	Residential area	55	45
D	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 100 m around premises of Hospitals, Educational 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

Checked by

RK Yadav
Lab Incharge
Authorized Signatory

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TEST REPORT

VIBRANT
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TC-11227

Sample Number : VTL/AN/03

Name & Address of the Party : M/s Jhabua Power Limited (A JV of NTPC LTD.)
Post Office - Attaria, Tehsil- Ghansore Seoni MP

Report No.	: VTL/N/2410030003/A
Format No	: 7.8 F-04
Party Reference No	: 4300005889
Report Date	: 10/10/2024
Receipt Date	: 03/10/2024
Sampling Duration	: 24 Hrs
Sample Collected	: VTL Team
Instrument Calibration Status	: Calibrated

Sample Description	: Ambient Noise Level Monitoring
Scope of Monitoring	: Regulatory Requirment
Protocol Used	: IS 9989
Instrument Used	: SLM

General Information:-

Sampling Location	: Village - Gorakhpur
Instrument Code	: VTL/SLM/03
Meteorological condition during monitoring	: Clear Sky
Date of Monitoring	: 30/09/2024 To 01/10/2024
Time of Monitoring	: 06:00 to 06:00 Hrs
Ambient Temperature (°C)	: Min.22° Max 33°
Surrounding Activity	: Human, Vehicular & Other Activities
Parameter Required	: As per work order
Coordinates	: --

S.No.	Test Parameters	Protocol	Test Result dB(A)	
			Day Time	Night Time
1	Leq	IS 9989 - 1981 RA:2020	52.6	42.7

Ambient Noise Quality Standards as per Noise Pollution (Regulation and Control) Rules, 2000

Area Code	Category of Area/Zone	Limits in dB(A) Leq*	
		Day Time	Night Time
A	Industrial area	75	70
B	Commercial area	65	55
C	Residential area	55	45
D	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 100 m around premises of Hospitals, Educational 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

Checked by

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Term & conditions P10

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TEST REPORT

VIBRANT
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TC-11227

Sample Number : VTL/AN/04

Name & Address of the Party : M/s Jhabua Power Limited (A JV of NTPC LTD.)
Post Office - Attaria, Tehsil- Gharsore Seoni MP

Report No. : VTL/N/2410030004/A
Format No : 7.8 F-04
Party Reference No : 4300005689
Report Date : 10/10/2024
Receipt Date : 03/10/2024
Sampling Duration : 24 Hrs.
Sample Collected : VTL Team
Instrument Calibration Status : Calibrated

Sample Description : Ambient Noise Level Monitoring
Scope of Monitoring : Regulatory Requirment
Protocol Used : IS 9989
Instrument Used : SLM

General Information:-

Sampling Location : Village - Binaiki
Instrument Code : VTL/SLM/04
Meteorological condition during monitoring : Clear Sky
Date of Monitoring : 30/09/2024 To 01/10/2024
Time of Monitoring : 06:00 to 06:00 Hrs.
Ambient Temperature (°C) : Min.22° Max 33°
Surrounding Activity : Human, Vehicular & Other Activities
Parameter Required : As per work order
Coordinates : --

S.No.	Test Parameters	Protocol	Test Result dB(A)	
			Day Time	Night Time
1	Leq	IS 9989 - 1981 RA:2020	50.4	37.8

Ambient Noise Quality Standards as per Noise Pollution (Regulation and Control) Rules, 2000

Area Code	Category of Area/Zone	Limits in dB(A) Leq*	
		Day Time	Night Time
A	Industrial area	75	70
B	Commercial area	65	55
C	Residential area	55	45
D	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 100 m around premises of Hospitals, Educational and Courts. Use of vehicle horn, loudspeaker and bursting of crackers is banned in these zones.
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TEST REPORT

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TC-11227

Sample Number : VTL/AN/05

Name & Address of the Party : M/s Jhabua Power Limited (A JV of NTPC LTD.)
Post Office - Attaria, Tehsil- Ghansore Seoni MP

Report No. : VTL/N/2410030005/A
Format No : 7.8 F-04
Party Reference No : 4300006669
Report Date : 10/10/2024
Receipt Date : 03/10/2024
Sampling Duration : 24 Hrs.
Sample Collected : VTL Team
Instrument Calibration Status : Calibrated

Sample Description : Ambient Noise Level Monitoring
Scope of Monitoring : Regulatory Requirment
Protocol Used : IS 9989
Instrument Used : SLM

General Information:-

Sampling Location : Village - Panarjhir
Instrument Code : VTL/SLM/01
Meteorological condition during monitoring : Clear Sky
Date of Monitoring : 30/09/2024 To 01/10/2024
Time of Monitoring : 06:00 to 06:00 Hrs
Ambient Temperature (°C) : Min.22° Max.33°
Surrounding Activity : Human, Vehicular & Other Activities
Parameter Required : As per work order
Coordinates : --

S.No.	Test Parameters	Protocol	Test Result dB(A)	
			Day Time	Night Time
1	Leq	IS 9989 - 1981 RA 2020	53.5	42.1

Ambient Noise Quality Standards as per Noise Pollution (Regulation and Control) Rules, 2000

Area Code	Category of Area/Zone	Limits in dB(A) Leq*	
		Day Time	Night Time
A	Industrial area	75	70
B	Commercial area	65	55
C	Residential area	55	45
D	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 100 m around premises of Hospitals, Educational 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

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TEST REPORT

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TC-11227

Sample Number : VTL/AN/06

Name & Address of the Party : M/s Jhabua Power Limited (A JV of NTPC LTD.)
Post Office - Attaria, Tehsil- Ghansore Seoni MP

Report No. : VTL/N/2410030006/A
Format No : 7.8 F-04
Party Reference No : 4300005689
Report Date : 10/10/2024
Receipt Date : 03/10/2024
Sampling Duration : 24 Hrs.
Sample Collected : VTL Team
Instrument Calibration Status : Calibrated

Sample Description : Ambient Noise Level Monitoring
Scope of Monitoring : Regulatory Requirment
Protocol Used : IS 9989
Instrument Used : SLM

General Information:-

Sampling Location : Coal Road
Instrument Code : VTL/SLM/02
Meteorological condition during monitoring : Clear Sky
Date of Monitoring : 01/10/2024 To 02/10/2024
Time of Monitoring : 06:00 to 06:00 Hrs.
Ambient Temperature (°C) : Min.22° Max 34°
Surrounding Activity : Human, Vehicular & Other Activities
Parameter Required : As per work order
Coordinates : --

S.No.	Test Parameters	Protocol	Test Result dB(A)	
			Day Time	Night Time
1	Leq	IS 9989 - 1981 RA 2020	49.5	38.5

Ambient Noise Quality Standards as per Noise Pollution (Regulation and Control) Rules, 2000

Area Code	Category of Area/Zone	Limits in dB(A) Leq*	
		Day Time	Night Time
A	Industrial area	75	70
B	Commercial area	65	55
C	Residential area	55	45
D	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 100 m around premises of Hospitals, Educational 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

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TEST REPORT

VIBRANT
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Sample Number : VTL/AN/07

Name & Address of the Party : M/s Jhabua Power Limited (A JV of NTPC LTD.)
Post Office - Attaria, Tehsil- Ghansore Seoni MP

Report No.	: VTL/N/2410030007/A
Format No	: 7.8 F-04
Party Reference No	: 4300005889
Report Date	: 10/10/2024
Receipt Date	: 03/10/2024
Sampling Duration	: 24 Hrs.
Sample Collected	: VTL Team
Instrument Calibration Status	: Calibrated

Sample Description	: Ambient Noise Level Monitoring
Scope of Monitoring	: Regulatory Requirment
Protocol Used	: IS 9989
Instrument Used	: SLM

General Information:-

Sampling Location	: Village - Guneri
Instrument Code	: VTL/SLM/03
Meteorological condition during monitoring	: Clear Sky
Date of Monitoring	: 01/10/2024 To 02/10/2024
Time of Monitoring	: 06:00 to 06:00 Hrs.
Ambient Temperature (°C)	: Min.22° Max 34°
Surrounding Activity	: Human, Vehicular & Other Activities
Parameter Required	: As per work order
Coordinates	: --

S.No.	Test Parameters	Protocol	Test Result dB(A)	
			Day Time	Night Time
1	Leq	IS 9989 - 1981 RA 2020	51.3	42.1

Ambient Noise Quality Standards as per Noise Pollution (Regulation and Control) Rules, 2000

Area Code	Category of Area/Zone	Limits in dB(A) Leq*	
		Day Time	Night Time
A	Industrial area	75	70
B	Commercial area	65	55
C	Residential area	55	45
D	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 100 m around premises of Hospitals, Educational and Courts. Use of vehicle horn, loudspeaker and bursting of crackers is banned in these zones.

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TEST REPORT

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TC-11227

Sample Number : VTL/AN/08

Name & Address of the Party : M/s Jhabua Power Limited (A JV of NTPC LTD.)
Post Office - Attaria, Tehsil- Ghansore Seoni MP

Report No. : VTL/N/2410030008/A
Format No : 7.8 F-04
Party Reference No : 4300005689
Report Date : 10/10/2024
Receipt Date : 03/10/2024
Sampling Duration : 24 Hrs.
Sample Collected : VTL Team
Instrument Calibration Status : Calibrated

Sample Description : Ambient Noise Level Monitoring
Scope of Monitoring : Regulatory Requirment
Protocol Used : IS 9989
Instrument Used : SLM

General Information:-

Sampling Location : Village - Dola
Instrument Code : VTL/SLM/04
Meteorological condition during monitoring : Clear Sky
Date of Monitoring : 01/10/2024 To 02/10/2024
Time of Monitoring : 05:00 to 06:00 Hrs.
Ambient Temperature (°C) : Min 22° Max 34°
Surrounding Activity : Human, Vehicular & Other Activities
Parameter Required : As per work order
Coordinates : --

S.No.	Test Parameters	Protocol	Test Result dB(A)	
			Day Time	Night Time
1	Leq	IS 9989 - 1981 RA 2020	52.8	41.6

Ambient Noise Quality Standards as per Noise Pollution (Regulation and Control) Rules, 2000

Area Code	Category of Area/Zone	Limits in dB(A) Leq*	
		Day Time	Night Time
A	Industrial area	75	70
B	Commercial area	65	55
C	Residential area	55	45
D	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 100 m around premises of Hospitals, Educational 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

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TEST REPORT

VIBRANT
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TC-11237

Sample Number : VTL/AN/09

Name & Address of the Party : M/s Jhabua Power Limited (A JV of NTPC LTD.)
Post Office - Attaria, Tehsil- Gharsora Seoni MP

Report No. : VTL/N/2410030009/A
Format No : 7.8 F-04
Party Reference No : 4300005689
Report Date : 10/10/2024
Receipt Date : 03/10/2024
Sampling Duration : 24 Hrs.
Sample Collected : VTL Team
Instrument Calibration Status : Calibrated

Sample Description : Ambient Noise Level Monitoring
Scope of Monitoring : Regulatory Requirment
Protocol Used : IS 9989
Instrument Used : SLM

General Information:-

Sampling Location : Village - Durjanpur
Instrument Code : VTL/SLM/05
Meteorological condition during monitoring : Clear Sky
Date of Monitoring : 01/10/2024 To 02/10/2024
Time of Monitoring : 06:00 to 06:00 Hrs.
Ambient Temperature (°C) : Min.22° Max.34°
Surrounding Activity : Human, Vehicular & Other Activities
Parameter Required : As per work order
Coordinates : --

S.No.	Test Parameters	Protocol	Test Result dB(A)	
			Day Time	Night Time
1	Leq	IS 9989 - 1981 RA:2020	50.7	40.1

Ambient Noise Quality Standards as per Noise Pollution (Regulation and Control) Rules, 2000

Area Code	Category of Area/Zone	Limits in dB(A) Leq*	
		Day Time	Night Time
A	Industrial area	75	70
B	Commercial area	65	55
C	Residential area	55	45
D	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 100 m around premises of Hospitals, Educational 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

Checked by

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Annexure –9

Ambient Air Quality monitoring report

TEST REPORT

VIBRANT
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TC-11227

Sample Number : VTL/AA/01

Name & Address of the Party : M/s Jhabua Power Limited (A JV of NTPC LTD.)
Post Office - Attaria, Tehsil- Ghansore Seoni MP

Report No. : VTL/A/2410030001/A
Format No : 7.8 F-02
Party Reference No : 4300005689
Report Date : 10/10/2024
Period of Analysis : 03/10/2024-10/10/2024
Receipt Date : 03/10/2024

