JPL/EMD/F-30/4x250MW/2021/ 178
26/11/2021

The Regional Director (S),
Ministry of Environment and Forests,
Regional office (WCZ)
Ground Floor, East Wing
New Secretariat Building
Civil Line, Nagpur - 440001 (Maharashtra)

Sub.:-**Submission of Half Yearly Environmental Clearance Compliance Reports of Stage-I (2x250MW) and Stage-II (2x250MW) of O.P. Jindal Super Thermal Power Plant at village Tamnar, Distt.- Raigarh (C.G.) for the period of April, 2021 to September, 2021.**

Ref.:- **1.Environmental Clearance No.J.13011/15/93-IA.II (T) dt. 24/09/1997 & Revalidated on 19/08/2004 of Stage–I (2 x 250 MW), J-13011/8/2006-IA.II (T) dt.08/06/2006 of Stage –II (2 x 250 MW).**
2. Amendment in Environmental Clearance issued vide letter No. J.13011/8/2006-IA.II (T) dt.25/04/2007.
3. MoEF Office Memorandum No. J-11013/41/2006-IA.II (I) dt.06/04/2011.
4. Amendment in Environmental Clearance issued vide letter No. J.13012/8/2006-IA.II (T) dt.03/01/2019.
5. Amendment in Environmental Clearance issued vide letter No. J.13011/8/2006-IA.II (T) dt.13/08/2021.

Dear Sir,

This has reference to the above cited subject. Enclosed please find herewith Half Yearly Environmental Clearance Compliance Reports of Stage-I (2x250MW) and Stage-II (2x250MW) and compliance of additional conditions of O.P. Jindal Super Thermal Power Plant at village Tamnar, Distt.- Raigarh (C.G.) along with Environmental monitoring data for the period of ***April, 2021 to September,2021*** in soft copy (through e-mail).

Trust that you will find the above information in order.

Thanking you,

Yours faithfully,
For **JINDAL POWER LIMITED**

Shiv Kumar Singh
General Manager -EMD
Encl. : As above.
Cc:

The Director, Ministry of Environment, Forest and Climate Change Indira Paryavaran Bhavan Jorbagh Road, New Delhi - 110 003	The Zonal Officer, Central Pollution Control Board, 3rd Floor,Sahkar Bhawan, North T.T.Nagar, Bhopal-462 003 (M.P)
The Member Secretary, Chhattisgarh Environment Conservation Board, Paryavas Bhavan, North Block Sec.19 Atal Nagar, Raipur (CG) -490099	

Jindal Power Limited
CIN No. : U04010CT1995PLC008985
Corporate Office Jindal Centre, 12 Bhikaiji Cama Place, New Delhi 110 066
T +91 11 4146 2000 F +91 11 2616 1271 E info@jindalpower.com W www.jindalpower.com
Registered Office Tamnar 496 107, District Raigarh, Chhattisgarh

Jindal Power Limited, Tamnar

Compliance Report of Environmental Clearance and additional conditions for Stage-I (2x250MW) of O.P. Jindal Super TPP ,Tamnar vide letters No.J.13011/15/93-IA.II (T) & J.11013/41/2006-IA.II (I) dated 24/09/1997 & 06/04/2011

Sl. No	Conditions	Compliance Status
(i)	All the conditions stipulated by Madhya Pradesh Pollution Control Board vide their letter No. 2077/TS/EZ/MPPCB/96 dated 07/02/1997 should be strictly implemented.	All the conditions stipulated by the Madhya Pradesh Pollution Control Board vide their letter No. 2077/TS/EZ/MPPCB/96 dated 07/02/1996 are strictly implemented.
(ii)	**(As amended vide MoEF letter No. J-13011/15/2003-IA. II (T) dt. 24/06/05)** : A bi-flue stack of 220 m height and internal diameter of 4.75 m with continuous monitoring system shall be installed for 2 x 250 MW units as Phase-1. For adequate dispersal of gaseous pollutants, exit velocity will be maintained at 25 m/sec by installing ID fans and continuous record of exit velocity shall also be maintained and submitted to the Ministry on a yearly basis.	A bi-flue stack of height 220 m and internal diameter of 4.75 m with continuous on-line monitoring system has been already installed. Exit velocity of 25 m/s is maintained. Records of exit velocity has been maintained and report for the period from April, 2021 to September, 2021 is enclosed as ***Annexure-I.***
(iii)	Electrostatic Precipitator having efficiency of not less 99.8% should be installed. It should be ensured that particulate emission would not exceed the prescribed limit of 150 mg/Nm^3.	Electrostatic Precipitators (ESP's) of efficiency >99.9% have been installed. The ESP's are designed to achieve particulate emission below 50 mg/Nm^3. Particulate Matter monitoring report for the period from April, 2021 to September, 2021 is enclosed as **Annexure-I**.
(iv)	Closed Circuit Cooling Device should be provided and it should be ensured that only minimum water is drawn for makeup purposes. The requirement of water for the project will be met by constructing 18 mt high dam across Kurkut River involving a cost around Rs.48 crores. The forest area coming under submergence shall be identified and separate clearance under the Forest (Conservation) Act shall be obtained by the project authorities prior to commissioning the work on the project.	Induced Draft Cooling Tower with closed circuit has been installed and a COC > 5 is maintained to ensure that minimum water is drawn for make-up purpose. An 18 m high dam across Kurket river has been constructed and is in operation. Around 177.542 Ha. forest area had been identified under submergence area and a separate clearance from Chhattisgarh Govt. Forest Division has obtained vide letter No.F-7-19/03/10-2 , Raipur dated 10/10/2005 under the Forest (Conservation) Act .
(v)	Adequate space should be provided for installation of the gas desulphurisation plant in future for control of sulphur dioxide.	Adequate space has been provided for installation of gas desulphurisation plant in future for control of sulphur dioxide.
(vi)	Acquisition of land should be restricted to 614 ha with the following break up:- Power plant-360 ha Ash Dyke-198 ha ,Colony-56ha. No additional area will be acquired for Phase-II including requirement for fly ash disposal.	Complied.
(vii)	Noise level should be limited to 85 dBA and regular maintenance of equipments be undertaken. For people working in the area of	The stipulated noise level is being maintained through installed acoustic hoods & enclosures and regular maintenance of equipments.

	generator halls & other high noise area, ear plugs should be provided.	Earplugs & Earmuffs have been provided to the employees working in the noise generating areas.
(viii)	For controlling fugitive dust, regular sprinkling of water in coal handling and other vulnerable areas of the plant should be ensured.	Water spraying is being carried out regularly in coal handling area and other vulnerable areas of the plant to control fugitive dust.
(ix)	A greenbelt of 100 m width will be created all along the plant boundary. Greenbelt will also be created along the ash disposal area. A norm of 1500 -2000 trees per ha should be followed. A detailed proposal of green belt creation including aftercare, gap filling, monitoring etc. should be prepared along with financial requirements and submitted to the Ministry by 31st December, 1997.	Green belt along the plant boundary has been developed and the same is being strengthened through gap plantation. Greenbelt has also been created along the ash disposal area. Saplings have been planted as per the CPCB guidelines. Plantation development status for the year 2021-22 (till Sep-21) is enclosed as **Annexure -II.** A detailed proposal for green belt development had been already submitted to the Ministry.
(x)	Continuous monitoring of ground water should be undertaken in project impact area by establishing good network of observation wells in consultation with the Central Ground Water Board. Result & data collected should be analyzed to ascertain the status of water quality and findings should be submitted.	A network of observation wells and piezometers have been established in impact area in consultation with Central Ground Water Board and monitoring the ground water quality at regular intervals. Ground & surface water quality reports for the month of July 2021 is enclosed as ***Annexure -III***
(xi)	All effluents generated in various plant activities should be collected in the Central Effluent Treatment Plant and treated to ensure adherence to specified standards of discharge.	Treated water from the Neutralization pit, Boiler blow down and Cooling tower blow down are taken to Central Monitoring Basin (Guard pond) after treatment it is reused in ash slurry preparation. 100% decanted ash water from ash dyke is recirculated and reused for ash slurry preparation. Treated effluent Monitoring Report for the period from April, 2021 to September, 2021 is enclosed as **Annexure- IV**.
(xii)	Provision shall be made for collection of fly ash in dry form. Close conveyor system with dust suppression mechanism shall be used for transport of coal from the mine and for carrying the ash to the disposal areas. Adequate provision should be made for sprinkling of water at strategic locations to ensure that fly ash does not get air borne.	Dry fly ash is collected through pneumatic conveying system in 2 No. ash silos of capacity 1600 Tonnes each. Coal is transported in environment friendly manners. Dry fly ash is transported by covered trucks by maintaining sufficient moisture for utilization in brick manufacturing, land filling, Mine backfilling, ash dyke raising etc. Wet ash is disposed to ash dyke through ash slurry pipelines. Water level is always maintained in the ash dyke in such a way that there is no fugitive dust emission from the ash dyke.
(xiii)	Ash pond area should be provided with impervious lining and suitable drainage provision should be made around the coal stock yard.	Ash pond area is provided with clay compacted impervious lining layer as per CPCB guidelines. Suitable drainage provision with sedimentation pit is made around the coal stockyard.
(xiv)	Fly ash generated will be fully utilized within 10 years starting with 20% utilization from the year	All out efforts are being made to utilize ash in accordance with the Fly ash utilization

	of operation of the project with the additional utilization of 10% every year.	notification. The avenue include ash bricks, mine backfilling, road construction, ash dyke raising, low lying area filling etc.
(xv)	Detailed survey of flora and fauna along Kurkut river/ submergence area shall be carried out in consultation with the institution like BSI, ZSI, WLI, Dehra Dun, local recognized Universities, Institutions etc. and the report should be submitted within six months.	Detailed survey of flora and fauna along Kurket river/ submergence area had been carried out by Prof.A.K.Girolkar, Principal & Professor (Botany), K.G. Science & Arts College, Raigarh, Chhattisgarh. The report has already been submitted to the Ministry.
(xvi)	Project affected people should be adequately compensated and rehabilitated as per the State Govt. norms in consultation with the State authorities. The final R&R Programme and package should be submitted within six months. The project colony should be located 6-8 kms away from the plant site to avoid direct impact of the project.	All land holders affected by the project have been compensated as per directives of State Govt. of C.G. and as such no R&R issue is pending. The colony is located at 6.5 km away from the plant site in upwind direction.
(xvii)	Adequate financial provision should be made for implementation of environmental mitigative measures with adequate scope for its enhancement, if required in future.	Complied as per EMP provided in the EIA Report.
(xiii)	Regular monitoring for SPM, SO_2 and NOx around the power plant may be carried out and records maintained. The data so collected should be properly analyzed and submitted to the Ministry every six months.	PM_{10}, $PM_{2.5}$, SO_2, NOx and CO are regularly monitored in and around the power plant and records are properly maintained. The collected data are regularly submitted to the Ministry in every six months. The data for the period of April, 2021 to September,2021 are enclosed as ***Annexure- V (a) to V (f).***
(xix)	Full cooperation should be extended to the Scientists/ Officers from the Regional Office of the Ministry at Bhopal/ the CPCB/ the SPCB who would be monitoring the compliance of environmental status. Complete set of impact assessment report and the Management Plans should be forwarded to the Regional Office/ the CPCB/ the SPCB for their use during monitoring.	Noted.
(xx)	Monitoring Committee should be constituted for reviewing the compliance to various safeguard measures by involving recognized local NGOs, Pollution Control Boards, Institutions, Experts etc.	Request letter for formation of Monitoring Committee was already submitted to Chhattisgarh Environment Conservation Board, Regional Office vide letter No.JPL/EMD/RO/OCT-2010 dated 7/10/2010. However, we have engaged ISM, Dhanbad for monitoring of compliance to various safeguard measures.
3	The Ministry reserves the right to revoke the clearance if conditions stipulated are not implemented to the satisfaction of the Ministry.	Noted.
4	In case of any deviation or alteration in the project from proposed 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	Noted.

	add additional environmental protection measures required, if any.	
5	The above stipulations shall be enforced among others as under the water (Prevention and Control of Pollution) Act, 1974 , the Air (Prevention and Control of Pollution) Act, 1981, the Environment (Protection) Act,1986, the Public Liability Insurance Act,1991 and rules there under, the Environment Impact Assessment notification of January ,1994 and its amendments.	Noted.
	Additional Conditions (as per MoEF Memorandum No.J.11013/41/2006-IA.II (I) dated 06.04.2011)	
(i)	Continuous monitoring of stack emissions as well as ambient air quality (as per notified standards) shall be carried out and continuous records maintained. Based on the monitored data, necessary corrective measures as may be required from time to time shall be taken to ensure that the levels are within permissible limits. The results of monitoring shall also be submitted to the respective Regional Office of MoEF regularly. Besides, the results of monitoring will also be put on the website of the company in the public domain.	Continuous monitoring of stack emissions as well as ambient air quality (as per notified standards) is being carried out and continuous records are maintained. Results of monitoring are being submitted to the Regional Office of MoEF regularly. Results of monitoring are being regularly uploaded on website of JPL. The real time data of CEMS and CAAQMS are uploaded on CPCB & CECB servers.
(ii)	The six monthly monitoring report as well as the monitored data on various parameters as stipulated in the environment clearance conditions shall be put on the website of the company and also regularly updated. The monitored data shall also be submitted to respective State Pollution Control Board/UTPCCs and the Regional Office of MoEF.	The six monthly monitoring report as well as the monitored data on various parameters as stipulated in the environmental clearance conditions are being regularly uploaded on website. Monitored data are being regularly submitted to CECB-Raipur and the Regional Office of MoEF.
(iii)	The ambient air quality data as well as the stack emission data will also be displayed in public domain at some prominent place near the main gate of the company and updated in real time.	Ambient air quality data and the stack emission data is being displayed in public domain near the main gate of the company and updated in real time.

Jindal Power Limited, Tamnar

Compliance Report of Environmental Clearance for Stage-II (2x250MW) of O.P. Jindal Super TPP, Tamnar vide letters No.J-13011/8/2006-IA.II (T) dated 08/06/2006, EC amendment No.J.13012/08/2006- IA.II (I) dated 03/01/2019 & No.J.13011/08/2006- IA.II (T) dated 13/08/2021 and additional conditions as per MoEF Office Memorandum No J-11013/41/2006-IA.II(I) dated 06/04/2011 & F.No.22-13/2019-IA.III dated 28/08/2019

Sl. No	Conditions	Compliance Status
(i)	All the conditions stipulated by Chhattisgarh Environment Conservation Board vide their letter no. 984/TS/CECB/2006 dated 23/02/06 shall be strictly implemented.	All the conditions stipulated by the Chhattisgarh Environment Conservation Board vide their letter no. 984/TS/CECB/2006 dated 23/02/06 are strictly implemented.
(ii)	**Amended condition as per as per MoEF Office Memorandum No.J.13011/08/2006-IA.II (T) dated 13/08/2021** No additional land for ash pond shall be acquired during phase-II of the project. The height of the existing ash dyke shall be limited to 18 m.	Noted, The area earmarked for ash dyke is 198 Ha. for both Phase-I (2x250MW) & Phase-II (2x250MW). No additional land is acquired for ash dyke for Phase- II (2x250MW). Noted.
(iii)	A 500 m distance from State highway and HFL of river Kelo to the plant site, ash pond and Township must be kept.	Complied.
(iv)	A copy of the requisite clearances from state government for construction of Rabo dam on Kurket River shall be submitted within one month of the receipt of this letter.	Copy of the requisite clearances from State Government for construction of Rabo dam on Kurket river has been already submitted to MoEF, New Delhi vide Letter No .AB/1000 MW/MoEF/509/001, dated 16/06/2006.
(v)	Ash in the coal to be used as fuel shall not exceed 40%.	The condition has been updated by MoEF&CC vide its notification no. S.O. 1561 (E) dated 21.05.2020. As per the said notification, MoEF&CC has permitted use of coal by TPPs without stipulations as regards to ash content or distance. The MoEF&CC vide this notification has stipulated that the existing ECs stand modified so as to make the above condition operative.
(vi)	Copy of coal linkage and stack height clearance shall be submitted within one month to the Ministry.	Copy of Coal Block allocation and Stack height clearance from the Airport Authority of India has been submitted to Ministry vide letter No.AB/1000MW/MoEF/509/001 dated 16/06/2006.
(vii)	A bi-flue stack of height 220 m and internal diameter of 4.75 m with continuous On-line monitoring system shall be installed. For adequate dispersal of gaseous pollutants, exit velocity shall be maintained at 25 m/sec by installing ID fans and continuous record of exit velocity shall also be maintained and submitted to the Ministry on a 6 monthly basis.	A bi-flue stack of height 220 m and internal diameter of 4.75 m with continuous on-line monitoring system has already been installed. ID fans are installed and exit velocity of 25 m/s is maintained. Report of exit velocity for the period of April, 2021 to September,2021 is enclosed as ***Annexure- I.***

(viii)	Electrostatic Precipitators (ESPs) with an efficiency of 99.9% efficiency shall be installed to limit particulate emission within 50 mg/Nm^3. Automatic system for shutting down the power plant in the event of non-functioning of ESPs shall be installed.	Electrostatic Precipitators (ESPs) with an efficiency of >99.9% have been installed. The ESP's are designed to achieve particulate emission below 50mg/Nm^3.Report of Particulate Matter for the period of April, 2021 to Sept,2021 is enclosed as ***Annexure-I***. Particulate emissions below 50 mg/Nm^3 is being ensured.
(ix)	100% fly ash utilization shall be achieved within 9 years in accordance with the notification on fly ash utilization SO 763 (E) dated 14th September, 1999 and the amendments made therein from time to time.	All out efforts are being made to utilize ash in accordance with the Fly ash utilization notification. The avenue include ash bricks, mine backfilling, road construction, ash dyke raising, low lying area filling etc.
(x)	COC of not less than 5 shall be adopted. No ground water shall be used for any purpose.	Cooling system with designed COC of 6 has been implemented. No ground water is used in plant for any purpose.
(xi)	The treated effluents conforming to the prescribed standards shall be recirculated and reused within the plant. There shall be no waste water discharge into the surface water bodies, outside the plant boundary.	Treated effluents conforming to prescribed standards are re-circulated and re-used within the plant. Treated Effluent Monitoring Report for the period from April, 2021 to September,2021 is enclosed as ***Annexure-IV***. Effluents are treated in Central Monitoring Basin (Guard pond) and is re-used in ash slurry preparation. No wastewater is discharged into the surface water bodies, outside the plant boundary.
(xii)	Rain water harvesting shall be adopted and a detailed scheme for rain water harvesting to recharge the ground water aquifer shall be prepared in consultation with Central Ground Water Authority/ State Ground Water Board. A copy of the same shall be submitted within three months to the Ministry	Water reservoir of 35 million cu.m capacity at the Rabo dam and 12 lakh cu.m capacity at plant site have been constructed. Rainwater harvesting technique has adopted in the residential colony and other office complexes at the site, as per proposal prepared in consultation with Mr. V.K. Jain, formerly Engineer-In-Chief, Public Health Engineering Department and Chairman, M.P. Pollution Control Board, Bhopal and as per the guidelines of Central Ground Water Authority/ State Ground Water Board. The report had been submitted to the Ministry vide letter No.JPL/RTPP/RKS/2.5/1897 dated 19/09/2006.
(xiii)	Continuous monitoring of ground water shall be undertaken in and around project impact area including ash pond area by establishing a network of observation wells in consultation with the Central Ground Water Board/ State Ground Water Board, as the ash pond lies in the catchment of river Pajhar. Data collected shall be analyzed to ascertain the status of water quality and results furnished to the Regional Office of this Ministry.	A network of observation wells and piezometers have been established in and around impact area including ash pond in consultation with Central Ground Water Board and monitoring the ground water quality at regular intervals. Results are submitted regularly to Ministry & its Regional Office, CPCB zonal office and CECB-Raipur. Ground & surface water quality reports for the month of July 2021 are enclosed as ***Annexure -III (a) & III (b)***.

(xiv)	Green belt of 100 m width shall be developed all around the power plant and ash pond area. One third (1/3) of the total plant area (phase-I&II) should be used for green belt development. **(As amended vide MoEF letter No. J-13011/8/2006-IA. II (T) dt. 25/04/07)** A green belt of 100 m width shall be developed all around the power plant covering approximately 1/3rd of power plant area. Greenbelt with an average width of 45 m shall also be developed around the ash dyke covering about 24 ha area.	Green belt along the plant boundary has been developed and the same is being strengthened through gap plantation. Greenbelt of 45m width has also been developed the ash disposal area. Saplings have been planted as per the CPCB guidelines. Plantation development status for the year 2021-22 (till Sep-21) is enclosed as **Annexure -II.**
(xv)	The project proponent shall take all precautionary measures during construction and operation of power plant for conservation and protection of endangered faunal species i.e. Sloth Bear (Melursus ursinus), Common Jungle Cat (Felis chaus), Indian Python (Python molurus), Rat Snake (Ptysus mucosus), Indian Cobra (Naja naja), Lizard (Varanus monitor) etc, reported in the study area, in consultation with the state Wildlife Dept. Action plan for conservation of endangered fauna shall be prepared and submitted to the Ministry & its Regional Office within 3 months.	A proposal for conservation of endangered wild life fauna species was prepared in consultation with State Wild Life Department, Raipur as per the guidelines of Wild Life Protection Act, 1972 and the same was submitted to the Ministry vide letter No.JPL/RTPP/RKS/2.5/1897 dated 19/09/2006.
(xvi)	First aid and sanitation arrangements shall be made for the drivers and other contract workers during the construction phase.	Complied.
(xvii)	Leq of Noise level shall be limited to 75 dBA and regular maintenance of equipment be undertaken. For people working in the high noise areas, personal protection devices should be provided.	Noise level is being maintained within the prescribed limit. Earplugs & Earmuffs have been providing to the employees working in the noise generating areas.
(xiii)	Regular monitoring of the ambient air quality shall be carried out in and around the power plant and records maintained. Periodic six monthly reports should be submitted to the Regional Office of this Ministry.	Ambient air quality is being monitored in and around the power plant and records are being maintained. The reports are being submitted to the Regional Office of Ministry regularly in every six months. The reports for the period from April, 2021 to September, 2021 are enclosed as ***Annexure- V (a) to V (f).***
(xix)	For controlling fugitive dust, regular sprinkling of water in coal storage area and other vulnerable areas of the plant shall be ensured.	Water spraying is a regular practice in coal handling area and other vulnerable areas of the plant to control fugitive dust.
(xx)	The project proponent should advertise in at least two local newspapers widely circulated in the region around the project, one of which should be in the vernacular language of the locality concerned, informing that the project has been accorded environmental clearance and copies of clearances letters are available with the State Pollution Control Board/ Committee and may also be seen at Website of	The information regarding advertisement in two local newspapers informing the project has been accorded environmental clearance has been sent to MoEF, New Delhi vide Letter No. AG/1000MW/MoEF/509/002, dt. 24/06/2006.

	the Ministry of Environment and Forests at http://envfor.nic.in.	
(xxi)	A separate environment monitoring cell with suitable qualified staff should be set up for implementation of the stipulated environmental safeguards.	Environment Management Department is already in place with qualified and experienced staff for implementation of the stipulated environmental safeguards.
(xxii)	Half yearly report on the status of implementation of the stipulated conditions and environmental safeguards should be submitted to this Ministry/ Regional Office/ CPCB/ SPCB.	Half yearly report on the status of implementation of the stipulated conditions and environmental safeguards is being submitted to Ministry, Regional Office of Ministry, CPCB and SPCB.
(xxiii)	Regional Office of the Ministry of Environment & Forests located at Bhopal will monitor the implementation of the stipulated conditions. Complete set of 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.	Noted.
(xxiv)	Separate funds should be allocated for implementation of environmental protection measures along with item-wise break-up. This cost should be included as part of the project cost. The funds earmarked for the environment protection measures should not be diverted for other purposes and year-wise expenditure should be reported to the Ministry.	Separate funds for implementation of environmental protection measures have been allocated as part of the project cost. Year wise (April to March) expenditure details are being submitted regularly to the Ministry.
(xxv)	Full cooperation should be extended to the Scientists/ Officers from the Ministry/ Regional Office of the Ministry at Bhopal/ the CPCB/ the SPCB who would be monitoring the compliance of environmental status.	Noted.
4	The Ministry reserves the right to revoke the clearance if conditions stipulated are not implemented to the satisfaction of the Ministry.	Noted.
5	The environmental clearance accorded shall be valid for a period of 5 years for starting construction/Operation of the power plant. In case, the project authorities fall to do so within this stipulated period, the environmental clearance shall stand lapsed automatically.	Plant has been constructed/ operating within the stipulated period. The Unit-1,2,3 & 4 were commissioned on 08/12/2007, 15/06/2008, 06/04/2008 & 05/09/2008 respectively.
6	In case of any deviation or alteration in the project from proposed 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 incorporate additional environmental protection measures required, if any.	Noted.
7	The above stipulations shall be enforced along with others as under the water (Prevention and Control of Pollution) Act, 1974, the Air (Prevention and Control of Pollution) Act, 1981,	Noted.