Sample Description : **AMBIENT AIR QUALITY MONITORING**

General Information:-

Sampling Location	:	Project Site (Jhabua Power Plant)
Sample Collected By	:	VTL Team
Sampling Equipment used	:	RDS/FPS
Instrument Code	:	VTL/RDS/FPS/01
Coordinates	:	75°55'03" & 22°44'14"
Meteorological condition during monitoring	:	Clear Sky
Date of Monitoring	:	30/09/2024 To 01/10/2024
Time of Monitoring	:	10:00 to 10:00 Hrs.
Ambient Temperature (°C)	:	Min.22° Max 33°
Surrounding Activity	:	Human, Vehicular & Plant Activities
Scope of Monitoring	:	Regulatory Requirment
Method of Sampling	:	IS :5182
Sampling Duration	:	24 Hrs.
Parameter Required	:	As per work order

S.No.	Parameters	Test Method	Results	Units	NAAQS 2009
1	Particulate Matter (as PM10)	IS:5182 (P- 23)-2006, RA. 2017	62.83	µg/m³	100
2	Particulate Matter (as PM2.5)	IS:5182 (P- 24)-2019	27.49	µg/m³	60
3	Nitrogen Dioxide (as NO2)	IS:5182 (P- 6)-2006, RA.2018	14.75	µg/m³	80
4	Sulphur Dioxide (as SO2)	IS:5182 (P- 2)-2001, RA. 2018	8.94	µg/m³	80

*BLQ-Below Limit Of Quantification, **LOQ-Limit Of Quantification

End of Report

Checked by

VIBRANT TECHNO LAB PRIVATE LIMITED JAIPUR

RK Yadav
Lab Incharge
Authorized Signatory

Term & conditions P10

Approved & Certified EPA 1986 Recognised, ISO:9001 and OHSAS:45001 Certified

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TEST REPORT

VIBRANT
"Experience the unimaginable"

Sample Number : VTL/AA/01

Name & Address of the Party : M/s Jhabua Power Limited (A JV of NTPC LTD.)
Post Office - Attaria, Tehsil- Ghansore Seoni MP

Report No. : VTL/A/2410030001/B
Format No : 7.8 F-02
Party Reference No : 4300005689
Report Date : 10/10/2024
Period of Analysis : 03/10/2024-10/10/2024
Receipt Date : 03/10/2024

Sample Description : **AMBIENT AIR QUALITY MONITORING**

General Information:-

Sampling Location	:	Project Site (Jhabua Power Plant)
Sample Collected By	:	VTL Team
Sampling Equipment used	:	RDS/FPS
Instrument Code	:	VTL/RDS/FPS/01
Coordinates	:	79°55'03" & 22°44'14"
Meteorological condition during monitoring	:	Clear Sky
Date of Monitoring	:	30/09/2024 To 01/10/2024
Time of Monitoring	:	10.00 to 10.00 Hrs.
Ambient Temperature (°C)	:	Min.22° Max.33°
Surrounding Activity	:	Human, Vehicular & Plant Activities
Scope of Monitoring	:	Regulatory Requirment
Method of Sampling	:	IS :5182
Sampling Duration	:	24 Hrs.
Parameter Required	:	As per work order

S.No.	Parameters	Test Method	Results	Units	NAAQS 2009
1	Mercury (as Hg)	Methods of air sampling and analysis,3rd ed .1988, Method No.317	*BLQ (**LOQ 0.5)	µg/m³	--

*BLQ-Below Limit Of Quantification, **LOQ-Limit Of Quantification

End of Report

Checked by

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TEST REPORT

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TC-11227

Sample Number : VTL/AA/02

Name & Address of the Party : M/s Jhabua Power Limited (A JV of NTPC LTD.)
Post Office - Attaria, Tehsil- Ghansore Seoni MP

Report No. : VTL/A/2410030002/A
Format No : 7.8 F-02
Party Reference No : 4300005689
Report Date : 10/10/2024
Period of Analysis : 03/10/2024-10/10/2024
Receipt Date : 03/10/2024

Sample Description : AMBIENT AIR QUALITY MONITORING

General Information:-

Sampling Location	: Village - Barela
Sample Collected By	: VTL Team
Sampling Equipment used	: RDS/FPS
Instrument Code	: VTL/RDS/FPS/02
Coordinates	: 79°54'27" & 22°44'53"
Meteorological condition during monitoring	: Clear Sky
Date of Monitoring	: 30/09/2024 To 01/10/2024
Time of Monitoring	: 10:10 to 10:10 Hrs.
Ambient Temperature (°C)	: Min.22° Max 33°
Surrounding Activity	: Human, Vehicular & Other Activities
Scope of Monitoring	: Regulatory Requirment
Method of Sampling	: IS :5182
Sampling Duration	: 24 Hrs.
Parameter Required	: As per work order

S.No.	Parameters	Test Method	Results	Units	NAAQS 2009
1	Particulate Matter (as PM10)	IS:5182 (P- 23)-2006, RA. 2017	58.43	µg/m³	100
2	Particulate Matter (as PM2.5)	IS:5182 (P- 24)-2019	24.62	µg/m³	60
3	Nitrogen Dioxide (as NO2)	IS:5182 (P- 6)-2006, RA.2018	12.88	µg/m³	80
4	Sulphur Dioxide (as SO2)	IS:5182 (P- 2)-2001, RA. 2018	7.56	µg/m³	80

*BLQ-Below Limit Of Quantification, **LOQ-Limit Of Quantification

End of Report

Checked by

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TEST REPORT

VIBRANT
"Experience the unimaginable"

Sample Number : VTL/AA/02

Name & Address of the Party : M/s Jhabua Power Limited (A JV of NTPC LTD.)
Post Office - Attaria, Tehsil- Ghansore Seoni MP

Report No. : VTL/A/2410030002/B
Format No : 7.8 F-02
Party Reference No : 4300005689
Report Date : 10/10/2024
Period of Analysis : 03/10/2024-10/10/2024
Receipt Date : 03/10/2024

Sample Description : AMBIENT AIR QUALITY MONITORING

General Information:-

Sampling Location	:	Village - Barela
Sample Collected By	:	VTL Team
Sampling Equipment used	:	RDS/FPS
Instrument Code	:	VTL/RDS/FPS/02
Coordinates	:	79°54'27" & 22°44'53"
Meteorological condition during monitoring	:	Clear Sky
Date of Monitoring	:	30/09/2024 To 01/10/2024
Time of Monitoring	:	10:10 to 10:10 Hrs.
Ambient Temperature (°C)	:	Min.22° Max 33°
Surrounding Activity	:	Human, Vehicular & Other Activities
Scope of Monitoring	:	Regulatory Requirment
Method of Sampling	:	IS :5182
Sampling Duration	:	24 Hrs.
Parameter Required	:	As per work order

S.No.	Parameters	Test Method	Results	Units	NAAQS 2009
1	Mercury (as Hg)	Methods of air sampling and analysis,3rd ed.,1988, Method No.317	*BLQ (**LOQ 0.5)	µg/m³	--

*BLQ-Below Limit Of Quantification, **LOQ-Limit Of Quantification

End of Report

Checked by

RK Yadav
Lab Incharge
Authorized Signatory

Approved & Certified EPA 1986 Recognised, ISO:9001 and OHSAS:45001 Certified

Vibrant Techno Lab Pvt. Ltd.
SC-40, 3rd Floor, Narayan Vihar S, Ajmer Road, Jaipur Raj. 302020
9929108691, 9810205356, 8005707098, 9549956601
0141-2954638
bd@vibranttechnolab.com
www.vibranttechnolab.com

TEST REPORT

VIBRANT
"Experience the unimaginable"

Sample Number : VTL/AA/03

Name & Address of the Party : M/s Jhabua Power Limited (A JV of NTPC LTD.)
Post Office - Attana, Tehsil- Ghansore Seoni MP

Report No : VTL/A/2410030003/A
Format No : 7.8 F-02
Party Reference No : 4300005689
Report Date : 10/10/2024
Period of Analysis : 03/10/2024-10/10/2024
Receipt Date : 03/10/2024

Sample Description : AMBIENT AIR QUALITY MONITORING

General Information:-

Sampling Location	:	Village - Gorakhpur
Sample Collected By	:	VTL Team
Sampling Equipment used	:	RDS/FPS
Instrument Code	:	VTL/RDS/FPS/03
Coordinates	:	79°55'44" & 22°44'15"
Meteorological condition during monitoring	:	Clear Sky
Date of Monitoring	:	30/09/2024 To 01/10/2024
Time of Monitoring	:	10:30 to 10:30 Hrs.
Ambient Temperature (°C)	:	Min.22° Max 33°
Surrounding Activity	:	Human, Vehicular & Other Activities
Scope of Monitoring	:	Regulatory Requirment
Method of Sampling	:	IS :5182
Sampling Duration	:	24 Hrs.
Parameter Required	:	As per work order

S.No.	Parameters	Test Method	Results	Units	NAAQS 2009
1	Particulate Matter (as PM10)	IS:5182 (P- 23)-2006, RA. 2017	55.36	µg/m³	100
2	Particulate Matter (as PM2.5)	IS:5182 (P- 24)-2019	22.82	µg/m³	60
3	Nitrogen Dioxide (as NO2)	IS:5182 (P- 6)-2006, RA.2018	11.62	µg/m³	80
4	Sulphur Dioxide (as SO2)	IS:5182 (P- 2)-2001, RA. 2018	5.92	µg/m³	80

*BLQ-Below Limit Of Quantification, **LOQ-Limit Of Quantification

End of Report

Checked by

RK Yadav
Lab Incharge
Authorized Signatory

Approved & Certified EPA 1986 Recognised, ISO:9001 and OHSAS:45001 Certified

Term & conditions P10

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www.vibranttechnolab.com

TEST REPORT

VIBRANT
"Experience the unimaginable"

Sample Number : VTL/AA/03

Name & Address of the Party : M/s Jhabua Power Limited (A JV of NTPC LTD.)
Post Office - Attaria, Tehsil- Ghansore Seoni MP

Report No. : VTL/A/2410030003/B
Format No : 7.8 F-02
Party Reference No : 4300005689
Report Date : 10/10/2024
Period of Analysis : 03/10/2024-10/10/2024
Receipt Date : 03/10/2024

Sample Description : **AMBIENT AIR QUALITY MONITORING**

General Information:-

Sampling Location	:	Village - Gorakhpur
Sample Collected By	:	VTL Team
Sampling Equipment used	:	RDS/FPS
Instrument Code	:	VTL/RDS/FPS/03
Coordinates	:	79°55'44" & 22°44'15"
Meteorological condition during monitoring	:	Clear Sky
Date of Monitoring	:	30/09/2024 To 01/10/2024
Time of Monitoring	:	10:30 to 10:30 Hrs.
Ambient Temperature (°C)	:	Min.22° Max.33°
Surrounding Activity	:	Human, Vehicular & Other Activities
Scope of Monitoring	:	Regulatory Requirment
Method of Sampling	:	IS :5182
Sampling Duration	:	24 Hrs.
Parameter Required	:	As per work order

S.No.	Parameters	Test Method	Results	Units	NAAQS 2009
1	Mercury (as Hg)	Methods of air sampling and analysis,3rd ed.,1988, Method No.317	*BLQ (**LOQ 0.5)	µg/m³	--

*BLQ-Below Limit Of Quantification, **LOQ-Limit Of Quantification

End of Report

Checked by

VIBRANT TECHNO LABS PRIVATE LIMITED JAIPUR

RK Yadav
Lab Incharge
Authorized Signatory

Term & conditions P/O

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www.vibranttechnolab.com

TEST REPORT

VIBRANT
"Experience the unimaginable"

Sample Number : VTL/AA/04

Name & Address of the Party : M/s Jhabua Power Limited (A JV of NTPC LTD.)
Post Office - Attaria, Tehsil- Ghansore Seoni MP

Report No. : VTL/A/2410030004/A
Format No : 7.8 F-02
Party Reference No : 4300005689
Report Date : 10/10/2024
Period of Analysis : 03/10/2024-10/10/2024
Receipt Date : 03/10/2024

Sample Description : AMBIENT AIR QUALITY MONITORING

General Information:-

Sampling Location	:	Village - Binaiki
Sample Collected By	:	VTL Team
Sampling Equipment used	:	RDS/FPS
Instrument Code	:	VTL/RDS/FPS/04
Coordinates	:	79°55'44" & 22°14'15"
Meteorological condition during monitoring	:	Clear Sky
Date of Monitoring	:	30/09/2024 To 01/10/2024
Time of Monitoring	:	10:45 to 10:45 Hrs.
Ambient Temperature (°C)	:	Min.22° Max 33°
Surrounding Activity	:	Human, Vehicular & Other Activities
Scope of Monitoring	:	Regulatory Requirment
Method of Sampling	:	IS :5182
Sampling Duration	:	24 Hrs.
Parameter Required	:	As per work order