	the Environment (Protection) Act,1986 and rules there under, The Manufacture, Storage and Import of Hazardous Chemical Rules, 1989, Hazardous Wastes (Management and Handling) Rules,1989, the Public Liability Insurance Act,1991 and rules there under, the Environment Impact Assessment notification of January,1994 and their subsequent amendments.	
	Additional Conditions (as per MoEF Office Memorandum No.J.11013/41/2006-IA.II (I) dated 06/04/2011)	
(i)	Continuous monitoring of stack emissions as well as ambient air quality (as per notified standards) shall be carried out and continuous records maintained. Based on the monitored data, necessary corrective measures as may be required from time to time shall be taken to ensure that the levels are within permissible limits. The results of monitoring shall also be submitted to the respective Regional Office of MoEF regularly. Besides, the results of monitoring will also be put on the website of the company in the public domain.	Continuous monitoring of stack emissions as well as ambient air quality (as per notified standards) is being carried out and continuous records are maintained. Results of monitoring are being submitted to the Regional Office of MoEF regularly. Results of monitoring are being regularly uploaded on website of JPL. The real time data of CEMS and CAAQMS are uploaded on CPCB & CECB servers.
(ii)	The six monthly monitoring report as well as the monitored data on various parameters as stipulated in the environment clearance conditions shall be put on the website of the company and also regularly updated. The monitored data shall also be submitted to respective State Pollution Control Board/UTPCCs and the Regional Office of MoEF.	The six monthly monitoring report as well as the monitored data on various parameters as stipulated in the environmental clearance conditions are being regularly uploaded on company website. Monitored data are being regularly submitted to CECB-Raipur and the Regional Office of MoEF.
(iii)	The ambient air quality data as well as the stack emission data will also be displayed in public domain at some prominent place near the main gate of the company and updated in real time.	Ambient air quality data and the stack emission data is being displayed in public domain near the main gate of the company and updated in real time.
	Additional Conditions (as per MoEF Office Memorandum No.J.13012/08/2006- IA.II (I) dated 03/01/2019)	
(i)	Groundwater analysis is to be carried out at the upstream / downstream of the existing fly ash pond by creating a network with the existing wells and installing new piezometers and report be submitted that no leaching is taking place due to fly ash dumping.	A network of observation wells and piezometers have been established in and around impact area including ash pond and monitoring the ground water quality at regular intervals. Results are submitted regularly to Ministry & its Regional Office, CPCB zonal office and CECB-Raipur. Ground & surface water quality reports for the month of July 2021 are enclosed as ***Annexure -III(a)&III (b)***.
(ii)	Alternate technology for fly ash utilization such as road making using geopolymer shall be explored with the institutes of national repute.	Noted.
(iii)	The approved ash pond site at village Dolesara/ Roadapalli in an area of 239 ha vide	CECB vide its letter dated 19.03.2021 has informed that the amendment in CTE for dyke

	ministry's letter dated 26.4.2017 for disposal of ash generated from 4X600 MW Power Plant shall be operationalized within one year so that there should not be any necessity to further raise the existing dyke height.	construction cannot be granted citing the NGT order dated 05.10.2020 passed in the appeal no. 19/2017.
	Additional Conditions (as per MoEF Office Memorandum No.J.13011/08/2006- IA.II (T) dated 13/08/2021)	
(i)	No further raising of ash dyke shall be proposed beyond RL 286m.	Noted.
(ii)	100% ash utilization shall be carried out throughout the year.	Noted.
(iii)	Disaster management plan shall be finalized and implemented after discussion with local authority.	
	Additional conditions as per MoEF Office Memorandum F.No.22-13/2019-IA.III dated 28/08/2019	
i	The guidelines prepared by CPCB for disposal of fly ash for reclamation of low lying areas and in stowing / backfilling of abandoned mines/quarries shall be followed during disposal of ash in abandoned or working mines, as annexed.	Noted
ii	There should at least be clearance of 500 m of safe distance be maintained from River and water body in case of ash dispoal in abandoned mines to prevent embankment failures and flyash flowing into the nearby water body.	Noted
iii	The top layer of the fly ash disposal area in the abandoned mines shall be kept moist during disposal.	Noted
iv	Top layer of the disposed area should have 70 cm overburden or gravels/stones and then 30 cm sweet soil cover. Subsequently, the vegetation shall be raised on the soil cover.	Noted
v	Bioaccumulation and bio-magnification tests shall be conducted on surrounding flora and fauna (tree leaves, vegetation, crop yields and cattle population) during shall be pre-monsoon and post monsoon to find out any trace metals escaped through groundwater or runoff.	Noted
vi	Surface runoff and supernatant water in any case shall not be let into the surrounding areas. It shall be collected by providing adequate drain around the mine. The supernatant water along with surface runoff shall be treated and re-used for mixing ash and plant operations.	Noted
vii	To the extent possible , only decanted water from mine, make up water from treated effluents such as cooling tower blow down and treated sewage water shall be used for making ash slurry.	Noted

viii	Fly ash to be used as soil conditioner in agriculture needs and to be applied in controlled manner to limit excessive application so as to prevent soil degradation. The optimize proportion of ash to be applied which is to be certified by the state Agricultural Universities /Colleges based on the soil testing.	Noted
ix	Approval from DGMS shall be obtained before disposing the ash in mine voids.	Noted
x	Technology for conversion of fly ash into coarse granules for stowing in the underground mines to be explored	Noted
xi	All the power plants should install different silos for dry collection of fly ash.	Complied
xii	Records pertaining to details of month-wise quantity of fly ash disposed and water consumption along with nature/source of water shall be maintained and submitted to Ministry Regional office annually	Records pertaining to details of month-wise quantity of fly ash disposed and water consumption data is maintaining. The record will be submitted to Ministry Regional office annually.
xiii	Before starting the disposal of ash into mine voids , the NOC /Permission from the mine owner is to be obtained in case the mine closure activity are not completed or State Government in case the mine has been handed over to the State Govt. after its closure. A copy of such NOC / Permission isto be submitted to the ministry and its Regional Office	Noted

Jindal Power Limited, Tamnar

Annexure-I

STACK MONITORING REPORT (4X250 MW TPP) OF APRIL , 2021 TO SEPTEMBER 2021

Month	Name of the Unit	Stack height (Mtr.)	Stack diameter (Mtr.)	Exit Velocity (m/sec)	Concentration of PM (mg/Nm^3)
Apr-21	Unit-1	220	4.75	25.8	38.5
	Unit-2			26.1	37.6
	Unit-3			25.3	39.1
	Unit-4			25.5	36.7
May-21	Unit-1	220	4.75	25	38.4
	Unit-2			24.8	40.3
	Unit-3			25.1	42.2
	Unit-4			25.1	40.6
Jun-21	Unit-1	220	4.75	24.9	40.5
	Unit-2			25	37.6
	Unit-3			25.1	41.4
	Unit-4			Unit Under Shut Down	Unit Under Shut Down
Jul-21	Unit-1	220	4.75	25	42.6
	Unit-2			25.1	36.8
	Unit-3			25	38.4
	Unit-4			24.9	40.2
Aug-21	Unit-1	220	4.75	25.1	38.5
	Unit-2			25	42.6
	Unit-3			24.9	39.5
	Unit-4			24.8	37.8
Sep-21	Unit-1	220	4.75	25	40.4
	Unit-2			25.1	37.7
	Unit-3			25	38.5
	Unit-4			24.9	41.6

Jindal Power Limited, Tamnar

Annexure-II

GREEN BELT DEVELOPMENT

21-22 (APRIL , 2021 TO SEPTEMBER 2021)		
Location	**No. of Saplings planted**	**Name of the main species**
Within the plant (Industrial canteen, Kelo vihar, near Gate No.2), Colony, Rabo dam area,Road side and in nearby villages	**8620**	Alostonia, Gulmohar, Chakundi, Neem, Mango, Teak , Peltophorm, Jamun, Amla etc.

Ultimate
ENVIROLYTICAL SOLUTIONS

HDD-272, Phase III - Near JP Chowk
Ring Road No.-2, Kabir Nagar, Raipur (C.G.) - 492099
Ph : 0771 - 4027777 I Email : ultimatenviro@gmail.com

Recognized by Ministry of Environment Forest and Climate Change under EP act 1986

Name & Address Of The Customer			
To, **Jindal Power Limited** **P.O. Tamnar,** **District: Raigarh** **496107 (C.G.)**	Report No	UES/TR/21-22/1833	
	Lab Ref No	UES/21-22/W/3072-3073	
	Date of Sampling	29/07/2021	
	Date of Receipt	30/07/2021	
	Date of Report	09/08/2021	
	Date of analysis	Start:30/07/2021	End: 09/08/2021

SAMPLE DETAILS

Customer Sample Id /Sampling Location	1. Piezometer - 01 (Near Gate No. 03	Latitude	22.13197
		Longitude	83.45947
	2. Piezometer - 02 (SW near Ash Dyke S.V.2)	Latitude	22.11586
		Longitude	83.45075
Customer Ref. No. & Date	4400013828, Date: 22/07/2020		
Sample Type	GroundWater		
Packing Of Sample	Plastic Bottle (5.0 ltr.), Glass Bottle (1.0 ltr.)		
Sample Collected By	Laboratory Chemist		
Sample Condition At Receipt	Ok		

REPORT NO.01833

TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT	
				Acceptable Limit	Permissible limit	Piezometer 01	Piezometer 02
A.	Organoleptic & Physical Parameters						
1	Colour	Hazen	IS:3025:(Part-4)	5	15	<1	<1
2	Odour	-	IS 3025(part-5)	Agreeable	Agreeable	Agreeable	Agreeable
3	pH Value at 25.4°C	-	IS:3025:(Part-11)	6.5-8.5	No Relaxation	7.28	7.16
4	Taste	-	IS 3025(part-8)	Agreeable	Agreeable	Agreeable	Agreeable
5	Turbidity	NTU	IS 3025:(Part-10)	1	5	2.6	1.8
6	Total Dissolved Solids	mg/L	IS:3025:(Part-16)	500	2000	196.0	78.6
B.	General Parameters Concerning Substances undesirable in excessive amounts						
1	Aluminium (as Al)	mg/L	IS 3025(part-55)	0.03	0.2	N.D.	N.D.
2	Ammonia (as total ammonia-N)	mg/L	IS 3025(part-34)	0.5	No Relaxation	N.D.	N.D.
3	Anionic Detergent (as MBAS)	mg/L	Annex K of IS:13428	0.2	1.0	N.D.	N.D.
4	Barium (as Ba)	mg/L	Annex F of IS:13428	0.7	No Relaxation	N.D.	N.D.
5	Boron (as B)	mg/L	IS 3025:(Part-57)	0.5	1.0	N.D.	N.D.

Ultimate
ENVIROLYTICAL SOLUTIONS

HDD-272, Phase III - Near JP Chowk
Ring Road No.-2, Kabir Nagar, Raipur (C.G.) - 492099
Ph : 0771 - 4027777 I Email : ultimatenviro@gmail.com

Recognized by Ministry of Environment Forest and Climate Change under EP act 1986

REPORT NO.01833

TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT	
				Acceptable Limit	Permissible limit	Piezometer 01	Piezometer 02
6	Calcium (as Ca)	mg/L	IS 3025:(Part-40)	75	200	26.8	10.8
7	Chloramines (as Cl_2)	mg/L	IS 3025:(Part-26)	4.0	No Relaxation	N.D.	N.D.
8	Chloride (as Cl)	mg/L	IS 3025:(Part-32)	250	1000	26.9	14.9
9	Copper (as Cu)	mg/L	IS 3025(part-42)	0.05	1.5	N.D.	N.D.
10	Fluoride (as F)	mg/L	IS 3025(part-60)	1	1.5	0.11	0.20
11	Free Residual Chlorine	mg/L	IS 3025:(Part-26)	0.2	1	N.D.	N.D.
12	Iron (as Fe)	mg/L	IS 3025(part-53)	0.3	No Relaxation	N.D.	N.D.
13	Magnesium (as Mg)	mg/L	IS 3025:(Part-46)	30	100	6.5	2.8
14	Manganese (as Mn)	mg/L	IS 3025(part-59)	0.1	0.3	N.D.	N.D.
15	Mineral Oil	mg/L	Clause 6 of IS 3025 (Part-39) Infrared partition method	0.5	No Relaxation	N.D.	N.D.
16	Nitrate (as NO_3)	mg/L	IS 3025(part-34)	45	No Relaxation	4.8	2.2
17	Phenolic Compound (as C6H5OH)	mg/L	IS 3025(part-43)	0.001	0.002	N.D.	N.D.
18	Selenium (as Se)	mg/L	IS 3025(part-56)	0.01	No Relaxation	N.D.	N.D.
19	Silver (as Ag)	mg/L	Annex J of IS 13428	0.1	No Relaxation	N.D.	N.D.
20	Sulphate (as SO_4)	mg/L	IS 3025:(Part-24)	200	400	46.0	10.2
21	Sulphide (as H_2S)	mg/L	IS 3025:(Part-29)	0.05	No Relaxation	N.D.	N.D.
22	Total Alkalinity (as $CaCO_3$)	mg/L	IS 3025:(Part-23)	200	600	38.0	20.0
23	Total Hardness (as $CaCO_3$)	mg/L	IS 3025:(Part-21)	200	600	96.0	24.0
24	Zinc (as Zn)	mg/L	IS 3025(part-49)	5	15	N.D.	N.D.
C.	Parameters concerning toxic substances:-						
1	Cadmium (as Cd)	mg/L	IS 3025(part-41)	0.003	No Relaxation	N.D.	N.D.
2	Cyanide (as CN)	mg/L	IS 3025(part-27)	0.05	No Relaxation	N.D.	N.D.
3	Lead (as Pb)	mg/L	IS 3025(part-47)	0.01	No	N.D.	N.D.