S.No.	Parameters	Test Method	Results	Units	NAAQS 2009
1	Particulate Matter (as PM10)	IS:5182 (P- 23)-2006, RA. 2017	54.66	µg/m³	100
2	Particulate Matter (as PM2.5)	IS:5182 (P- 24)-2019	21.18	µg/m³	60
3	Nitrogen Dioxide (as NO2)	IS:5182 (P- 6)-2006, RA 2018	11.25	µg/m³	80
4	Sulphur Dioxide (as SO2)	IS:5182 (P- 2)-2001, RA. 2018	5.61	µg/m³	60

*BLQ-Below Limit Of Quantification, **LOQ-Limit Of Quantification

End of Report

Checked by

VIBRANT TECHNO LAB PRIVATE LIMITED JAIPUR

RK Yadav
Lab Incharge
Authorized Signatory

Approved & Certified EPA 1986 Recognised, ISO:9001 and OHSAS:45001 Certified

Term & conditions Pt.D

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www.vibranttechnolab.com

TEST REPORT

VIBRANT
"Experience the unimaginable"

Sample Number : VTL/AA/04

Name & Address of the Party : M/s Jhabua Power Limited (A JV of NTPC LTD.)
Post Office - Attaria, Tehsil- Ghansore Seoni MP

Report No. : VTL/A/2410030004/B
Format No : 7.8 F-02
Party Reference No : 4300005689
Report Date : 10/10/2024
Period of Analysis : 03/10/2024-10/10/2024
Receipt Date : 03/10/2024

Sample Description : AMBIENT AIR QUALITY MONITORING

General Information:-

Sampling Location	:	Village - Binaiki
Sample Collected By	:	VTL Team
Sampling Equipment used	:	RDS/FPS
Instrument Code	:	VTL/RDS/FPS/04
Coordinates	:	79°55'44" & 22°14'15"
Meteorological condition during monitoring	:	Clear Sky
Date of Monitoring	:	30/09/2024 To 01/10/2024
Time of Monitoring	:	10:45 to 10:45 Hrs.
Ambient Temperature (°C)	:	Min 22° Max 33°
Surrounding Activity	:	Human, Vehicular & Other Activities
Scope of Monitoring	:	Regulatory Requirment
Method of Sampling	:	IS :5182
Sampling Duration	:	24 Hrs.
Parameter Required	:	As per work order

S.No.	Parameters	Test Method	Results	Units	NAAQS 2009
1	Mercury (as Hg)	Methods of air sampling and analysis,3rd ed. 1988. Method No 317	*BLQ (**LOQ 0.5)	µg/m³	--

*BLQ-Below Limit Of Quantification, **LOQ-Limit Of Quantification

End of Report

Checked by

RK Yadav
Lab Incharge
Authorized Signatory

Term & conditions Prid

Vibrant Techno Lab Pvt. Ltd.
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Annexure -10

Receipts of last compliance report submission

Your (Environment Clearance) application has been Submitted with following details

Proposal No	IA/MP/THE/106990/2019
Compliance ID	64696593
Compliance Number(For Tracking)	EC/M/COMPLIANCE/64696593/2024
Reporting Year	2024
Reporting Period	01 Jun(01 Oct - 31 Mar)
Submission Date	03-05-2024
IRO Name	Shri Ashok Kumar Sinha
IRO Email	tg035@ifs.nic.in
State	MADHYA PRADESH
IRO Office Address	Integrated Regional Offices, Bhopal

Note:- SMS and E-Mail has been sent to Shri Ashok Kumar Sinha, MADHYA PRADESH with Not fication to Project Proponent.

Anoop srivastava

From:	Anoop srivastava
Sent:	07 May 2024 12:41
To:	'yogendra78@nic.in'
Cc	'sudheer.ch@gov.in'
Subject:	Submission of Six Monthly Compliance Report - 1x660 MW Coal Based Thermal Power Plant, Villages- Barela & Gorakpur, Tehsil- Ghansore, Distt.-Seoni, Madhya Pradesh.: From October 2024 to March 2024
Attachments:	Director Environment Delhi Phase II pdf

Ref.: MoEF letter no. J 13012/63/2010-IA.II (T) Dated 21th August'2014 & 6th August 2021

Dear Sir,

Please find attached the **Six Monthly Compliance Report (October' 2023 to March' 2024)** in fulfilment of conditions stipulated in the Environment Clearance (letter issued by MoEF, New Delhi and referenced above) for 1x660 MW Coal based Thermal Power Plant at Villages- Barela & Gorakpur, Tehsil- Ghansore, Distt.- Seoni, Madhya Pradesh of M/s Jhabua Power Ltd. Soft copy is uploaded on MoEF & CC web site-Parivesh.

Kindly acknowledge.

Regards,

For Jhabua Power Ltd.

Authorized Signatory

Encl.: Six Monthly Compliance Report (October' 2023 to March' 2024)

Anoop srivastava

From:	Anoop srivastava
Sent:	07 May 2024 12:46
To:	'apccfbhopal@gmail.com'
Subject:	Submission of Six Monthly Compliance Report - 1x660 MW Coal Based Thermal Power Plant, Villages- Barela & Gorakpur, Tehsil- Ghansore, Distt.-Seoni, Madhya Pradesh.: From October 2024- to March 2024
Attachments:	Director Environment Bhopal Phase II.pdf

Ref.: MoEF letter no. J 13012/63/2010-IA.II (T) Dated 21th August'2014 & 6th August 2021

Dear Sir,

Please find attached the **Six Monthly Compliance Report (October' 2023 to March' 2024)** in fulfilment of conditions stipulated in the Environment Clearance (letter issued by MoEF, New Delhi and referenced above) for 1x660 MW Coal based Thermal Power Plant at Villages- Barela & Gorakpur, Tehsil- Ghansore, Distt.- Seoni, Madhya Pradesh of M/s Jhabua Power Ltd. Soft copy is uploaded on MoEF & CC web site-Parivesh.

Kindly acknowledge.

Regards,

For Jhabua Power Ltd.

Authorized Signatory

Encl.: Six Monthly Compliance Report (October' 2023 to March' 2024)

Anoop srivastava

From:	Anoop srivastava
Sent:	07 May 2024 12:43
To:	'mscb.cpcb@gov.in'; 'mscb.cpcb@nic.in'; 'ccb.cpcb@nic.in'
Subject:	Submission of Six Monthly Compliance Report - 1x660 MW Coal Based Thermal Power Plant, Villages- Barela & Gorakpur, Tehsil- Ghansore, Distt.-Seoni, Madhya Pradesh.: From October 2024- to March 2024
Attachments:	Chairman CPCB Delhi Phase II.pdf

Ref.: MoEF letter no. J 13012/63/2010-IA.II (T) Dated 21th August'2014 & 6th August 2021

Dear Sir,

Please find attached the **Six Monthly Compliance Report (October' 2023 to March' 2024)** in fulfilment of conditions stipulated in the Environment Clearance (letter issued by MoEF, New Delhi and referenced above) for 1x660 MW Coal based Thermal Power Plant at Villages- Barela & Gorakpur, Tehsil- Ghansore, Distt.- Seoni, Madhya Pradesh of M/s Jhabua Power Ltd. Soft copy is uploaded on MoEF & CC web site-Parivesh.

Kindly acknowledge.

Regards,

For Jhabua Power Ltd.

Authorized Signatory

Encl.: Six Monthly Compliance Report (October' 2023 to March' 2024)

Anoop srivastava

From: Anoop srivastava
Sent: 07 May 2024 12:47
To: 'cpcb.bhopal@gmail.com'
Subject: Submission of Six Monthly Compliance Report - 1x660 MW Coal Based Thermal Power Plant, Villages- Barela & Gorakpur, Tehsil- Ghansore, Distt -Seoni, Madhya Pradesh.. From October 2024- to March 2024
Attachments: Director CPCB Bhopal Phase II..pdf

Ref.: MoEF letter no. J 13012/63/2010-IA.II (T) Dated 21th August'2014 & 6th August 2021

Dear Sir,

Please find attached the **Six Monthly Compliance Report (October' 2023 to March' 2024)** In fulfilment of conditions stipulated in the Environment Clearance (letter issued by MoEF, New Delhi and referenced above) for 1x660 MW Coal based Thermal Power Plant at Villages- Barela & Gorakpur, Tehsil- Ghansore, Distt.- Seoni, Madhya Pradesh of M/s Jhabua Power Ltd. Soft copy is uploaded on MoEF & CC web site-Parivesh.

Kindly acknowledge.

Regards,

For Jhabua Power Ltd.

Authorized Signatory

Encl.: Six Monthly Compliance Report (October' 2023 to March' 2024)

Anoop srivastava

From:	Anoop srivastava
Sent:	07 May 2024 12:44
To:	'ms-mppcb@mp.gov.in'
Cc:	'romppcbjbp@rediffmail.com'
Subject:	Submission of Six Monthly Compliance Report - 1x660 MW Coal Based Thermal Power Plant, Villages- Barela & Gorakpur, Tehsil- Ghansore, Distt.-Seoni, Madhya Pradesh.: From October 2024- to March 2024
Attachments:	MS MPPCB Bhopal Phase II.pdf

Ref.: MoEF letter no. J 13012/63/2010-IA.II (T) Dated 21th August'2014 & 6th August 2021

Dear Sir,

Please find attached the **Six Monthly Compliance Report (October' 2023 to March' 2024)** in fulfilment of conditions stipulated in the Environment Clearance (letter issued by MoEF, New Delhi and referenced above) for 1x660 MW Coal based Thermal Power Plant at Villages- Barela & Gorakpur, Tehsil- Ghansore, Distt.- Seoni, Madhya Pradesh of M/s Jhabua Power Ltd. Soft copy is uploaded on MoEF & CC web site-Parivesh.

Kindly acknowledge.

Regards,

For Jhabua Power Ltd.

Authorized Signatory

Encl.: Six Monthly Compliance Report (October' 2023 to March' 2024)

Annexure -11

Fly ash utilization plan

Annexure -11

PROGRESSIVE FLY ASH UTILIZATION PLAN IMPORTED COAL					
ITEM DESCRIPTION	**Unit**	**1st Year**	**2nd Year**	**3rd Year**	**4th Year**
Tota Production of Ash	MeT/Annum	**0.1824**	**0.1824**	**0.1824**	**0.1824**
Fly Ash Bricks, Blocks,Tiles made with fly ash, lime & gypsum	MeT/Annum	0.022	0.024	0.025	0.025
Paving, Blocks, Paving Tiles, Checker Tiles. Cement wil be used as binder.	MeT/Annum	0.016	0.018	0.018	0.018
Cement Manufaturing	MeT/Annum	0.034	0.07	0.1	0.12
Clay based building materials suck as bricks & blocks.	MeT/Annum	0.011	0.012	0.012	0.012
Concret, mortarand plaster	MeT/Annum	0.01	0.01	0.01	0.01
Total Consumption	MeT/Annum	0.093	0.131	0.165	0.185
Total Utilization	**%**	**50.99**	**71.82**	**90.46**	**101.43**

Annexure -12

Submission Receipts of green belt plan.

Annexure - 10

Jhabua Power Ltd.

Village - Barela, Post - [illegible], Tehsil - [illegible]
Distt. - Seoni, Pin - 480997 (Madhya Pradesh)

JPL/JBP/[illegible]

Date :24-06-2011

To,

The CCF,
Forest Department,
Seoni (M.P.)

Sub: Proposal for plantation scheme around plant area.

Dear Sir,

M/s Jhabua Power Limited is setting up 1 x 600 MW coal based Thermal Power Plant at Village Barela-Gorakhpur, Tehsil – Ghansore, District – Seoni. As a measure for conservation [illegible] and to provide a buffer between the sources of pollution and the surrounding areas, a green belt has been proposed around the plant boundary. The proposed area for green belt development is around 103 Acre for Phase-I. Jhabua Power Limited kindly request you to guide us with a plantation scheme with the species of saplings that can be grown effectively in green belt area.

Thanking You

[signature] 24/6/2011

A.N. Mishra
Head Project
Jhabua Power Ltd

Encl. :- Plot Plan highlighting green belt area.

[stamp] 24/6/11

AVANTHA

Annexure -13

Wildlife Conservation plan

☎ (07692) - 220556,
FAX - 07692-226181

e-mail: dfotaseoni@mp.gov.in
dfonseoni@mpforest.org

कार्यालय, वनमंडलाधिकारी, उत्तर सिवनी वनमंडल

पत्र क्रमांक / मा.चि / 2465 सिवनी, दिनांक 18/9/2013

प्रति,

मुख्य महाप्रबंधक,
झाबुआ पावर प्रोजेक्ट,
ग्राम–बरेला, पोस्ट–अतरिया,
तहसील–घंसौर, जिला–सिवनी।

विषय :– EIA study for praposed expansion from 600 MW to 1260 MW by addition of 1 X 660 MW coal based supercritical power plant at Barela & Gorakhpur, Tehsil:Ghansore, District:Seoni (M.P.).

संदर्भ :– आपका पत्र क्रमांक निल, दिनांक 17.09.2013.

****

उपरोक्त विषयांतर्गत संदर्भित पत्र के परिप्रेक्ष्य में सिवनी जिले के उत्तर सिवनी वनमंडल के परिक्षेत्र शिकारा के ग्राम बरेला गोरखपुर में स्थापित किये जा रहे विद्युत संयंत्र के निर्माण के Environmental Impect Assessment (EIA) के संबंध में परियोजना क्षेत्र के 10 कि.मी. परिधि के अंतर्गत आने वाले फ्लोरा एवं फौना की सूची एवं मानचित्र को प्रमाणित करने का निवेदन किया गया है। तदानुसार मानचित्र एवं फ्लोरा एवं फौना की सूची में प्रमाणीकरण उपरांत प्रतिवेदन आपकी ओर अग्रिम कार्यवाही हेतु संलग्न प्रेषित है।

संलग्न :– उपरोक्तानुसार।

वनमंडलाधिकारी
उत्तर सिवनी वनमंडल

पृ. क्रमांक / मा.चि. / 2465 सिवनी, दिनांक 18/9/2013

प्रतिलिपि :– मुख्य वन संरक्षक, सिवनी वृत्त सिवनी की ओर उपरोक्त संदर्भ में सूचनार्थ सम्प्रेषित।

वनमंडलाधिकारी
उत्तर सिवनी वनमंडल

18/9/13.

WILD LIFE CONSERVATION PLAN

1 X 660 MW COAL BASED SUPERCRITICAL THERMAL POWER PLANT

At

Village-Barela & Gorakhpur,
Tehsil- Ghansore
District- Seoni
Madhya Pradesh

Project Proponent

M/s Jhabua Power Ltd

1.0 INTRODUCTION

M/s. Jhabua Power Ltd. (JPL), intends for the expansion of existing power plant capacity from 600 MW to 1260 MW by addition of 1 x 660 MW coal based supercritical Thermal Power Plant in the existing premises at Barela and Gorakhpur villages in District Seoni in Madhya Pradesh.

1.1 Purpose of the Report

As per Environmental Impact Assessment EIA Notification dated 14th September, 2006, commissioning or operation of thermal power plants (≥500 MW) falls under category 'A' under project type 1(D) and requires Environmental Clearance (EC) to be obtained from MoEF before the commencement of ground activity.

Inline with the said Notification, MoEF has prescribed the TOR for the preparation of EIA/EMP report for the proposed coal based power project during the meeting held on October 18-19, 2010. Based on the TOR conditions stipulated by MoEF vide letter No. **J-13012/63/2010-IA.II (T) dated 8th December 2010 & addendum in TOR** vide letter no **J-13012/63/2010-IA.II (T) dated 6th September 2011.** A detailed flora and fauna studies have been carried out and prepared wildlife conservation plan for observed/reported aninal species.

1.2 Identification of Project and Project Proponent

1.2.1 About the Project

The proposed expansion project (1X660 MW Coal Based Power Plant) will be located near Barela and Gorakhpur villages, Seoni district, Madhya Pradesh. This project is inline with the central government's massive power capacity addition plan, which sets a target of adding 78,700 MW of power generation capacity in the country in the 11th plan (2007-2012) out of which more than 15000 MW are expected to be met by the private sector. This proposed project at Seoni district by **M/s Jhabua Power Ltd.** would assist in meeting the increased demand of power.

It is envisaged that the required coal for the power plant will be imported from Indoneshia. JPL has approached Ministry of Coal (MoC) for the long term coal linkage under prevailing policy of Government. Alternatively, JPL is also envisaging using imported coal from South Kallmantan/Banjarmasin, Indonesia, pending a formal coal linkage.

1.2.2 Project Proponent

M/s. Jhabua Power Ltd. (JPL), intends for the expansion of existing power plant capacity from 600 MW to 1260 MW by addition of 1 x 660 MW coal based supercritical Thermal Power Plant in the existing premises at Barela and Gorakhpur villages in District Seoni in Madhya Pradesh.

1.3 Brief Description of Project

The proposed project would require 385.79-acre (≈156.13-ha) of land including the ash pond and green belt area. In the proposed power plant expansion one (1) boilers with super critical technology will be installed which will be fired on coal. The total imported coal requirement of the project at 85% Plant Load Factor (PLF) is 2.85 MTPA. The water requirement will be about 15.33 MCM, which will be drawn from Bargi Reservoir. One existing di -flue stack of 275-m with ESP of

more than 99.99% efficiency will be provided to control particulate matter to below 50-mg/Nm^3.

1.3.1 Project Cost

The cost of the total project is about Rs. 3500 crores, which includes Rs 193 Crores for environmental protection measures. The project will be commissioned in 24 months.

1.3.2 Description of the Site

The land identified for the proposed project is about 385.79 acres. The land in the plant site is rocky land with a general elevation of about **536-550 m MSL**.

The mean maximum and mean minimum ambient temperatures in the area as per IMD-Seoni for the period of 10 years are recorded to be 48.4°C (June) and 13.7°C (December) respectively. The relative humidity varies from 48% to 78%, the rain fall in the region is about 1346 mm. seismically, the site falls under Zone-II.

1.3.3 Environmental Setting of the Site

The environmental setting of the proposed plant site is given in **Table-1**. The location map of the project and study area map of 10-km radius around the proposed site are given in **Figure-1** and **Figure-2** respectively. The co-ordinates of the plant site and ash pond site are marked on topo-sheet and enclosed as **Figure-2**.Aerial distance & direction of Bargi reservoir is shown in **Figure-3**

TABLE-1
ENVIRONMENTAL SETTING OF THE SITE

Sr.No.	Particulars	Details
1	Plant Location	Barela and Gorakhpur villages of Seoni district, Madhya Pradesh
2	Plant site coordinates	**CORDINATES** Latitude: 22°43'40" N to 22°44'20" N Longitude: 79°54'35" E to 79°55'35" E
3	Ash pond coordinates	**CORDINATES** Latitude: 22°44'4.83" N Longitude: 79°55'15.30" E
4	Climatic Conditions (IMD, Seoni)	
a)	Temperature Mean maximum Mean minimum	 48.4 °C (June) 13.7°C (December)
b)	Mean Annual Rainfall	1346 mm
c)	Relative Humidity	48 % - 78%
d)	Predominant wind directions	North -East
6	Plant site Elevation above MSL	536-550 m above MSL

Sr.No.	Particulars	Details
7	Plant site Toposheet	55 N/14
8	Present land use at the site	Mixed barren & Rocky land with shrubs
9	Nearest highway	NH-7 (18-km, NW)
10	Nearest railway station	Jabalpur (60-km, NNE)
11	Nearest Airstrip	Jabalpur (60-km, NNE)
12	Nearest major water bodies	- Patwara River (6.5-km, WSW) - Bhagori River (5.0-km, ESE) - Tamur River (6.5 km, W) - Paryat River (3.0 km, WSW) - Gadheri (4.5 km, WSW)
13	Water source for the project	Bargi Reservoir (10 Km, NE)
14	Nearest town/City	Ghansore (8.5-km, SSE)
15	Nearest village	Gorakhpur (0.6-km, NE)
16	Hills/valleys	--
17	Archaeologically important places	Nil in 15-km radius
18	Protected areas as per Wildlife Protection Act,1972 (Tiger reserve, Elephant reserve, Biospheres, National parks, Wildlife sanctuaries, community reserves and conservation reserves)	Nil in 15-km radius
19	Reserved / Protected Forests	11 forests exists around study area

Sr. No.	Name of the Forest Block, distance & direction from project site.
1	Roto (RF), 3.0 Km, N to NE
2	Barwakchhar (RF), 7.5 Km, N to NE
3	Katori (RF), 9.0 km , NW
4	Dhoma (RF), 3.0 km, NW
5	Diwara (RF), 4.7 km, NW
6	Ghansore (RF), 7.5 km, S
7	Bhattekhari (RF), 1.5 km, WNW to SW
8	Bichhua (RF), 3.5 km, ESE
9	Jaitpur (RF), 8.0 km, SW
10	Barela (RF), 0.0 km, SE
11	Partapgarh (RF), 8.0 km, ESE

20	Seismicity	Seismic Zone-II as per IS 1893 (Part 1): 2002
21	Defence Installations	None in 15-km radius area
22	Major industries in 15-km radius	No major industries are present in 15-km radius.
23	State Boundary	Uttar Pradesh & Maharastra State boundary

Note: All distances mentioned are aerial distances, Source: EIA studies,

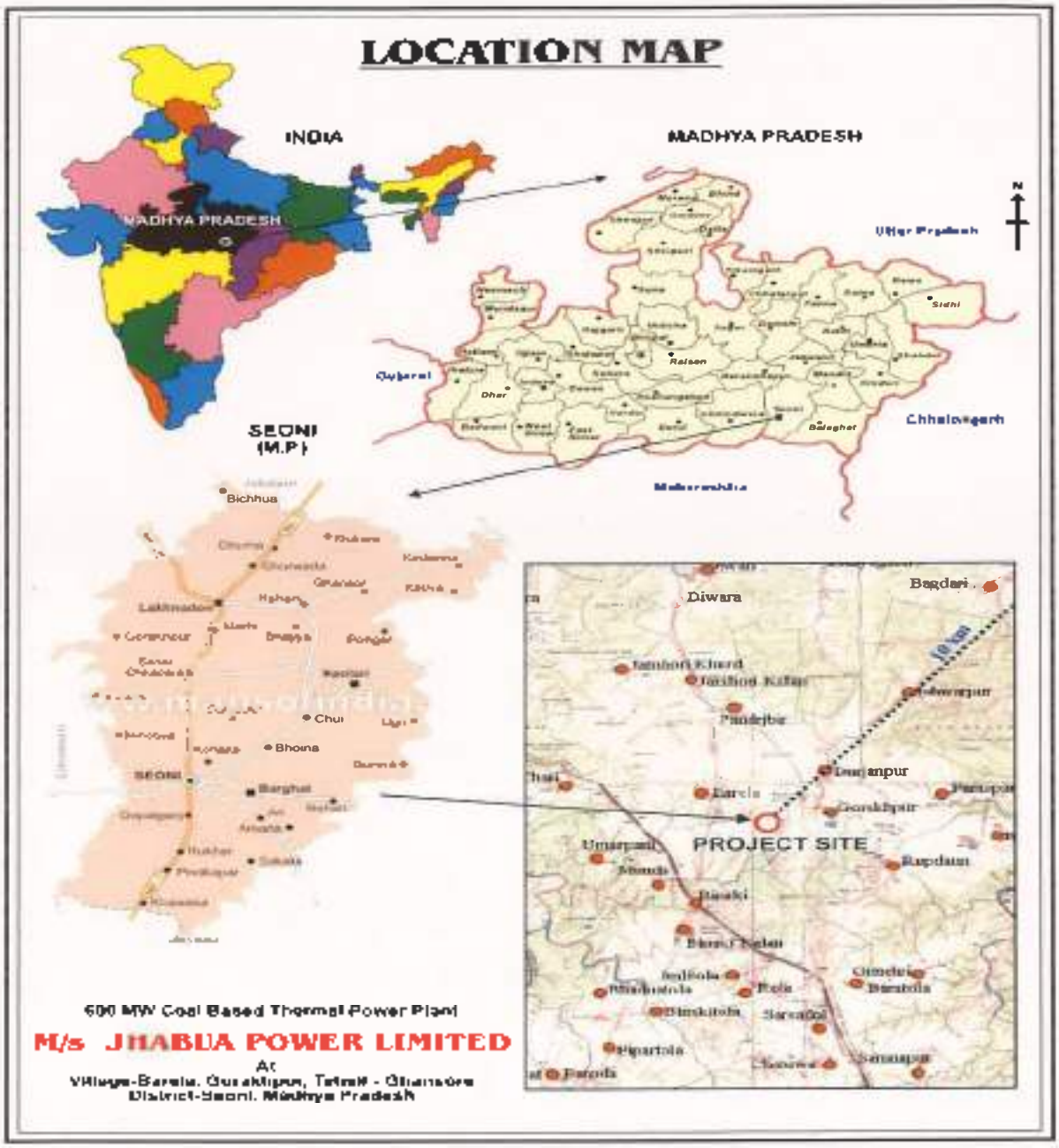

LOCATION MAP
INDIA
MADHYA PRADESH
MADHYA PRADESH
SEONI (M.P)
Uttar Pradesh
Gujarat
Chhattisgarh
Maharashtra
Bichhua
Lakhnadon
Seoni
Barghat
Chui
Bhoma
Diwara
Bandari
Pandeja
Barela
Gorakhpur
PROJECT SITE
Rupdaun
Pala
600 MW Coal Based Thermal Power Plant
M/s JHABUA POWER LIMITED
At
Village-Barela, Gorakhpur, Tehsil - Dhanaura
District-Seoni, Madhya Pradesh