Ultimate
ENVIROLYTICAL SOLUTIONS

HDD-272, Phase III - Near JP Chowk
Ring Road No.-2, Kabir Nagar, Raipur (C.G.) - 492099
Ph : 0771 - 4027777 I Email : ultimatenviro@gmail.com

Recognized by Ministry of Environment Forest and Climate Change under EP act 1986

REPORT NO.61633

TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT	
				Acceptable Limit	Permissible limit	Piezometer 01	Piezometer 02
					Relaxation		
4	Mercury (as Hg)	mg/L	IS 3025(part-48)	0.001	No Relaxation	N.D.	N.D.
5	Molybdenum (as Mo)	mg/L	IS 3025(part-2)	0.07	No Relaxation	N.D.	N.D.
6	Nickel (as Ni)	mg/L	IS 3025(part-54)	0.02	No Relaxation	N.D.	N.D.
7	Polychlorinated biphenyls	mg/L	ASTM 5175	0.0005	No Relaxation	N.D.	N.D.
8	Polynuclear aromatic hydrocarbons (as PAH)	mg/L	APHA 6440	0.0001	No Relaxation	N.D.	N.D.
9	Arsenic (as As)	mg/L	IS 3025(part-37)	0.01	0.05	N.D.	N.D.
10	Chromium (as Cr)	mg/L	Annex J of IS:13428	0.05	No Relaxation	N.D.	N.D.
11	Trihalomethanes:						
a)	Bromoform	mg/L	APHA 6232	0.1	No Relaxation	N.D.	N.D.
b)	Dibromochlorome thane	mg/L	APHA 6232	0.1	No Relaxation	N.D.	N.D.
c)	Bromodichlorome thane	mg/L	APHA 6232	0.06	No Relaxation	N.D.	N.D.
d)	Chloroform	mg/L	APHA 6232	0.2	No Relaxation	N.D.	N.D.
D.	Pesticides:-						
1	Alpha HCH	µg/l	USEPA 508	0.01		N.D.	N.D.
2	Beta HCH	µg/l	USEPA 508	0.04		N.D.	N.D.
3	Delta HCH	µg/l	USEPA 508	0.04		N.D.	N.D.
4	Alachlor	µg/l	USEPA 525.2, 507	20		N.D.	N.D.
5	Aldrin / Dieldrin	µg/l	USEPA 508	0.03		N.D.	N.D.
6	Atrazine	µg/l	USEPA 525.2,8141 A	2		N.D.	N.D.
7	Butachlor	µg/l	USEPA 525.2,8141 A	125		N.D.	N.D.
8	Chlorpyriphos	µg/l	USEPA 525.2,8141 A	30		N.D.	N.D.
9	DDT (o,p and p, p-Isomers of DDT, DDE and DDD)	µg/l	USEPA 508	1		N.D.	N.D.
10	Gamma HCH	µg/l	USEPA 508	2		N.D.	N.D.
11	2,4-Dichlorophenoxy acetic Acid	µg/l	USEPA 515.1	30		N.D.	N.D.
12	Endosulphan (alpha, beta	µg/l	USEPA 508	0.4		N.D.	N.D.

Ultimate
ENVIROLYTICAL SOLUTIONS

HDD-272, Phase III - Near JP Chowk
Ring Road No.-2, Kabir Nagar, Raipur (C.G.) - 492099
Ph : 0771 - 4027777 I Email : ultimatenviro@gmail.com

Recognized by Ministry of Environment Forest and Climate Change under EP act 1986

REPORT NO.01833

TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT	
				Acceptable Limit	Permissible limit	Piezometer 01	Piezometer 02
	and sulphate)						
13	Ethion	µg/l	USEPA 1657 A	3		N.D.	N.D.
14	Isoproturon	µg/l	USEPA 532	9		N.D.	N.D.
15	Malathion	µg/l	USEPA 8141 A	190		N.D.	N.D.
16	Methyl Parathion	µg/l	USEPA 8141 A	0.3		N.D.	N.D.
17	Monocrotophos	µg/l	USEPA 8141 A	1		N.D.	N.D.
18	Phorate	µg/l	USEPA 8141 A	2		N.D.	N.D.
E.	Microbial Parameters						
1	Total Coliform	MPN/100ml	IS:1622:1981:RA:2019	-		Absent	Absent
2	E. Coli	MPN/100ml	IS:1622:1981:RA:2019	-		Absent	Absent

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

REMARKS: RESULTS ARE AS ABOVE

Terms & conditions

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

Thakur 22/05/2021
PREPARED BY

For ULTIMATE ENVIROLYTICAL SOLUTIONS
22/05/2021
AUTHORIZED SIGNATORY

End of the test report

Ultimate
ENVIROLYTICAL SOLUTIONS

HDD-272, Phase III - Near JP Chowk
Ring Road No.-2, Kabir Nagar, Raipur (C.G.) - 492099
Ph : 0771 - 4027777 I Email : ultimatenviro@gmail.com

Recognized by Ministry of Environment Forest and Climate Change under EP act 1986

Name & Address Of The Customer			
To, **Jindal Power Limited** **P.O. Tamnar,** **District: Raigarh** **496107 (C.G.)**	Report No	UES/TR/21-22/1834	
	Lab Ref No	UES/21-22/W/3074-3076	
	Date of Sampling	29/07/2021	
	Date of Receipt	30/07/2021	
	Date of Report	09/08/2021	
	Date of analysis	Start:30/07/2021	End: 09/08/2021

SAMPLE DETAILS

Customer Sample Id /Sampling Location	1. Borewell - 06 (NW Near ash Dyke Reagan Village Side)	Latitude	22.11468
		Longitude	83.46731
	2. Piezometer - 07 (NE Near ash Dyke village pata village)	Latitude	22.13273
		Longitude	83.45694
	3. Piezometer - 08 (SE Near ash Dyke in front of SBI bank)	Latitude	22.11468
		Longitude	83.45507
Customer Ref. No. & Date	4400013828, Date: 22/07/2020		
Sample Type	GroundWater		
Packing Of Sample	Plastic Bottle (5.0 ltr.) Glass Bottle (1.0 ltr.)		
Sample Collected By	Laboratory Chemist		
Sample Condition At Receipt	Ok		

REPORT NO.01834

TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT		
				Acceptable Limit	Permissible limit	Borewell 06	Piezometer 07	Piezometer 08
A.	Organoleptic & Physical Parameters							
1	Colour	Hazen	IS:3025:(Part-4)	5	15	<1	<1	<1
2	Odour	-	IS:3025:(part-5)	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
3	pH Value at 25.2°C	-	IS:3025:(Part-11)	6.5-8.5	No Relaxation	7.22	7.42	7.28
4	Taste	-	IS:3025:(part-8)	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
5	Turbidity	NTU	IS:3025:(Part-10)	1	5	0.86	0.80	0.78
6	Total Dissolved Solids	mg/L	IS:3025:(Part-16)	500	2000	102.0	158.0	78.2
B.	General Parameters Concerning Substances undesirable in excessive amounts							
1	Aluminium (as Al)	mg/L	IS:3025:(part-55)	0.03	0.2	N.D.	N.D.	N.D.
2	Ammonia (as total ammonia-N)	mg/L	IS:3025:(part-34)	0.5	No Relaxation	N.D.	N.D.	N.D.
3	Anionic Detergent (as MBAS)	mg/L	Annex K of IS:13428	0.2	1.0	N.D.	N.D.	N.D.

Ultimate
ENVIROLYTICAL SOLUTIONS

HDD-272, Phase III - Near JP Chowk
Ring Road No.-2, Kabir Nagar, Raipur (C.G.) - 492099
Ph : 0771 - 4027777 I Email : ultimatenviro@gmail.com

Recognized by Ministry of Environment Forest and Climate Change under EP act 1986

REPORT NO.01834

TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT		
				Acceptable Limit	Permissible limit	Borewell 06	Piezometer 07	Piezometer 08
4	Barium (as Ba)	mg/L	Annex F of IS:13428	0.7	No Relaxation	N.D.	N.D.	N.D.
5	Boron (as B)	mg/L	IS 3025:(Part-57)	0.5	1.0	N.D.	N.D.	N.D.
6	Calcium (as Ca)	mg/L	IS 3025:(Part-40)	75	200	22.4	10.4	16.4
7	Chloramines (as Cl_2)	mg/L	IS 3025:(Part-26)	4.0	No Relaxation	N.D.	N.D.	N.D.
8	Chloride (as Cl)	mg/L	IS 3025:(Part-32)	250	1000	8.9	12.9	20.9
9	Copper (as Cu)	mg/L	IS 3025(part-42)	0.05	1.5	N.D.	N.D.	N.D.
10	Fluoride (as F)	mg/L	IS 3025(part-60)	1	1.5	0.11	0.08	0.06
11	Free Residual Chlorine	mg/L	IS 3025:(Part-26)	0.2	1	N.D.	N.D.	N.D.
12	Iron (as Fe)	mg/L	IS 3025(part-53)	0.3	No Relaxation	N.D.	N.D.	N.D.
13	Magnesium (as Mg)	mg/L	IS 3025:(Part-46)	30	100	5.4	3.1	5.0
14	Manganese (as Mn)	mg/L	IS 3025(part-59)	0.1	0.3	N.D.	N.D.	N.D.
15	Mineral Oil	mg/L	Clause 6 of IS 3025 (Part-39) Infrared partition method	0.5	No Relaxation	N.D.	N.D.	N.D.
16	Nitrate (as NO_3)	mg/L	IS 3025(part-34)	45	No Relaxation	2.6	1.2	2.8
17	Phenolic Compound (as C6H5OH)	mg/L	IS 3025(part-43)	0.001	0.002	N.D.	N.D.	N.D.
18	Selenium (as Se)	mg/L	IS 3025(part-56)	0.01	No Relaxation	N.D.	N.D.	N.D.
19	Silver (as Ag)	mg/L	Annex J of IS 13428	0.1	No Relaxation	N.D.	N.D.	N.D.
20	Sulphate (as SO_4)	mg/L	IS 3025:(Part-24)	200	400	12.8	18.4	9.4
21	Sulphide (as H_2S)	mg/L	IS 3025:(Part-29)	0.05	No Relaxation	N.D.	N.D.	N.D.
22	Total Alkalinity (as $CaCO_3$)	mg/L	IS 3025:(Part-23)	200	600	78.0	120.0	38.0
23	Total Hardness (as $CaCO_3$)	mg/L	IS 3025:(Part-21)	200	600	98.0	124.0	68.0
24	Zinc (as Zn)	mg/L	IS 3025(part-49)	5	15	N.D.	N.D.	N.D.
C.	Parameters concerning toxic substances:-							
1	Cadmium (as Cd)	mg/L	IS 3025(part-41)	0.003	No Relaxation	N.D.	N.D.	N.D.
2	Cyanide (as CN)	mg/L	IS 3025(part-27)	0.05	No Relaxation	N.D.	N.D.	N.D.

Ultimate
ENVIROLYTICAL SOLUTIONS

HDD-272, Phase III - Near JP Chowk
Ring Road No.-2, Kabir Nagar, Raipur (C.G.) - 492099
Ph : 0771 - 4027777 I Email : ultimatenviro@gmail.com

Recognized by Ministry of Environment Forest and Climate Change under EP act 1986

REPORT NO.01834

TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT		
				Acceptable Limit	Permissible limit	Borewell 06	Piezometer 07	Piezometer 08
3	Lead (as Pb)	mg/L	IS 3025(part-47)	0.01	No Relaxation	N.D.	N.D.	N.D.
4	Mercury (as Hg)	mg/L	IS 3025(part-48)	0.001	No Relaxation	N.D.	N.D.	N.D.
5	Molybdenum (as Mo)	mg/L	IS 3025(part-2)	0.07	No Relaxation	N.D.	N.D.	N.D.
6	Nickel (as Ni)	mg/L	IS 3025(part-54)	0.02	No Relaxation	N.D.	N.D.	N.D.
7	Polychlorinated biphenyls	mg/L	ASTM 5175	0.0005	No Relaxation	N.D.	N.D.	N.D.
8	Polynuclear aromatic hydrocarbons (as PAH)	mg/L	APHA 6440	0.0001	No Relaxation	N.D.	N.D.	N.D.
9	Arsenic (as As)	mg/L	IS 3025(part-37)	0.01	0.05	N.D.	N.D.	N.D.
10	Chromium (as Cr)	mg/L	Annex J of IS:13428	0.05	No Relaxation	N.D.	N.D.	N.D.
11	Trihalomethanes:							
a)	Bromoform	mg/L	APHA 6232	0.1	No Relaxation	N.D.	N.D.	N.D.
b)	Dibromochloromethane	mg/L	APHA 6232	0.1	No Relaxation	N.D.	N.D.	N.D.
c)	Bromodichloromethane	mg/L	APHA 6232	0.06	No Relaxation	N.D.	N.D.	N.D.
d)	Chloroform	mg/L	APHA 6232	0.2	No Relaxation	N.D.	N.D.	N.D.
D.	Pesticides:-							
1	Alpha HCH	µg/l	USEPA 508	0.01		N.D.	N.D.	N.D.
2	Beta HCH	µg/l	USEPA 508	0.04		N.D.	N.D.	N.D.
3	Delta HCH	µg/l	USEPA 508	0.04		N.D.	N.D.	N.D.
4	Alachlor	µg/l	USEPA 525.2, 507	20		N.D.	N.D.	N.D.
5	Aldrin / Dieldrin	µg/l	USEPA 508	0.03		N.D.	N.D.	N.D.
6	Atrazine	µg/l	USEPA 525.2,8141 A	2		N.D.	N.D.	N.D.
7	Butachlor	µg/l	USEPA 525.2,8141 A	125		N.D.	N.D.	N.D.
8	Chlorpyriphos	µg/l	USEPA 525.2,8141 A	30		N.D.	N.D.	N.D.
9	DDT (o,p and p, p-Isomers of DDT, DDE and DDD)	µg/l	USEPA 508	1		N.D.	N.D.	N.D.
10	Gamma HCH	µg/l	USEPA 508	2		N.D.	N.D.	N.D.

Ultimate
ENVIROLYTICAL SOLUTIONS

HDD-272, Phase III - Near JP Chowk
Ring Road No.-2, Kabir Nagar, Raipur (C.G.) - 492099
Ph : 0771 - 4027777 I Email : ultimatenviro@gmail.com

Recognized by Ministry of Environment Forest and Climate Change under EP act 1986

REPORT NO.01834

TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT		
				Acceptable Limit	Permissible limit	Borewell 06	Piezometer 07	Piezometer 08
11	2,4-Dichlorophenoxyacetic Acid	µg/l	USEPA 515.1	30		N.D.	N.D.	N.D.
12	Endosulphan (alpha, beta and sulphate)	µg/l	USEPA 508	0.4		N.D.	N.D.	N.D.
13	Ethion	µg/l	USEPA 1657 A	3		N.D.	N.D.	N.D.
14	Isoproturon	µg/l	USEPA 532	9		N.D.	N.D.	N.D.
15	Malathion	µg/l	USEPA 8141 A	190		N.D.	N.D.	N.D.
16	Methyl Parathion	µg/l	USEPA 8141 A	0.3		N.D.	N.D.	N.D.
17	Monocrotophos	µg/l	USEPA 8141 A	1		N.D.	N.D.	N.D.
18	Phorate	µg/l	USEPA 8141 A	2		N.D.	N.D.	N.D.
E.	Microbial Parameters							
1	Total Coliform	MPN/100ml	IS:1622:1981:RA:2019	-		Absent	Absent	Absent
2	E. Coli	MPN/100ml	IS:1622:1981:RA:2019	-		Absent	Absent	Absent

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

REMARKS: RESULTS ARE AS ABOVE

Terms & conditions

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

Thakur 09/08/2021
PREPARED BY

For ULTIMATE ENVIROLYTICAL SOLUTIONS
09/08/2021
AUTHORIZED SIGNATORY

End of the test report

Ultimate
ENVIROLYTICAL SOLUTIONS

HDD-272, Phase III - Near JP Chowk
Ring Road No.-2, Kabir Nagar, Raipur (C.G.) - 492099
Ph : 0771 - 4027777 I Email : ultimatenviro@gmail.com

Recognized by Ministry of Environment Forest and Climate Change under EP act 1986

Name & Address Of The Customer			
To, **Jindal Power Limited** **P.O. Tamnar,** **District: Raigarh** **496107 (C.G.)**	Report No	UES/TR/21-22/1835	
	Lab Ref No	UES/21-22/W/3077-3079	
	Date of Sampling	29/07/2021	
	Date of Receipt	30/07/2021	
	Date of Report	09/08/2021	
	Date of analysis	Start:30/07/2021	END:09/08/2021

SAMPLE DETAILS

Customer Sample Id /Sampling Location	1. Pata Village	Latitude	22.13781
		Longitude	83.46132
	2. Kunjemura Village	Latitude	22.13519
		Longitude	83.46135
	3. Tamnar Village	Latitude	22.07879
		Longitude	83.42356
Customer Ref. No. & Date	4400013828, Date: 22/07/2020		
Sample Type	GroundWater		
Packing Of Sample	Plastic Bottle (5.0ltr.) Glass Bottle (1.0 ltr.)		
Sample Collected By	Laboratory Chemist		
Sample Condition At Receipt	Ok		

REPORT NO.1835

TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT		
				Acceptable Limit	Permissible limit	Pata Village	Kunjemura Village	Tamnar Village
A.	Organoleptic & Physical Parameters							
1	Colour	Hazen	IS:3025:(Part-4)	5	15	<1	<1	<1
2	Odour	-	IS 3025(part-5)	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
3	pH Value at 25.2°C	-	IS:3025:(Part-11)	6.5-8.5	No Relaxation	7.28	7.84	7.26
4	Taste	-	IS 3025(part-8)	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
5	Turbidity	NTU	IS 3025:(Part-10)	1	5	1.62	1.48	2.42
6	Total Dissolved Solids	mg/L	IS:3025:(Part-16)	500	2000	424.0	322.0	78.2
B.	General Parameters Concerning Substances undesirable in excessive amounts							
1	Aluminium (as Al)	mg/L	IS 3025(part-55)	0.03	0.2	N.D.	N.D.	N.D.
2	Ammonia (as total ammonia-N)	mg/L	IS 3025(part-34)	0.5	No Relaxation	N.D.	N.D.	N.D.
3	Anionic Detergent (as MBAS)	mg/L	Annex K of IS:13428	0.2	1.0	N.D.	N.D.	N.D.

Ultimate
ENVIROLYTICAL SOLUTIONS

HDD-272, Phase III - Near JP Chowk
Ring Road No.-2, Kabir Nagar, Raipur (C.G.) - 492099
Ph : 0771 - 4027777 I Email : ultimatenviro@gmail.com

Recognized by Ministry of Environment Forest and Climate Change under EP act 1986

REPORT NO.1835

TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT		
				Acceptable Limit	Permissible limit	Pata Village	Kunjemura Village	Tamnar Village
4	Barium (as Ba)	mg/L	Annex F of IS:13428	0.7	No Relaxation	N.D.	N.D.	N.D.
5	Boron (as B)	mg/L	IS 3025:(Part-57)	0.5	1.0	N.D.	N.D.	N.D.
6	Calcium (as Ca)	mg/L	IS 3025:(Part-40)	75	200	60.0	64.0	28.4
7	Chloramines (as Cl_2)	mg/L	IS 3025:(Part-26)	4.0	No Relaxation	N.D.	N.D.	N.D.
8	Chloride (as Cl)	mg/L	IS 3025:(Part-32)	250	1000	74.9	68.9	32.9
9	Copper (as Cu)	mg/L	IS 3025(part-42)	0.05	1.5	N.D.	N.D.	N.D.
10	Fluoride (as F)	mg/L	IS 3025(part-60)	1	1.5	0.12	0.16	0.11
11	Free Residual Chlorine	mg/L	IS 3025:(Part-26)	0.2	1	N.D.	N.D.	N.D.
12	Iron (as Fe)	mg/L	IS 3025(part-53)	0.3	No Relaxation	0.18	0.24	0.11
13	Magnesium (as Mg)	mg/L	IS 3025:(Part-46)	30	100	28.4	12.4	6.2
14	Manganese (as Mn)	mg/L	IS 3025(part-59)	0.1	0.3	N.D.	N.D.	N.D.
15	Mineral Oil	mg/L	Clause 6 of IS 3025 (Part-39) Infrared partition method	0.5	No Relaxation	N.D.	N.D.	N.D.
16	Nitrate (as NO_3)	mg/L	IS 3025(part-34)	45	No Relaxation	2.2	1.4	1.2
17	Phenolic Compound (as C6H5OH)	mg/L	IS 3025(part-43)	0.001	0.002	N.D.	N.D.	N.D.
18	Selenium (as Se)	mg/L	IS 3025(part-56)	0.01	No Relaxation	N.D.	N.D.	N.D.
19	Silver (as Ag)	mg/L	Annex J of IS 13428	0.1	No Relaxation	N.D.	N.D.	N.D.
20	Sulphate (as SO_4)	mg/L	IS 3025:(Part-24)	200	400	28.4	12.6	22.8
21	Sulphide (as H_2S)	mg/L	IS 3025:(Part-29)	0.05	No Relaxation	N.D.	N.D.	N.D.
22	Total Alkalinity (as $CaCO_3$)	mg/L	IS 3025:(Part-23)	200	600	88.0	142.0	68.0
23	Total Hardness (as $CaCO_3$)	mg/L	IS 3025:(Part-21)	200	600	142.0	198.0	68.0
24	Zinc (as Zn)	mg/L	IS 3025(part-49)	5	15	N.D.	N.D.	N.D.
C.	Parameters concerning toxic substances:-							
1	Cadmium (as Cd)	mg/L	IS 3025(part-41)	0.003	No Relaxation	N.D.	N.D.	N.D.
2	Cyanide (as CN)	mg/L	IS 3025(part-27)	0.05	No Relaxation	N.D.	N.D.	N.D.

Ultimate
ENVIROLYTICAL SOLUTIONS

HDD-272, Phase III - Near JP Chowk
Ring Road No.-2, Kabir Nagar, Raipur (C.G.) - 492099
Ph : 0771 - 4027777 I Email : ultimatenviro@gmail.com

Recognized by Ministry of Environment Forest and Climate Change under EP act 1986

REPORT NO.1835

TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT		
				Acceptable Limit	Permissible limit	Pata Village	Kunjemura Village	Tamnar Village
3	Lead (as Pb)	mg/L	IS 3025(part-47)	0.01	No Relaxation	N.D.	N.D.	N.D.
4	Mercury (as Hg)	mg/L	IS 3025(part-48)	0.001	No Relaxation	N.D.	N.D.	N.D.
5	Molybdenum (as Mo)	mg/L	IS 3025(part-2)	0.07	No Relaxation	N.D.	N.D.	N.D.
6	Nickel (as Ni)	mg/L	IS 3025(part-54)	0.02	No Relaxation	N.D.	N.D.	N.D.
7	Polychlorinated biphenyls	mg/L	ASTM 5175	0.0005	No Relaxation	N.D.	N.D.	N.D.
8	Polynuclear aromatic hydrocarbons (as PAH)	mg/L	APHA 6440	0.0001	No Relaxation	N.D.	N.D.	N.D.
9	Arsenic (as As)	mg/L	IS 3025(part-37)	0.01	0.05	N.D.	N.D.	N.D.
10	Chromium (as Cr)	mg/L	Annex J of IS:13428	0.05	No Relaxation	N.D.	N.D.	N.D.
11	Trihalomethanes:							
a)	Bromoform	mg/L	APHA 6232	0.1	No Relaxation	N.D.	N.D.	N.D.
b)	Dibromochloromethane	mg/L	APHA 6232	0.1	No Relaxation	N.D.	N.D.	N.D.
c)	Bromodichloromethane	mg/L	APHA 6232	0.06	No Relaxation	N.D.	N.D.	N.D.
d)	Chloroform	mg/L	APHA 6232	0.2	No Relaxation	N.D.	N.D.	N.D.
D.	Pesticides:-							
1	Alpha HCH	µg/l	USEPA 508	0.01		N.D.	N.D.	N.D.
2	Beta HCH	µg/l	USEPA 508	0.04		N.D.	N.D.	N.D.
3	Delta HCH	µg/l	USEPA 508	0.04		N.D.	N.D.	N.D.
4	Alachlor	µg/l	USEPA 525.2, 507	20		N.D.	N.D.	N.D.
5	Aldrin / Dieldrin	µg/l	USEPA 508	0.03		N.D.	N.D.	N.D.
6	Atrazine	µg/l	USEPA 525.2,8141 A	2		N.D.	N.D.	N.D.
7	Butachlor	µg/l	USEPA 525.2,8141 A	125		N.D.	N.D.	N.D.
8	Chlorpyriphos	µg/l	USEPA 525.2,8141 A	30		N.D.	N.D.	N.D.
9	DDT (o,p and p, p-Isomers of DDT, DDE and DDD)	µg/l	USEPA 508	1		N.D.	N.D.	N.D.
10	Gamma HCH	µg/l	USEPA 508	2		N.D.	N.D.	N.D.