FIGURE-1
VICINITY MAP

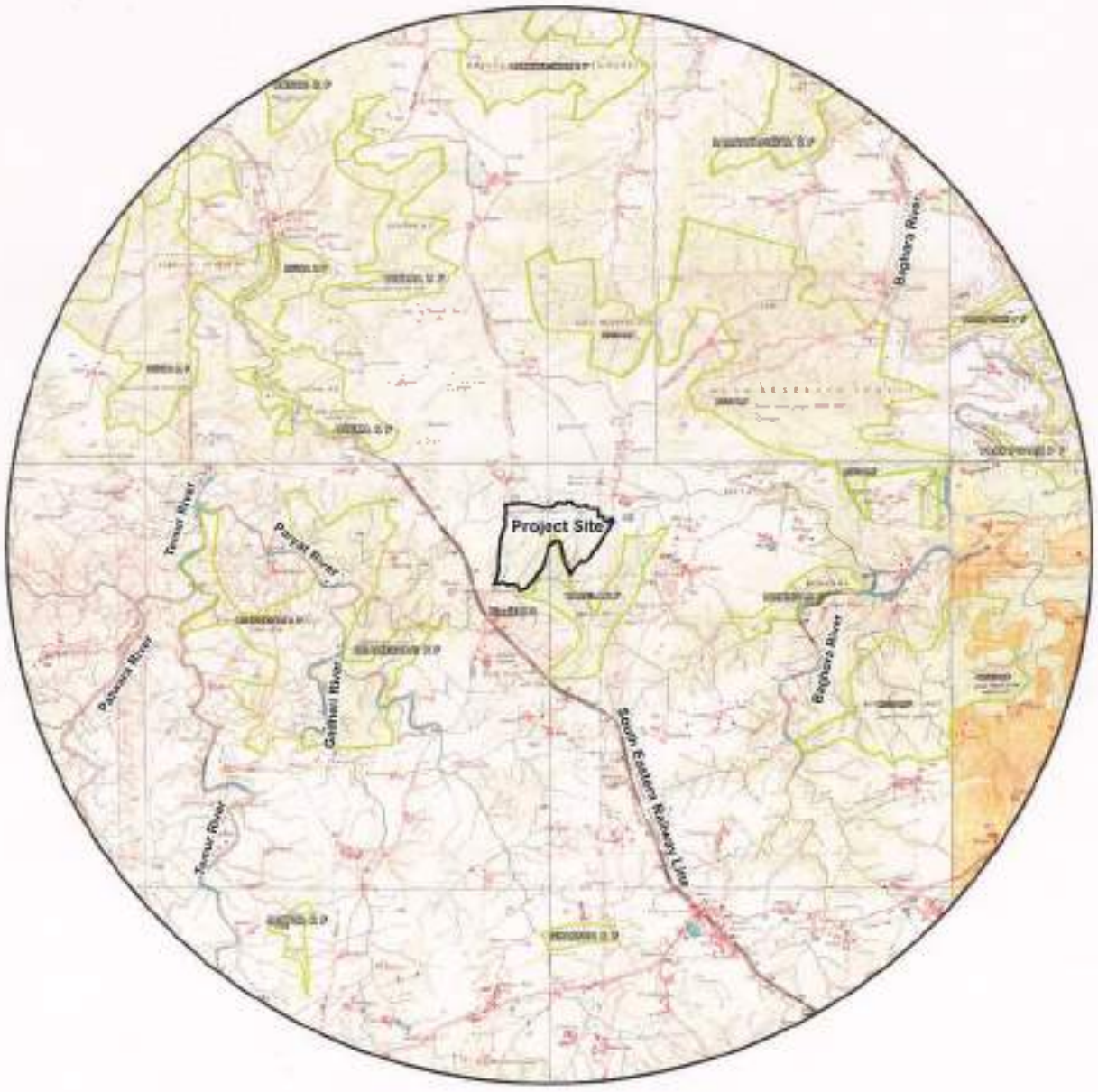


FIGURE-2
STUDY AREA MAP (10 KM RADIUS)

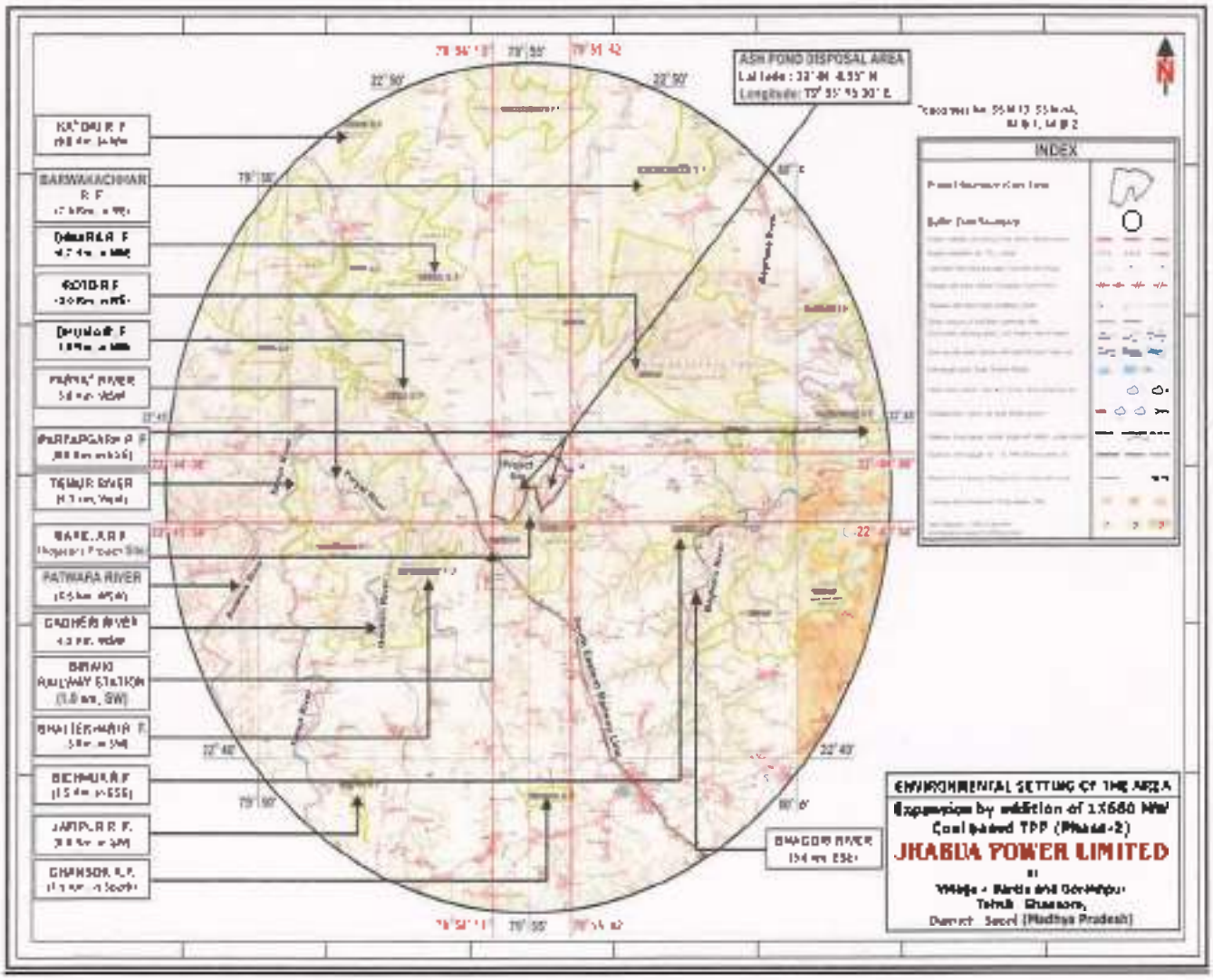
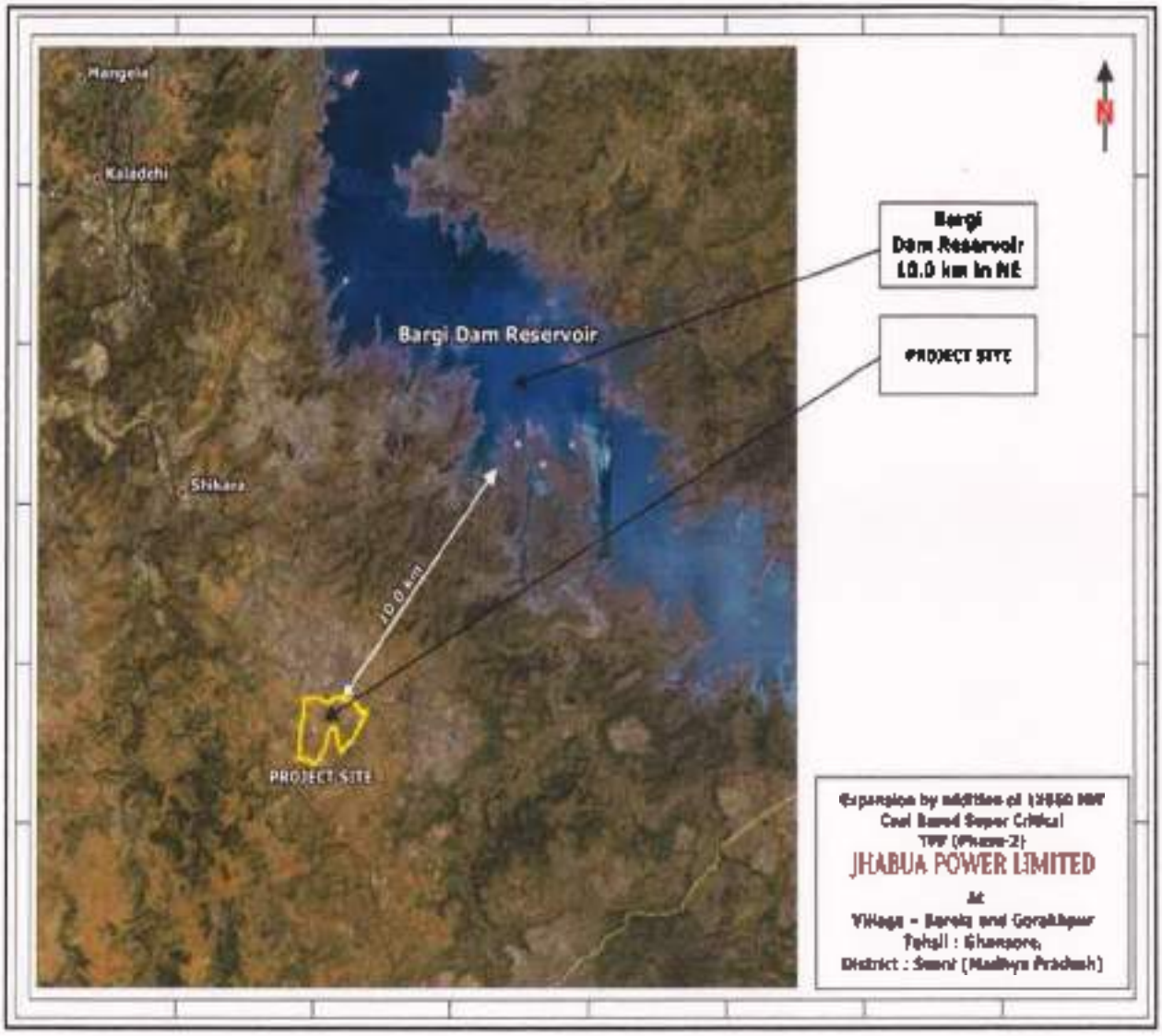


FIGURE-3
AERIAL DISTANCE & DIRECTION OF BARGI RESERVOIR

1.