Ultimate
ENVIROLYTICAL SOLUTIONS

HDD-272, Phase III - Near JP Chowk
Ring Road No.-2, Kabir Nagar, Raipur (C.G.) - 492099
Ph : 0771 - 4027777 | Email : ultimatenviro@gmail.com

Recognized by Ministry of Environment Forest and Climate Change under EP act 1986

REPORT NO.1838

TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT		
				Acceptable Limit	Permissible limit	Pata Village	Kunjemura Village	Tamnar Village
11	2,4-Dichlorophenoxyacetic Acid	µg/l	USEPA 515.1	30		N.D.	N.D.	N.D.
12	Endosulphan (alpha, beta and sulphate)	µg/l	USEPA 508	0.4		N.D.	N.D.	N.D.
13	Ethion	µg/l	USEPA 1657 A	3		N.D.	N.D.	N.D.
14	Isoproturon	µg/l	USEPA 532	9		N.D.	N.D.	N.D.
15	Malathion	µg/l	USEPA 8141 A	190		N.D.	N.D.	N.D.
16	Methyl Parathion	µg/l	USEPA 8141 A	0.3		N.D.	N.D.	N.D.
17	Monocrotophos	µg/l	USEPA 8141 A	1		N.D.	N.D.	N.D.
18	Phorate	µg/l	USEPA 8141 A	2		N.D.	N.D.	N.D.
E.	Microbial Parameters							
1	Total Coliform	MPN/100ml	IS:1622:1981:RA:2019	-		Absent	Absent	Absent
2	E. Coli	MPN/100ml	IS:1622:1981:RA: 2019	-		Absent	Absent	Absent

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

REMARKS: RESULTS ARE AS ABOVE

Terms & conditions

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

PREPARED BY 09/08/2021

For ULTIMATE ENVIROLYTICAL SOLUTIONS

09/08/2021

AUTHORIZED SIGNATORY

End of the test report

Annex-III(b)

Format No. : UES/FORM/09

Ultimate
ENVIROLYTICAL SOLUTIONS

HDD-272, Phase III - Near JP Chowk
Ring Road No.-2, Kabir Nagar, Raipur (C.G.) - 492099
Ph : 0771 - 4027777 I Email : ultimatenviro@gmail.com

Recognized by Ministry of Environment Forest and Climate Change under EP act 1986

Name & Address Of The Customer			
To, **Jindal Power Limited** **P.O. Tamnar,** **District: Raigarh** **496107 (C.G.)**	Report No	UES/TR/21-22/1836	
	Lab Ref No	UES/21-22/W/3080-3081	
	Date of Sampling	29/07/2021	
	Date of Receipt	30/07/2021	
	Date of Report	09/08/2021	
	Date of analysis	Start:30/07/2021	End: 09/08/2021

SAMPLE DETAILS			
Customer Sample Id /Sampling Location	1. Kelo River Upstream 2. Kelo River Downstream	Latitude	22.69700
		Longitude	83.42118
Customer Ref. No. & Date	4400013828, Date: 22/07/2020		
Sample Type	SurfaceWater		
Packing Of Sample	Plastic Bottle (5.0ltr.) Glass Bottle (1.0 ltr.)		
Sample Collected By	Laboratory Chemist		
Sample Condition At Receipt	Ok		

REPORT NO.01836

TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT	
				Acceptable Limit	Permissible limit	Kelo River Upstream	Kelo River Down stream
A.	Organoleptic & Physical Parameters						
1	Colour	Hazen	IS:3025:(Part-4)	5	15	15.5	20.5
2	Odour	-	IS:3025:(part-5)	Agreeable	Agreeable	Agreeable	Agreeable
3	pH Value at 25.2°C	-	IS:3025:(Part-11)	6.5-8.5	No Relaxation	6.98	7.11
4	Taste	-	IS 3025(part-8)	Agreeable	Agreeable	Agreeable	Agreeable
5	Turbidity	NTU	IS 3025:(Part-10)	1	5	38.0	52.0
6	Total Dissolved Solids	mg/L	IS:3025:(Part-16)	500	2000	124.0	186.0
B.	General Parameters Concerning Substances undesirable in excessive amounts						
1	Aluminium (as Al)	mg/L	IS 3025(part-55)	0.03	0.2	N.D.	N.D.
2	Ammonia (as total ammonia-N)	mg/L	IS 3025(part-34)	0.5	No Relaxation	N.D.	N.D.
3	Anionic Detergent (as MBAS)	mg/L	Annex K of IS:13428	0.2	1.0	N.D.	N.D.
4	Barium (as Ba)	mg/L	Annex F of IS:13428	0.7	No Relaxation	N.D.	N.D.
5	Boron (as B)	mg/L	IS 3025:(Part-57)	0.5	1.0	N.D.	N.D.
6	Calcium (as	mg/L	IS 3025:(Part-40)	75	200	18.4	36.4

Ultimate
ENVIROLYTICAL SOLUTIONS

HDD-272, Phase III - Near JP Chowk
Ring Road No.-2, Kabir Nagar, Raipur (C.G.) - 492099
Ph : 0771 - 4027777 I Email : ultimatenviro@gmail.com

Recognized by Ministry of Environment Forest and Climate Change under EP act 1986

REPORT NO.01836

TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT	
				Acceptable Limit	Permissible limit	Kolo River Upstream	Kolo River Down stream
	Ca)						
7	Chloramines (as Cl_2)	mg/L	IS 3025:(Part-26)	4.0	No Relaxation	N.D.	N.D.
8	Chloride (as Cl)	mg/L	IS 3025:(Part-32)	250	1000	16.9	38.9
9	Copper (as Cu)	mg/L	IS 3025(part-42)	0.05	1.5	N.D.	N.D.
10	Fluoride (as F)	mg/L	IS 3025(part-60)	1	1.5	0.16	0.32
11	Free Residual Chlorine	mg/L	IS 3025:(Part-26)	0.2	1	N.D.	N.D.
12	Iron (as Fe)	mg/L	IS 3025(part-53)	0.3	No Relaxation	0.12	0.38
13	Magnesium (as Mg)	mg/L	IS 3025:(Part-46)	30	100	4.5	8.2
14	Manganese (as Mn)	mg/L	IS 3025(part-59)	0.1	0.3	N.D.	N.D.
15	Mineral Oil	mg/L	Clause 6 of IS 3025 (Part-39) Infrared partition method	0.5	No Relaxation	N.D.	N.D.
16	Nitrate (as NO_3)	mg/L	IS 3025(part-34)	45	No Relaxation	8.2	4.2
17	Phenolic Compound (as C6H5OH)	mg/L	IS 3025(part-43)	0.001	0.002	N.D.	N.D.
18	Selenium (as Se)	mg/L	IS 3025(part-56)	0.01	No Relaxation	N.D.	N.D.
19	Silver (as Ag)	mg/L	Annex J of IS 13428	0.1	No Relaxation	N.D.	N.D.
20	Sulphate (as SO_4)	mg/L	IS 3025:(Part-24)	200	400	16.4	28.4
21	Sulphide (as H_2S)	mg/L	IS 3025:(Part-29)	0.05	No Relaxation	N.D.	N.D.
22	Total Alkalinity (as $CaCO_3$)	mg/L	IS 3025:(Part-23)	200	600	36.0	82.0
23	Total Hardness (as $CaCO_3$)	mg/L	IS 3025:(Part-21)	200	600	62.0	120.0
24	Zinc (as Zn)	mg/L	IS 3025(part-49)	5	15	N.D.	N.D.
C.	Parameters concerning toxic substances:-						
1	Cadmium (as Cd)	mg/L	IS 3025(part-41)	0.003	No Relaxation	N.D.	N.D.
2	Cyanide (as CN)	mg/L	IS 3025(part-27)	0.05	No Relaxation	N.D.	N.D.
3	Lead (as Pb)	mg/L	IS 3025(part-47)	0.01	No Relaxation	N.D.	N.D.

Ultimate
ENVIROLYTICAL SOLUTIONS

HDD-272, Phase III - Near JP Chowk
Ring Road No.-2, Kabir Nagar, Raipur (C.G.) - 492099
Ph : 0771 - 4027777 I Email : ultimatenviro@gmail.com

Recognized by Ministry of Environment Forest and Climate Change under EP act 1986

REPORT NO.01838

TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT	
				Acceptable Limit	Permissible limit	Kelo River Upstream	Kelo River Down stream
4	Mercury (as Hg)	mg/L	IS 3025(part-48)	0.001	No Relaxation	N.D.	N.D.
5	Molybdenum (as Mo)	mg/L	IS 3025(part-2)	0.07	No Relaxation	N.D.	N.D.
6	Nickel (as Ni)	mg/L	IS 3025(part-54)	0.02	No Relaxation	N.D.	N.D.
7	Polychlorinated biphenyls	mg/L	ASTM 5175	0.0005	No Relaxation	N.D.	N.D.
8	Polynuclear aromatic hydrocarbons (as PAH)	mg/L	APHA 6440	0.0001	No Relaxation	N.D.	N.D.
9	Arsenic (as As)	mg/L	IS 3025(part-37)	0.01	0.05	N.D.	N.D.
10	Chromium (as Cr)	mg/L	Annex J of IS:13428	0.05	No Relaxation	N.D.	N.D.
11	Trihalomethanes:						
a)	Bromoform	mg/L	APHA 6232	0.1	No Relaxation	N.D.	N.D.
b)	Dibromochloromethane	mg/L	APHA 6232	0.1	No Relaxation	N.D.	N.D.
c)	Bromodichloromethane	mg/L	APHA 6232	0.06	No Relaxation	N.D.	N.D.
d)	Chloroform	mg/L	APHA 6232	0.2	No Relaxation	N.D.	N.D.
D.	Pesticides:-						
1	Alpha HCH	µg/l	USEPA 508	0.01		N.D.	N.D.
2	Beta HCH	µg/l	USEPA 508	0.04		N.D.	N.D.
3	Delta HCH	µg/l	USEPA 508	0.04		N.D.	N.D.
4	Alachlor	µg/l	USEPA 525.2, 507	20		N.D.	N.D.
5	Aldrin / Dieldrin	µg/l	USEPA 508	0.03		N.D.	N.D.
6	Atrazine	µg/l	USEPA 525.2,8141 A	2		N.D.	N.D.
7	Butachlor	µg/l	USEPA 525.2,8141 A	125		N.D.	N.D.
8	Chlorpyriphos	µg/l	USEPA 525.2,8141 A	30		N.D.	N.D.
9	DDT (o,p and p, p-Isomers of DDT, DDE and DDD)	µg/l	USEPA 508	1		N.D.	N.D.
10	Gamma HCH	µg/l	USEPA 508	2		N.D.	N.D.
11	2,4-Dichlorophenox	µg/l	USEPA 515.1	30		N.D.	N.D.