1.3.4 National Park and Wild life Sanctuaries

M/s Jhabua Power Ltd. has followed the guidelines of Ministry of Environment & Forest for site selection of coal based thermal power stations. As per MoEF guideline location of thermal power stations are avoided within 25 Km of the outer periphery of the National park and wildlife sanctuaries. The nearest national park is Kanha & Pench National park is 68 Km & 120 Km respectively which is far away from the M/s Jhabua Power Plant. Satellite Imaginary showing the aerial distance of Kanha & Pench national park is given in **Figure 4 & 5.**

FIGURE-4
AERIAL DISTANCE OF KANHA NATIONAL PARK

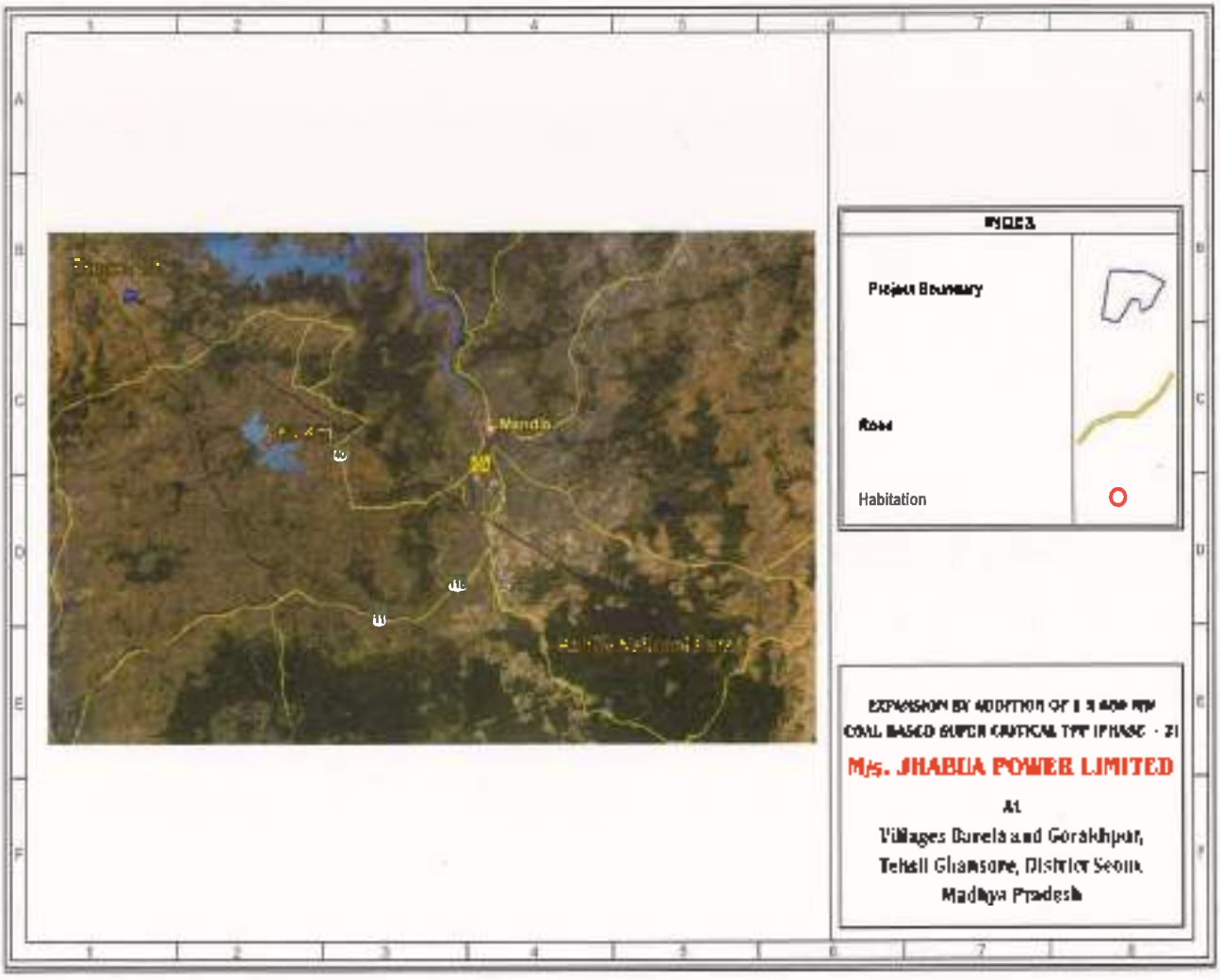
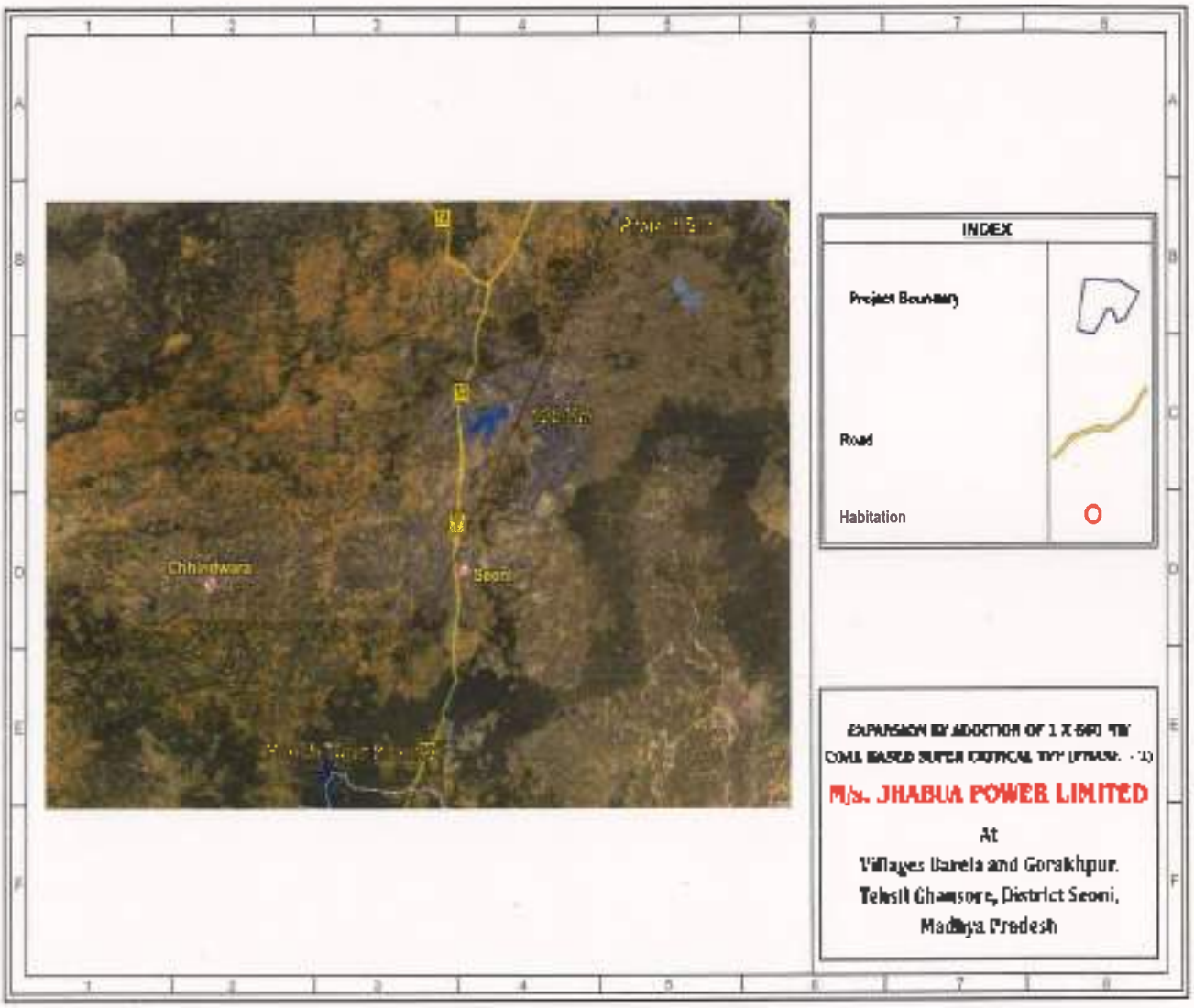


FIGURE-5
AERIAL DISTANCE OF PENCH NATIONAL PARK



2.0 WILDLIFE CONSERVATION PLAN

2.1 Forest Blocks in Study Area

The records of forest department and survey of India maps reveal that there are 11 forest blocks within 10-km radius of the proposed project site and details are presented in **Table-2.**

TABLE-2
DETAILS OF FOREST IN STUDY AREA

Sr. No.	Name of the Forest Block	Distance from Project Site (km)	Direction from Project Site
Forest Blocks in 10-km radius			
1	Roto (RF)	3.0	N to SE
2	Barwakchhar (RF)	7.5	N to NE
3	Katori (RF)	9.0	NW
4	Dhoma (RF)	3.0	NW
5	Diwara (RF)	4.7	NW
6	Chansore (RF)	7.5	S
7	Bhattekhan (RF)	1.5	WNW to SW
8	Bichhua (RF)	3.5	ESE
9	Jaitpur (RF)	8.0	SW
10	Barela (RF)	0.0	SE
11	Partapgarh (RF)	8.0	ESE

Source: EIA report of JM Environet

Forests of Seoni district are mainly open scrub type and some dry deciduous can be broadly classified into two major groups e.g. Moist Tropical Forests and Dry Tropical Forests. There is no clear dividing line between these two forest groups. One group of forest gradually merges with the other. According to Champian & Seth's revised classification of Forest types of India, these forests have been further classified, as detailed below, into different types and sub-types depending upon physiognomy, moisture conditions, floral composition and other variables.

Group – 1	Open scrub forest
Group 5	Tropical Dry deciduous forests.

The second degradation stage of dry deciduous forest is this type of forest. It is an open forest but typically, formation of original forest is lost and the trees stand apart singly or in small groups particularly in valleys in more or less heavy grass in which certain fire resistant plants persist. These fire resistant plants gradually and slowly try to establish themselves as trees. However, in most of the cases such plants do not get established as trees because of fire and other biotic factors.

All the above described climatic types are susceptible to be reduced to open savannah type. The intensive biotic interference in such forest areas causes conspicuous presence of grass which is otherwise a secondary feature in those forests (Climatic type). Some of the grass species encountered in these types of forests are *Oryza rufipogon, Eragrostis unioloides, Heteropogon contortus, Arundinella setos and Saccharum spontaneum.*

Though the preponderance of the grasses is the characteristic features in these forests, the tree species found to be occurring here are *Emblica officinalis, Bridelia*

retusa, Acacia nilotica, Acacia sundra etc. These trees have very short boles and are mostly crooked and unsound. In fact, scattered bushes and such low trees among grasses are a very common composition observed in these savannah forests of this Division. Most of these degraded forest blocks are the result of long and continued over exploitation. The resultant effect has been reduction in natural regeneration of many tree species leading to complete wiping out of established seedlings of dominant species.

2.2 Objectives of Study

The present study was undertaken with the following objectives:

- To assess the nature and distribution of vegetation in and around the proposed project site
- To assess the distribution of animal life spectra;
- To understand the productivity of the water bodies;
- To ascertain migratory routes of fauna and possibility of breeding grounds.
- Identification of suitable area of minor wildlife
- Preparation of wildlife conservation plan

2.3 Methodology Adopted for the Survey

To achieve the above objectives a detailed study of the area was undertaken in 10-km radius area as proposed project site as centre. The different methods adopted were as follows:

- Compilation of secondary data with respect to the study area from published literature and Government agencies;
- Generation of primary data by undertaking systematic ecological studies in the area; and
- Gathering data for ethnobiology.

2.4 Floristic Composition- Primary Survey

Floristic Richness

During field survey, maximum 118 number of plant species were recorded from the study area. The list of plant species recorded in the study area is given in **Table -3.**

Life form spectrum is a reflection of plant community. A plant community is governed by several factors like climatic, edaphic, topographic and biotic. Even local variations in environment affect components of plant community.

In the study area, maximum numbers of species are therophytes, followed by phanerophytes. These classes are followed by hemicryptophytes and geophytes. Hydrophytes were found in very few numbers.

Presence of large number of phanerophytes (shrubs and trees) and therophytes (annuals or herbaceous vegetation) indicates semiarid to tropical vegetation structure.

Hemicryptophytes (predominantly grasses and sedges) were found to be significant in the area. These indicate fertile and wet soil in upper layer of soil profile. Recorded plant species from forest area are presented in **Table -3.**

TABLE -3

LIST OF FLORA INSTUDY AREA

SR. NO	Common Name	Botanical Name
1	Khair	*Acacia cathechu*
2	Neem	*Azadirachta indica*
3	Pipal	*Ficus religiosa*
4	Sagon	*Tectona grandis*
5	Khair	*Acacia cathechu*
6	Australian Babul	*Acacia auriculaeformis*
7	Babul	*Acacia nilotica*
8	Haldu	*Adina cordifolia*
9	Bel	*Aegle marmelos*
10	Kala Siras	*Albizzia lebbek*
11	Safed Siras	*Albizzia procera, Benth*
12	Dhavda	*Anogeissus latifolia*
13	Kadamba	*Anthocephalus cadamba*
14	Kaju	*Anacardium occidentale*
15	Sitafal	*Annona squamosa*
16	Vanbhindi	*Abelmoschus crinitus*
17	Bhindi	*Abelmoschus esculentus*
18	Kanghi	*Abutilon indicum*
19	Apamarg	*Achyranthes aspera*
20	Cholai	*Amaranthus viridis*
21	Adusa	*Adhatoda vasica*
22	Kachnar	*Bauhinia variegata*
23	Semal	*Bombax ceiba*
24	Taad	*Borassus flabellifer*
25	Palas	*Butea monosperma*
26	Aamta	*Bauhinia malabarica*
27	Bottle brush	*Callistemon citrinus*
28	Amaltas	*Cassia fistula*
29	Sandan	*Cassia siamea*
30	Kumbhi	*Careya arborea*
31	Nariyal	*Cocus nucifera*
32	Dahivan	*Cordia dichotoma*
33	Lasoda	*Cordia macleodii*
34	Lasora	*Cordia myxa*
35	Chirota	*Cassia tora*
36	Mandupkarni	*Centella asiatica*
37	Safed Musli	*Chlorophodium arundinaceum*

38	Hurhur	*Cleome gynandra*
39	Jungli arabi	*Colocasia indica*
40	Kali Musli	*Curculigo orchioides*
41	Jangli Haldi	*Curcuma aromatica*
42	Aak	*Calotropis gigantea*
43	Safed Aak	*Calotropis procera*
44	Kadbur	*Canthium parviflorum*
45	Karonda	*Carissa opaea*
46	Raat ki Rani	*Cestrum nocturnum*
47	Shishu	*Dalbergia sisoo*
48	Tendu	*Diospyras melanoxylon*
49	Kala shisham	*Dalbergia latifora*
50	Gulmohar	*Delonix regia*
51	Chota gulmohar	*Delonix elata*
52	Kala Tendu	*Diospyros montana*
53	Kala Dhatura	*Datura metel*
54	Dhatura	*Datura stramonium*
55	Jangli Mehandi	*Dodonaea viscosa*
56	Amla	*Emblica officinalis*
57	Thuar	*Euphorbia ligularia*
58	Hirankhuri	*Emilia sonchifolia*
59	Shankhpushpi	*Evolvulus alsinoides*
60	Van tulsi	Eranthemum purpurascens
61	Pipal	*Ficus religiosa*
62	Kakai	*Flacourtia indica*
63	Katha	*Feronia limonia*
64	Paraspipal	*Ficus arnottiana*
6566	Bargad	*Ficus bengalensis*
67	Anjir	*Ficus carica*
68	Gular	*Ficus racemosa*
69	Silver Oak	*Grevelea robusta*
70	Dhaman	*Grewia tiliifolia*
71	Gudhal	*Hibicus rosa-sinensis*
72	Shakarkand	*Ipomoea batata*
73	Jacaranda	*Jacaranda mimosadfolis*
74	Kunda	*Jasminum multiflorum*
75	Ratanjot	*Jatropha curcas*
76	Ratanjot	*Jatropha gossypifolia*
77	Lendia	*Lagerstroemia parviflora*
78	Subabul	*Leucaena leucocephala*
79	Kathbel	*Limonia acidissima*
80	Mahndi	*Lawsonia inermis*

81	Mahua	*Madhuca indica*
82	Aam	*Magnifera indica*
83	Kaari	*Miliusa Tomentosa*
84	Shahtut	*Morus alba*
85	Mithi Neem	*Murraya koenigii*
86	Chui-mui	*Mimosa pudica*
87	Kamal	*Nelumbo nucifera*
88	Kaner	*Nerium indicum*
89	Van Tulsa	*Ocimum basilicum*
90	Tulsi	*Ocimum sanctum*
91	Van Singhada	*Ottelia alismoides*
92	Jangle Jalebi	*Pithecellobium dulce*
93	Codachinta	*Peltophorum peterocarpum*
94	Champa	*Plumeria rubra*
95	Ashok	*Polyathia longifolia*
96	Karanj	*Pongamia pinnata*
97	Gajar ghas	*Parthenium hysterophorus*
98	Bhui amla	*Phyllanthus amarus*
99	Sarpgandha	*Rauvolfia sepentina*
100	Chandan	*Santalum album*
101	Ritha	*Sapindus emarginatus*
102	Kusum	*Schleichara oleosa*
103	Kulu	*Sterculia urens*
104	Jamun	*Syzygium cumini*
105	Makol	*Solanum villosum*
106	Gorakhmundi	*Sphaeranthus indicus*
107	Imli	*Tamarindus indica*
108	Arjun	*Terminalia arjuna*
109	Sagon	*Tectona grandis*
110	Deshi Badam	*Terminalia catappa*
111	Paras pipal	*Thespesia populnea*
112	Singhada	*Trapa natans*
113	Gokharu	*Tribulus terrestris*
114	Vajradanti	*Tephrosia purpurea*
115	Jangli pyaz	*Urginea indica*
116	Ashwagandha	*Withania somnifera*
117	Bada Gorakhu	*Xanthium strumarium*
118	Ber	*Ziziphus xylopyra*

Forest Officer
Seoni Division (M.P.)

Analysis of Flora

- The Red Book Data of species does not include any of these species.
- As the above species are not endemic, rare or endangered, any ecological benign inevitable developmental activity may be undertaken precautionary measures of ecological sustainability e.g. controlled noise level, controlled emission and green belt development.
- The study area did not record the presence of any of the Critically Threatened species.

2.5 Endangered Plants

Floristic studies were conducted October 2010-January 2011 to know the presence of any endangered/threatened/endemic plant species in plant area and surrounding 10-km radius. The study area did not record the presence of any critically threatened species. The records of Botanical Survey of India and Forest department also did not indicate presence of any endangered and or vulnerable species in this area.

2.6 Fauna-Primary Survey

No national park or sanctuary is present in the study area. Common mammals, birds and reptiles are observed. Domestic animals were only noted during the study period. Wild animals are not found in the study area. List of fauna is presented in **Table 4.**

The observed and recorded wild animal species in 10-km radius and their conservation status as per Wildlife (Protection) Act, 1972 has been verified. List of fauna is presented in **Table 4.**

TABLE 4

LIST OF FAUNA IN STUDY AREA

S. No.	Common Name	Zoological Name
1.	Brahminy myna	*Sturnus pagodarum*
2.	Crow - pheasant	*Cendropus sinensis*
3.	Rat	*R. rattus*
4.	Jungle crow	*Carvus macrorhynehas*
5.	House crow	*Carvus splenrhynehas*
6.	Crow - pheasant	*Cendropus sinensis*
7.	Black drongo	*Dicruus adsimilis*
8.	White bellied drongo	*Dicruus caeruleesceens*

9.	Little erget	*Egretta garzetta*
10.	Red vanted bulbul	*Pycnonotus cater*
11.	Spotted dove	*Streptopelia chinensis*
12.	Brown wood dove	*Streptopelia senegalensis*
13.	Brahminy myna	*Sturnus pagodarum*
14.	Common Babblers	*Turoides caudatus*
15.	Large Brown flying squirrel	*Petaurista petaurista*
16.	White tailed wood rat	*Rattus blanfordi*
17.	Frog	*Rana Tigrina*
18.	Common Lizard	*Varanus species*
19.	Hanuman / Langur	*Presbytis entellus*
20.	Siyar / Jackal	Canis aureus
21.	Newla /small Indian Mongoose	Herpestes auropunctatus
22.	Rat	R. rattus
23.	Monkey	Maaca mulata
24.	Bater / Common Quail	Coturnix asistica
25.	Kabutar / Blue Rock Pigeon	Columba livia
26.	Hariyal / Green Pigeon	Treron Phoenicoptera
27.	Bagula / Grey Heron	Ardea cinerea
28.	Chil / Brahminy Kite	Haliaster Indus
29.	Koyal	Eudynamys Scolopacea
30.	Koyal/ Kuku	Cuculus canorus
31.	Nilkant / Indian Roller	Corocias bengalensis
32.	Jungle Maina	Acridotheres fuscus
33.	Jungle Kawua / Jungle Crow	Corvus macrorhyncos
34.	Desi Kawua / Common Crow	Corvus Splendense
35.	Totta / Roser Ringed Parakeet	Psittacula Krameri
36.	Girglt /Garden Lizard	Calotes versicolor
37.	Karant / Common Krait	Bungarus Casruleus

38	Kalang / Cobra	Naja naja naja
39	Dhaman / Rat Snake	Ptyas mucosus
40	Phursa / Russell's Viper	Viperas russelli
41	Panipa snap / Water snake	Enhydris enhydris
42	Chelwa	Cheia atpar
43	Rohu	Labeo rohita
44	Tangra	Mystus bleekeri
45	Mangur	Calarias mangur
46	Common mongoose	Herpestes edwardii

Birds, Reptiles, Butterflies, Amphibians and Mammals were recorded which belong to Schedule-II animals and rest belongs to Schedule-III and IV and V of Wildlife (Protection) Act, 1972. The list of fauna recorded in the study area is given in **Table 4.**

Analysis of Fauna

- There is no National park, Wild life Sanctuary, Biosphere Reserve, Wild life Corridor, Tiger Reserve within 10 km radius area from the proposed project site.
- Rare, endemic & threatened species, etc are not found with 10 km radius area of the proposed project site.
- No Schedule -1 species were observed in the study area during the field survey.

2.7 Details of observed scheduled-II animal species

1. *Langur (Presbytis entellus)*

Langur (Presbytis entellus) is a lanky, long-tailed monkey of Haryana, with bushy eyebrows and a chin tuft. It has a small slender body with long tail and long hands. 'Langur' means 'having a long tail'. The langur is gray washed with buff or silvery shades, often with a white head, but with a black face. It has crests of hair on the head. It is found in India, Tibet, Nepal, and Sri Lanka. It lives in humid forests

Size:

The male weighs 9 – 15 kg, the female weighs 4 – 8 kg but in the Himalayas it grows much larger. Most of them are of a slender build, about 2 feet long with a 2 1/2 foot tail.

Behavior:

Langurs are easy going. A high ranking female may sometimes slap a lower one. A dominant male stares at a subordinate, slaps the ground, grimaces, crouches, and suddenly stands again, grunting. He then tosses his head and chases the other one, hitting and even biting him. A subordinate will often come to the dominant one, present-turn, a sign of submission - then lie down while the dominant one grooms him. They spend 2 – 4 hours at midday resting and grooming each other. Langurs live in groups; the group consists of many females and one or two dominant males. Males chase each other to defend their territory and to establish mating rights. In Haryana, the Leopards are the main threats to Langurs. Using their speed and climbing ability they bring down the Langurs quite easily.

Reproduction:

The female breeds at 3 1/2 years of age. Gestation lasts 200 days. They usually only have one young. She nurses for 10 – 12 months. Births are spaced every 2 years or so. The young is dark brown at birth and stays this color for 3 – 5 months. The infant clings to its parent unaided. Other females stay with the mother to touch and lick the infant and pass it around among them.

Description:

Langurs don't like water and cannot swim. They can jump up to 10 meters, and cross small rivers and streams. They sleep on trees and come down to ground for foraging and to drink water. They are excellent climbers and can jump from tree to tree when threatened. Also they travel on ground from place to place in small groups. Hindus in India worship these animals and they can be found following worshipers in temples who offer them food. Normally one young is born and the mother Langur carries the baby for about six months. Being mammals the young ones are fed with milk. The Langur population in India is quite high and hence they are not so threatened.

2. Monkey (Macacca Mullata):

Description

The Rhesus macaque is brown or grey in color and has a pink face, which is bereft of fur. Its tail is of medium length and averages between 20.7 and 22.9 cm (8.1 and 9.0 in). Adult males measure approximately 53 cm (21 in) on average and weigh about 7.7 kg (17 lb). Females are smaller, averaging 47 cm (19 in) in length and 5.3 kg (12 lb) in weight.

Distribution and Habitat

Rhesus macaques are native to northern India, Bangladesh, Pakistan, Nepal, Burma, Thailand, Afghanistan, Vietnam, southern China, and some neighboring areas. The Rhesus monkey has the widest geographic ranges of any nonhuman primate, occupying a great diversity of altitudes throughout Central, South, and Southeast Asia. Inhabiting arid, open areas, Rhesus macaques may be found in grasslands, woodlands and in mountainous regions up to 2,500 m (8,200 ft) in elevation. They are regular swimmers. Babies as young as a few days old can swim, and adults are known to swim over a half mile between islands, but are often found drowned in small groups where their drinking waters lie. Rhesus macaques are noted for their tendency to move from rural to urban areas, coming to rely on handouts or refuse from humans.[3] They have become a pest in some areas, perceived as a possible risk to public health and safety.

A diurnal animal, the Rhesus macaque is both arboreal and terrestrial, mostly herbivorous feeding on leaves and pine needles, roots, and the occasional insect or small animal. They have specialized pouch-like cheeks, allowing it to temporarily hoard its food.

3. Common Mongoose (Herpestes Edwardii)

The Indian Gray Mongoose or Common Grey Mongoose (Herpestes edwardsii) is a species of mongoose found in southern India and Sri Lanka. The gray mongoose is commonly found in open forests, scrub lands and cultivated fields, often close to human habitation. It lives in burrows, hedgerows and thickets, among groves of trees, taking shelter under rocks or bushes and even in drains. It is very bold and inquisitive but wary, seldom venturing far from cover. It climbs well. Usually found singly or in pairs. It preys on rodents, snakes, birds' eggs and hatchlings, lizards and variety of invertebrates. Along the Chambal river it occasionally feeds on gharial eggs. It breeds throughout the year.