Ultimate
ENVIROLYTICAL SOLUTIONS

HDD-272, Phase III - Near JP Chowk
Ring Road No.-2, Kabir Nagar, Raipur (C.G.) - 492099
Ph : 0771 - 4027777 I Email : ultimatenviro@gmail.com

Recognized by Ministry of Environment Forest and Climate Change under EP act 1986

REPORT NO.01836

TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT	
				Acceptable Limit	Permissible limit	Kelo River Upstream	Kelo River Down stream
	yacetic Acid						
12	Endosulphan (alpha, beta and sulphate)	µg/l	USEPA 508	0.4		N.D.	N.D.
13	Ethion	µg/l	USEPA 1657 A	3		N.D.	N.D.
14	Isoproturon	µg/l	USEPA 532	9		N.D.	N.D.
15	Malathion	µg/l	USEPA 8141 A	190		N.D.	N.D.
16	Methyl Parathion	µg/l	USEPA 8141 A	0.3		N.D.	N.D.
17	Monocrotophos	µg/l	USEPA 8141 A	1		N.D.	N.D.
18	Phorate	µg/l	USEPA 8141 A	2		N.D.	N.D.
E.	Microbial Parameters						
1	Total Coliform	MPN/ 100m l	IS:1622:1981:RA:2 019	-		20.0	42.0
2	E. Coli	MPN/ 100m l	IS:1622:1981:RA: 2019	-		10.0	12.0

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

REMARKS: RESULTS ARE AS ABOVE

Terms & conditions

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

Thakur 09/08/2021
PREPARED BY

For ULTIMATE ENVIROLYTICAL SOLUTIONS
09/08/2021
AUTHORIZED SIGNATORY

End of the test report

Jindal Power Limited, Tamnar

Annexure-IV

TREATED EFFLUENT QUALITY MONITORING REPORT OF APRIL , 2021 TO SEPTEMBER 2021

Month	Parameters	Guard Pond	Treated Ash Water Pond	ETP Treated Effluent	STP Treated Effluent (Plant)	Limit
Apr-21	pH	7.2	6.9	7.5	7.3	**5.5-9.0**
	TSS (mg/l)	34	22	25	23	**100**
	COD (mg/l)	60	50	55	50	**250**
	BOD (mg/l)	17.5	16.5	15.5	18.5	**30**
	Oil &Grease (mg/l)	3	1	2.5	2	**10**
May-21	pH	7.6	7.3	7.8	7.7	**5.5-9.0**
	TSS (mg/l)	38	18	22	28	**100**
	COD (mg/l)	65	55	60	55	**250**
	BOD (mg/l)	18.5	17	16	19.5	**30**
	Oil &Grease (mg/l)	3.5	1.5	3	2.5	**10**
Jun-21	pH	7.4	7.1	7.6	7.5	**5.5-9.0**
	TSS (mg/l)	34	22	26	33	**100**
	COD (mg/l)	60	50	55	50	**250**
	BOD (mg/l)	17.6	15.7	16.5	19.2	**30**
	Oil &Grease (mg/l)	3	1.5	2.5	2	**10**
Jul-21	pH	7.6	7.3	7.8	7.2	**5.5-9.0**
	TSS (mg/l)	38	25	28	36	**100**
	COD (mg/l)	55	50	60	55	**250**
	BOD (mg/l)	18.5	16.4	18.8	17.6	**30**
	Oil &Grease (mg/l)	2.5	1	2	2.5	**10**
Aug-21	pH	7.4	7.1	7.5	7.6	**5.5-9.0**
	TSS (mg/l)	40	27	24	32	**100**
	COD (mg/l)	80	65	55	75	**250**
	BOD (mg/l)	18.4	14.2	14.5	20.5	**30**
	Oil &Grease (mg/l)	2	1	2.5	2	**10**
Sep-21	pH	7.6	7.3	7.4	7.8	**5.5-9.0**
	TSS (mg/l)	42	32	28	36	**100**
	COD (mg/l)	65	55	60	70	**250**
	BOD (mg/l)	18.7	16.8	18.2	17.5	**30**
	Oil &Grease (mg/l)	2.5	1.5	2	2.5	**10**

Note: - No effluent is being discharged outside plant premises and zero discharge is being maintained.

Jindal Power Limited, Tamnar

Annexure-V (a)

AMBIENT AIR QUALITY MONITORING DATA FOR THE MONTH OF APRIL 2021

Date	Location-1					Location-2					Location-3					Location-4				
	New Switch Yard					Near Hostel 5					Savitrinagar Colony (Tehlirampur village)					Tamnar village				
	PM_{10}	$PM_{2.5}$	SO_2	NO_x	CO	PM_{10}	$PM_{2.5}$	SO_2	NO_x	CO	PM_{10}	$PM_{2.5}$	SO_2	NO_x	CO	PM_{10}	$PM_{2.5}$	SO_2	NO_x	CO
Distance (KM) (w.r.t stack)	0.2					0.5					5.0					3.0				
Direction (w.r.t stack)	NW					ESE					ENE					S				
01.04.2021	64.2	14.8	11.5	24.7	0.42	NA	31.5	19.6	24.6	0.65	62.4	30.2	10.4	22.6	0.4	69.4	29.5	15.8	25.1	0.64
05.04.2021	64.8	15.9	13.5	29	0.4	NA	26.1	19.6	25.3	0.86	67.9	17.2	11.1	22.4	0.6	66.3	24.7	18.8	24.1	0.85
08.04.2021	76.6	22.1	17.1	28.4	0.31	NA	29.2	16.6	26.3	0.62	54.5	28.6	15.2	23.8	0.5	77.8	31.2	16.3	23.9	0.76
12.04.2021	42.5	17.4	13.3	28.2	0.5	NA	18.2	13.8	31.6	0.62	54.7	20.5	16.3	22.6	0.6	62.5	21.3	16.2	24.3	0.79
15.04.2021	43.8	14.4	16.1	27.9	0.61	NA	19.4	15.6	25.7	0.48	44.9	19.7	13.1	22.9	0.6	55.3	23.5	8.2	20.8	0.62
19.04.2021	55.6	13.2	11	29.1	0.5	NA	18.4	17.3	27.1	0.59	70.1	21.9	14.6	22.1	0.9	56.2	24.4	8.7	21.1	0.56
22.04.2021	36.8	10.9	14.7	28.1	0.39	NA	13.2	22	24	0.86	43	18.4	18.1	22.3	1	56.4	20.5	8.2	21.6	0.64
26.04.2021	47.5	8	9.3	28.9	0.6	NA	13.4	23.2	31.1	0.97	51.9	17.4	18.2	22.6	0.8	56.7	24.2	8.6	22.7	0.65
29.04.2021	64.1	12.8	13.9	29.2	0.52	NA	12.2	23.8	32.1	0.92	29.9	25.2	21.6	22.4	0.8	54.3	18.5	8.7	20.5	0.57
Permissible Limits	100	60	80	80	2	100	60	80	80	2	100	60	80	80	2	100	60	80	80	2

Date	Location-5					Location-6					Location-7					Location-8				
	JIPT Building					Gorhi village					Regaon village					Nirman Bhavan				
	PM_{10}	$PM_{2.5}$	SO_2	NO_x	CO	PM_{10}	$PM_{2.5}$	SO_2	NO_x	CO	PM_{10}	$PM_{2.5}$	SO_2	NO_x	CO	PM_{10}	$PM_{2.5}$	SO_2	NO_x	CO
Distance (KM) (w.r.t stack)	0.2					4.5					3.0					0.2				
Direction (w.r.t stack)	W					SSW					N					S				
01.04.2021	67.2	22.3	16.3	23.4	0.7	68.7	26.5	11.8	21.2	0.69	50.9	20.5	13.4	24.7	0.62	71.6	33.1	18.7	26.2	0.68
05.04.2021	74.3	36.1	17.5	26.8	0.8	74.2	27.8	13	21.4	0.84	45.9	25.1	9.6	24.4	0.66	75.4	34.6	16.2	24.8	0.75
08.04.2021	81.6	34.7	18.4	27.6	0.7	68.3	32.5	15.3	23.7	0.77	47.6	21.2	16.1	24.7	0.71	82.3	37.9	17.6	26.7	0.84
12.04.2021	75.8	32.6	16.8	25.1	0.7	64.8	25.2	14.2	24.8	0.73	51.5	14.1	14.5	24.1	0.59	78.9	34.5	15.9	24.5	0.7
15.04.2021	67.2	24.3	14.3	22.3	0.7	51.5	22.5	12.6	21.1	0.66	46.8	9.1	13.8	24.5	0.53	62.5	25.1	16.5	22.3	0.74
19.04.2021	72.4	32.5	15.4	28.1	0.7	45.9	27.1	8.3	21.4	0.8	46.8	10.8	8.2	24.5	0.68	72.1	26.8	14.6	25.4	0.69
22.04.2021	76.1	30.3	12.9	25.2	0.8	53.4	26.3	11.5	22.1	0.85	47.2	9.3	8	25.2	0.76	74.2	28.3	17.3	28.7	0.76
26.04.2021	68.7	26.5	15.7	24.7	0.8	39.2	30.6	10.6	20.8	0.73	45.2	7.6	9.2	14.8	0.61	68.7	24.2	14.7	24.3	0.81
29.04.2021	66.2	24.2	16.5	23.8	0.7	52.4	26.7	11.2	21.8	0.87	51.4	10.3	14.6	23.4	0.75	67.5	22.7	15.3	25.6	0.72
Permissible Limits	100	60	80	80	2	100	60	80	80	2	100	60	80	80	2	100	60	80	80	2

Note: All Units in $\mu g/m^3$ except CO (in mg/m^3)

Jindal Power Limited, Tamnar

Annexure-V (b)

AMBIENT AIR QUALITY MONITORING DATA FOR THE MONTH OF MAY,2021

Date	Location-1					Location-2					Location-3					Location-4				
	New Switch Yard					Near Hostel 5					Savitrinagar Colony (Tehlirampur village)					Tamnar village				
	PM_{10}	$PM_{2.5}$	SO_2	NO_x	CO	PM_{10}	$PM_{2.5}$	SO_2	NO_x	CO	PM_{10}	$PM_{2.5}$	SO_2	NO_x	CO	PM_{10}	$PM_{2.5}$	SO_2	NO_x	CO
Distance (KM) (w.r.t stack)	0.2					0.5					5.0					3.0				
Direction (w.r.t stack)	NW					ESE					ENE					S				
03.05.2021	42.5	10.6	26.4	27	0.38	NA	12.4	22.6	32.3	0.86	48.2	21.7	18.3	21.8	0.75	54.1	18.4	8.6	20.4	0.59
06.05.2021	49.6	10.3	21.4	26.5	0.73	NA	12.8	23.6	31.5	0.84	42.1	16.1	9.5	22.4	0.51	54.5	14.5	8.4	19.9	0.54
10.05.2021	NA	15.6	18.3	26.2	0.45	NA	18.4	15.8	25.6	0.68	62.5	15.3	11.2	23.2	0.61	55.2	12.4	8.4	19.7	0.54
13.05.2021	NA	16.8	15.8	20.2	0.48	NA	18.3	16.3	27.2	0.65	56.3	12.6	14.3	22.2	0.41	45.6	10.4	9.3	22.1	0.53
17.05.2021	NA	14.8	16.5	24.8	0.32	NA	27.7	20.8	27.3	0.45	57.7	13.7	15.2	22.6	0.57	47.7	11.3	10.3	24.8	0.54
20.05.2021	NA	10.7	14.3	23.4	0.44	NA	26.4	18.5	27.7	0.54	53.2	12.4	13.2	22.3	0.57	42.8	11.8	9.9	23.7	0.46
24.05.2021	NA	20.8	14.2	23.4	0.57	NA	31.6	16.4	28.5	0.51	52.7	18.9	11.5	24.4	0.64	43.8	19.1	10.1	24.2	0.68
27.05.2021	NA	14.8	15.2	26.1	0.42	NA	15.7	12.7	26.5	0.52	35.3	10.5	8.2	24.2	0.48	32.8	8.8	7.6	23.8	0.56
31.05.2021	NA	NA	NA	NA	NA	NA	31.8	14.2	23.5	0.53	61.6	27.5	9.8	23.9	0.38	42.6	24.7	9.4	23.2	0.62
Permissible Limits	100	60	80	80	2	100	60	80	80	2	100	60	80	80	2	100	60	80	80	2