Description

The Indian grey mongoose, or common grey mongoose is a medium sized tawny or yellowish grey with a lighter underside, darker feet (this separates it from the syntopic Small Asian Mongoose), and dark red tail tip. They have a reddish tint to their heads. Their tail length equals their body length. Body length: 14-17 inches (36-45cm) Tail length: 17 inches (45 cm), werght: 2-4 lb. (0.89-1.7kg). Males are significantly larger than the females

3.0 THREATS TO WILDLIFE AND THEIR HABITAT

Habitat Degradation

The herbivores need leaf, fruit and flowers etc of various plants to browse. The wild animals also need vegetation as a cover. Maximum forest open scrub areas exist in study area in degraded condition. If this process continues, degradation of the open scrub areas will proceed in a galloping speed. This need to be checked and suitable alternatives should be found out and sites having some depth of soil deposit need to be afforested by species suitable to the site condition.

Soil erosion and Loss of Moisture

The area shall be prone to erosion due to absence of vegetation; steeper slope; activities like development of industrial areas and construction of house besides grazing of cattle and movement of vehicles. Moisture loss shall also be acute unless the ground is clothed and other measures are taken. Intensive soil conservation measures are to be adopted to restore the site condition. If these conditions are allowed to continue and further aggravate due to mining and other ancillary activities unchecked, the hill slopes shall further degrade to a point of no return. The wild animals shall suffer due to want of water, cover and food. The perennial and seasonal streams shall dry up not only to the detriment of wild animals but also the natural vegetation. The surrounding area within the Zone of Influence of 10Kms also shall also suffer similar fate if remedial measures are not taken.

Water Conservation

The requirement of water for the wildlife is limited. At present only a few species exist in the area like jackal, mongoose, snakes, rats, lizards etc. But gradually when adequate measures are ensured to grow vegetation and protection is provided more wildlife may prefer this area. But with mining water shall be scarce for them. To meet their water requirement, few existing seasonal streams should be taken care and managed to the possible extent to conserve rain water till summer season is over.

Dependence on Forest

Local people shall continue to depend on the small depleted forest patches of the area for their fuel, fencing, construction, food, fodder and heating needs. Once good vegetation comes up may be due to protection or afforestation, the local tribal will collect fuel wood, small timber etc for their bonafied use. Therefore, while planning for gap planting or protection to the existing vegetation it should be ensured that they should not be illicitly felled. For this purpose farm and social forestry with suitable species mix need be taken up in villages. They should also serve as niches for wild animals.

Lack of Awareness

All the above measures need involvement of local villagers, VSS members, youth, women of the locality and employees of various government and non-government

department. But at present such awareness is lacking. Besides lot of people shall be inducted to the area who are not aware of the need for conservation of wildlife. Unless such awareness is promoted through different means any effort in this direction shall be futile.

Garbage & Liquid Wastes

Due to daily congregation of huge work force and others lots of solid as well as liquid wastes shall accumulate in and around the mine. They shall not only cover the ground, they may be ingested by wild animals causing their death. Regeneration shall also be affected. They may even choke the streams and water bodies. The liquid wastes shall contaminate the soil and if drunk by thirsty animals may cause diseases in them or even death. This may even trigger epidemics.

Mitigation Measures

According to the wildlife protection act 1972 no threatened or endangered species of animals present in the study area. Hence the wild animals can find shelter there if they are made conducive to their stay with proper food, water cover and safety from fire and poaching. Hence the following steps are recommended for providing the same.

Protection and Impact of Forest Patches

There are good numbers of minor fauna found in forest area which are in degraded condition. They came for grazing from down the hillock slopes. Hence these patches need be fully protected and planted up with species that can establish there in order to provide food, cover and safety for them. Of course, rain fall appears to be quite sufficient. Domestic livestock also do visit the area, though in small number. Forest Guards can be engaged to provide protection to the area and prevent fire to the grass land during dry months. They can seek support from the mining work force if needed. As it is fairly flat ground, fire watchers or additional staff may not be needed. Mixed plantations of indigenous species, preferably with edible fruit, flower, leaves etc. should be grown. The following planting technique shall be adopted.

Raising Plantation

Plantation of hardy indigenous species, preferably those found in the neighbouring hill slopes can be planted up in 0.5 m^3 pits, filled with borrowed valley soil and organic manure. Application of Rhizobium or Azotobactor shall also be used for establishment of seedlings. They should be planted up with 2 years old healthy saplings immediately after the onset of monsoon at a spacing of 2.5mX2.5m. Bio-pesticides like neem oil cake etc can be applied, as the area is white ant prone. For all plants grown on the sloping ground, half moon trenches may be provided. Planting can also be taken up on 0.5m width x 0.5m deep x 5m length staggered trenches dug up along the contour at 5m intervals. This will help soil and moisture conservation and make water available to the plants. Clod mulching can be done immediately after the rains to prevent evaporation losses due to capillary action. The species recommended are Amla, Karj, Khamir, Gulmohar, Sisoma, Bahada, Bara, Neem, Mohua, Kachanar, Arjun, Pentaforam,

Jack fruit, Mango, Gambhari etc. Seeds of edible grass or berries may be sown embedded in soil/cow dung pellets or slips may be planted for improving fodder availability. Causalities should be replaced in 1st, 2nd and 3rd year with well grown seedlings in later part of July in 1st year and late June succeeding years. The plantation should be maintained for 5 years.

Soil and Moisture Conservation Measures

Soil erosion and moisture loss due to unchecked runoff during torrential rains may increase further, thereby depleting the hillock slopes and affecting agriculture in the surrounding areas. Hence they should be checked. Hence, all gullies should be check dammed with rubble and vegetative barriers. This will also provide drinking water for smaller wild animals like hares, snakes, lizards, ground birds.

Awareness Promotion

Awareness should be created among the mining work force through different programmes on wildlife and forest conservation so that they do not harm the wild animals and their habitat. This can be done through observation of different functions like Vana Mahotsava and wildlife week etc. Talk by prominent people, film shows and visit to PA's, Zoos and Museums etc.

Measures to be taken in the Immediate Surrounding of the Power Plant

The road transportation etc shall definitely have adverse impact of the surrounding area of 10 km radius (Zone of Influence). Of course, its impact beyond this zone can not be completely ruled out. But, there is bound to be much pronounced impact on the immediate vicinity, particularly the slopes of the plateau on which the lease shall be operational. Hence, it is proposed to separately indicate remedial measures for the hill slope and other surrounding areas including villages.

Forest Protection

The slopes flanking are quite steep, though quite rich in floral diversity. Of course the vegetation is sparsely distributed due to human pressure. There are pronounced gullies descending down the slopes. There are also perennial streams. Shifting/fixed cultivation is also practiced in pockets. Hence it is not only essential to protect whatever vegetation exists, but also to enrich the same. Of course the soil depth appears to be quite good, as seen from the plantations raised on hill slopes of other neighbouring hills. There are only 3 V.S.S. now. More VSS may be formed to cover the entire hill slope and they should be strengthened and incentive may be provided to them. The blank areas may be planted up with indigenously occurring species. Similar planting technique may be adopted as indicated for the area within the lease. Weeding operation should always be done along the contour.

Fire Protection

With protection and additional plantation, lot of leaf litter shall be generated and grass shall dry up during summer months to make them combustible. This will not only affect the ground vegetation, this may create drier conditions and burn

the young ground dwelling animals and birds, their young ones and eggs. As most fire is man made and accidental, the local people may be sensitized regarding adverse effect of fire. Fire lines may be cleared before summer months and six fire watchers may be engaged out of local youth in fire protection work during 5 months from February to May. Four watch posts at vantage points along the lip of the plateau may be erected for providing clear view of the entire hill slope. The watchers may be provided with simple fire fighting tools like spades, bill hooks, axes, buckets and brooms etc. The mining force may provide help to fight fire when required.

Soil and Moisture Conservation

All gullies should be plugged through check dams of rubble, masonry or vegetation at suitable intervals depending on the slope to reduce the velocity of flowing water and to recharge the ground water. This shall also arrest soil loss. In other slopes, staggered contour trenches of 0.5m x 0.5m x 5.0m may be dug at suitable intervals depending on slope. The dug out soil should be placed on down hill side partly covering the trench and planting can be taken up on the deposited soil.

Grazing

As stall feeding is not in practice for the livestock here, they roam freely destroying forests and compacting the soil. The cattle breed can be improved through Artificial Insemination and stall feeding encouraged. Besides, the V.S.S. should sensitize people not to allow grazing of cattle in the forest areas. Such grazing causes spread of communicable disease to the wild animals.

Protection and Improvement of forest patches

In this district, forests are more or less confined to hill slopes. But most of them have been laid barren due to different human activities including 'Podu' or shifting cultivation. In order to provide habitat for wildlife it is essential not only to protect them, but also clothe them with vegetation of indigenous species. While V.S.S. Should be formed and strengthened all around the forest patches, R.F. or otherwise, they should be planted up following the techniques indicated for the area within the lease. Similar soil and moisture conservation measures besides fire prevention measures may be taken. For this 4 fire watchers out of local youth should be appointed for 5 months every year. These measures shall help in improving much needed water requirement of the area. The 'Jhola' cultivators are very much dependant on such water flowing in perennial streams.

Social Forestry

Due to efforts made for Social Forestry Project in the past many good village woodlots are still seen in the district. In order to improve wildlife status it will be necessary to raise village woodlots, institutional planting, planting on farm bunds, back yards, road avenues and village commons. Different ornamental, fuel, fodder, fruit, flower trees like Amla, Karj, Khamir, Gulmohar, Sisoma, Bahada, Bara, Neem, Mohua, Kachanar, Arjun, Pentaforum, Jack fruit, Mango,Kadam etc. Rain tree, Ficus, Chhatian, Peltoforum, Mahagony, Cashew nut, Karanja, Neem, Red sanders, Sandal wood, Paladhua(*Erithrina*), Teak, Akasmalli, Spathodia,

Jacaranda, Bara Koli (*Zyzyphus*), Aswattha, Simuli, Sunari and tropical pines etc can be taken up depending on its suitability and site conditions. Two year old healthy seedlings should be planted on 0.5 m3 pits with the involvement of individuals, Panchayat, V.S.S., concerned institutions, Forest Department or NGOs, who should also take care of their maintenance. This will also help bring down pressure on the forest patches occurring in the area, while providing 'niches' for different wild animals and birds.

Providing Alternate Avocation (Eco-Development)

Forests are usually depleted due to dependence of the people on them for their livelihood. If alternate avocations are provided to those not finding employment in the mines, particularly elderly, women and physically challenged persons they shall continue to depend on these depleted forests. They can be provided support for vegetable/mushroom growing, horticulture, diary, apiary, poultry, tailoring, embroidery, indigenous food processing etc and their marketing. These products shall find market in the industrialized belt here. Similarly support for small technical jobs like repairs to household equipments, radio, T.V., bicycle, two-wheeler, electric wiring etc can be provided to those who have aptitude for the same. They can also be encouraged to set up small shops, tea-stalls etc. For all these they may be linked to SHGs (self-help group) and/or financial institutions.

Awareness Promotion

The wildlife, whose status may improve due to different measures suggested above, shall not be safe unless the local people, particularly the younger ones are made aware of the need for conservation. Hence efforts should be made in schools and colleges and V.S.S. to promote awareness. This can be done by celebrations of different conservation functions, talks, film shows, audio-visual aids, brochures, posters, competitions, photography and visit to PA's, Zoos, Museums and other wildlife areas etc.

4.0 Financial Assistance

The details of financial assistance to wild conservation plan is presented in **Table-5**. Wildlife Conservation will be implemented for 10 years period.

TABLE-5

BUDGET ESTIMATION FOR WILDLIFE CONSERVATION

Sr. No.	Particulars of Activities	Capital cost (Rs. In Lakhs)	Recurring cost (Rs.In Lakhs)
1	Protection of forest patches and regeneration of habitat.	2.0	1.0
2	Raising plantation in forest area.	3.0	1.5
3	Soil & moisture conservation measures(construction of Field bunds & loose boulder check dams, Ring basin structure)	1.5	1.5
4	Social/Agro forestry	0.75	0.75
5	Providing strengthening lively-hood initiative (Alternative income/employment generation schemes through Self Help Groups)	7.85	3.0
6	Wildlife protection awareness programme and community workshops (through exhibitions, film shows, awareness talks from various experts).	2.0	1.0
7	Rescue of animals with in study area.	2.0	2.0
Total		**19.1**	**10.75**