Date	Location-5					Location-6					Location-7					Location-8				
	JIPT Building					Gorhi village					Regaon village					Nirman Bhavan				
	PM_{10}	$PM_{2.5}$	SO_2	NO_x	CO	PM_{10}	$PM_{2.5}$	SO_2	NO_x	CO	PM_{10}	$PM_{2.5}$	SO_2	NO_x	CO	PM_{10}	$PM_{2.5}$	SO_2	NO_x	CO
Distance (KM) (w.r.t stack)	0.2					4.5					3.0					0.2				
Direction (w.r.t stack)	W					SSW					N					S				
03.05.2021	68.5	23.5	16.5	23.6	0.74	52.1	25.4	10.9	21.6	0.76	47.8	10.6	12.3	21.2	0.67	64.2	21.6	15.2	22.4	0.55
06.05.2021	72.2	26.4	18.2	25.8	0.78	39.5	22	12.5	22.4	0.85	47.5	12.5	11.3	24.5	0.58	67.6	24.2	17.6	23.1	0.63
10.05.2021	69.5	24.2	14.6	24.6	0.75	45.4	17.9	9.7	22.3	0.63	45.2	15.2	7.2	25.7	0.51	63.5	22.8	15.2	22.4	0.65
13.05.2021	65.4	22.9	15.8	22.7	0.72	31.8	10.5	9.5	21.3	0.51	46.4	7.9	7.8	19.6	0.54	61.8	20.5	13.9	21.6	0.58
17.05.2021	74.6	26.7	13.7	23.8	0.64	43.9	17.9	11.4	24.1	0.43	44.7	12.3	12.4	22.1	0.46	68.2	24.3	12.9	22.4	0.62
20.05.2021	77.4	28.3	20.2	25.2	0.58	53.8	15.7	10.4	20.9	0.47	48.2	14.4	7.4	21.8	0.53	70.5	26.2	18.4	23.5	0.56
24.05.2021	65.2	23.4	17.6	24.3	0.65	56.6	20.4	10.2	22.5	0.55	44.8	12.8	9.1	22.7	0.51	61.2	21.5	16.2	22.6	0.61
27.05.2021	50.6	15.6	13.2	22.8	0.57	33.5	10.7	10.5	22.6	0.42	36.3	6.9	8.1	21.9	0.48	46.8	13.8	12.8	21.8	0.58
31.05.2021	76.4	26.8	14.2	23.2	0.52	56.1	24.4	9.9	23.9	0.48	47.4	12.2	8.2	22.9	0.59	72.3	24.3	13.5	23.5	0.49
Permissible Limits	100	60	80	80	2	100	60	80	80	2	100	60	80	80	2	100	60	80	80	2

Note: All Units in $\mu g/m^3$ except CO (in mg/m^3)

Jindal Power Limited, Tamnar

Annexure-V (c)

AMBIENT AIR QUALITY MONITORING DATA FOR THE MONTH OF JUNE,2021

Date	Location-1					Location-2					Location-3					Location-4				
	New Switch Yard					Near Hostel 5					Savitrinagar Colony (Tehlirampur village)					Tamnar village				
	PM_{10}	$PM_{2.5}$	SO_2	NO_x	CO	PM_{10}	$PM_{2.5}$	SO_2	NO_x	CO	PM_{10}	$PM_{2.5}$	SO_2	NO_x	CO	PM_{10}	$PM_{2.5}$	SO_2	NO_x	CO
Distance (KM) (w.r.t stack)	0.2					0.5					5.0					3.0				
Direction (w.r.t stack)	NW					ESE					ENE					S				
03.06.2021	NA	NA	NA	NA	NA	NA	39.2	15.1	24.3	0.56	43.8	29.7	15.6	24.9	0.44	49.4	21.2	6.8	22.4	0.67
07.06.2021	NA	NA	NA	NA	NA	NA	31.8	16.4	29.3	0.51	49.2	27.4	12.1	24.2	0.52	49.8	14.6	7.8	21.8	0.62
10.06.2021	NA	NA	NA	NA	NA	NA	27.1	13.8	24.6	0.44	70.2	19.5	13.2	24.4	0.39	52.8	24.2	15.2	24.1	0.68
14.06.2021	NA	NA	NA	NA	NA	NA	32.3	14.1	22.1	0.58	42.9	10.6	9.5	24.9	0.23	50.9	9.4	15.4	24.3	0.85
17.06.2021	NA	NA	NA	NA	NA	NA	20.4	11.5	25.5	0.52	54.2	13.8	7.5	25.8	0.32	51.2	15.6	9.8	23.2	0.69
21.06.2021	NA	NA	NA	NA	NA	NA	27.6	11.5	22.2	0.49	56.8	14.7	12.2	26.4	0.32	46.3	21.1	12.3	23.7	0.61
24.06.2021	NA	23.5	NA	23.9	0.53	NA	31.5	17.4	27.5	0.58	47.5	17.1	9.1	25.3	0.35	55.2	22.6	8.8	24.3	0.62
28.06.2021	NA	18.9	NA	27.8	0.45	NA	30.2	17.6	28.2	0.61	52.1	18.1	15.2	25.4	0.42	55.2	23.3	12.8	24.3	0.66
Permissible Limits	100	60	80	80	2	100	60	80	80	2	100	60	80	80	2	100	60	80	80	2
Date	Location-5					Location-6					Location-7					Location-8				
	JIPT Building					Gorhi village					Regaon village					Nirman Bhavan				
	PM_{10}	$PM_{2.5}$	SO_2	NO_x	CO	PM_{10}	$PM_{2.5}$	SO_2	NO_x	CO	PM_{10}	$PM_{2.5}$	SO_2	NO_x	CO	PM_{10}	$PM_{2.5}$	SO_2	NO_x	CO
Distance (KM) (w.r.t stack)	0.2					4.5					3.0					0.2				
Direction (w.r.t stack)	W					SSW					N					S				
03.06.2021	56.6	18.3	10.3	23	0.52	54.2	20.4	11.4	27.4	0.41	33.4	16.3	7.5	22.2	0.61	52.3	17.2	9.8	22.8	0.62
07.06.2021	58.2	19.4	12.2	23	0.54	52.3	24.5	11.1	27.1	0.46	38.6	11.8	7.8	24.6	0.64	54.6	18.5	11.2	23.2	0.58
10.06.2021	62.5	21.3	14.3	22	0.56	50.2	19.3	12.5	NA	0.45	43.8	14.5	10.1	22.7	0.57	60.5	20.2	12.2	22.1	0.59
14.06.2021	68.2	22.5	15.5	24	0.66	NA	15.6	14.2	NA	0.54	37.2	5.5	12.9	21.6	0.63	64.2	21.3	13.4	22.9	0.63
17.06.2021	64.3	20.4	13.6	24	0.72	38.2	11.8	10.3	22.3	0.44	31.3	9.2	8.5	23.3	0.47	58.3	19.4	12.8	21.9	0.68
21.06.2021	72.3	23.6	15.6	25	0.62	43.5	24.2	17.2	22.7	0.47	44.2	14.5	10.7	24.1	0.49	68.5	22.5	13.8	23.2	0.65
24.06.2021	76.2	25.4	16.2	26	0.58	48.2	22.3	12.8	24.6	0.58	42.3	14.2	7.8	22.3	0.48	73.6	23.1	14.8	24.1	0.69
28.06.2021	68.4	22.8	14.3	24	0.65	56.3	20.4	15.7	24.2	0.64	50.6	18.3	13.6	24.1	0.46	75.6	24.2	15.3	25.3	0.72
Permissible Limits	100	60	80	80	2	100	60	80	80	2	100	60	80	80	2	100	60	80	80	2
Note: All Units in $\mu g/m^3$ except CO (in mg/m^3)																				

Jindal Power Limited, Tamnar

Annexure-V (d)

AMBIENT AIR QUALITY MONITORING DATA FOR THE MONTH OF JULY, 2021

Date	Location-1					Location-2					Location-3					Location-4				
	New Switch Yard					Near Hostel 5					Savitrinagar Colony (Tehlirampur village)					Tamnar village				
	PM_{10}	$PM_{2.5}$	SO_2	NO_x	CO	PM_{10}	$PM_{2.5}$	SO_2	NO_x	CO	PM_{10}	$PM_{2.5}$	SO_2	NO_x	CO	PM_{10}	$PM_{2.5}$	SO_2	NO_x	CO
Distance (KM) (w.r.t stack)	0.2					0.5					5.0					3.0				
Direction (w.r.t stack)	NW					ESE					ENE					S				
01.07.2021	NA	26.1	NA	28.3	0.39	NA	36.3	17.5	27.8	0.62	46.1	14.4	10.6	25.7	0.5	58.6	18.7	10.3	25.1	0.66
05.07.2021	NA	22.1	NA	24.8	0.32	NA	28.6	17.4	27.5	0.65	51.4	10.5	5.6	23.8	0.4	56.1	12.8	12.5	25.6	0.67
08.07.2021	NA	21.5	NA	25.4	0.28	NA	30.8	15.9	27.2	0.54	48.5	13.2	10.8	NA	0.6	55.3	18.5	11.8	23.2	0.66
12.07.2021	NA	21.7	NA	30.9	0.44	NA	28.7	18.6	27.5	0.65	65.3	9.7	11.9	NA	0.7	58.7	19.6	12.5	23.8	0.64
15.07.2021	52.6	23.4	12.5	26.4	0.36	NA	25.1	18.7	27.9	0.54	61.4	15.7	9.5	NA	0.5	60.6	24.3	14.2	24.8	0.61
19.07.2021	58.3	19.5	15.8	27.6	0.48	NA	24.5	16.2	27.5	0.58	58.2	21.2	13.3	NA	0.5	62.4	22.3	16.3	24.8	0.63
22.07.2021	46.4	20.1	13.2	32.2	0.42	NA	26.6	13.6	27.5	0.52	55.5	17.8	12.4	NA	0.4	54.6	19.3	14.2	25.4	0.68
26.07.2021	46.5	11.8	13.8	27.4	0.46	NA	20.5	14.3	27.8	0.55	50.2	14.8	10.6	NA	0.6	56.7	19.3	15.8	24.2	0.65
29.07.2021	38.5	9.2	12.9	23.8	0.45	NA	12.6	12.3	26.8	0.47	40.2	9.4	11.3	22.8	0.3	42.3	13.2	12.8	22.6	0.62
Permissible Limits	100	60	80	80	2	100	60	80	80	2	100	60	80	80	2	100	60	80	80	2

Date	Location-5					Location-6					Location-7					Location-8				
	JIPT Building					Gorhi village					Regaon village					Nirman Bhavan				
	PM_{10}	$PM_{2.5}$	SO_2	NO_x	CO	PM_{10}	$PM_{2.5}$	SO_2	NO_x	CO	PM_{10}	$PM_{2.5}$	SO_2	NO_x	CO	PM_{10}	$PM_{2.5}$	SO_2	NO_x	CO
Distance (KM) (w.r.t stack)	0.2					4.5					3.0					0.2				
Direction (w.r.t stack)	W					SSW					N					S				
01.07.2021	65.8	20.3	15.3	23.6	0.5	58.2	25.3	14.2	24.6	0.67	46.8	20.5	12.3	22.8	0.4	62.4	19.2	15.3	23.2	0.56
05.07.2021	62.7	18.6	14.8	24.5	0.6	52.6	21.5	13.6	24.7	0.63	44.2	18.7	12.4	23.5	0.5	60.3	17.4	14.4	22.7	0.52
08.07.2021	58.5	17.2	13.9	22.8	0.6	53.6	21.2	13.6	23.2	0.62	43.2	17.5	9.8	22.8	0.4	54.2	15.6	13.5	23.1	0.51
12.07.2021	54.2	14.6	12.5	23.1	0.5	55.1	22.5	12.3	23.6	0.56	46.4	18.9	11.5	23.8	0.5	50.6	16.2	13.2	22.8	0.49
15.07.2021	50.3	13.4	13.5	23.3	0.5	68.2	24.6	14.3	24.4	0.67	54.2	17.3	12.9	23.3	0.5	48.2	14.8	14.1	22.4	0.46
19.07.2021	48.6	12.8	12.8	22.9	0.5	48.3	16.8	12.6	23.5	0.46	66.5	23.4	14.6	23.2	0.7	44.6	13.7	13.8	21.9	0.53
22.07.2021	42.5	12.2	13.1	22.4	0.5	60.2	22.3	16.3	24.2	0.72	40.5	17.4	12.9	22.9	0.4	40.4	12.8	14.5	23.1	0.57
26.07.2021	38.6	11.4	11.8	22.1	0.5	56.8	20.7	14.7	23.2	0.66	45.6	16.5	13.7	22.9	0.5	36.2	12.3	13.2	22.3	0.44
29.07.2021	36.4	10.6	10.9	21.6	0.5	40.5	12.6	13.2	22.8	0.64	35.2	10.6	11.8	21.9	0.4	32.6	13.2	12.5	21.5	0.43
Permissible Limits	100	60	80	80	2	100	60	80	80	2	100	60	80	80	2	100	60	80	80	2

Note: All Units in $\mu g/m^3$ except CO (in mg/m^3)

Jindal Power Limited, Tamnar

Annexure-V (e)

AMBIENT AIR QUALITY MONITORING DATA FOR THE MONTH OF AUGUST, 2021

Date	Location-1					Location-2					Location-3					Location-4				
	New Switch Yard					Near Hostel 5					Savitrinagar Colony (Tehlirampur village)					Tamnar village				
	PM_{10}	$PM_{2.5}$	SO_2	NO_x	CO	PM_{10}	$PM_{2.5}$	SO_2	NO_x	CO	PM_{10}	$PM_{2.5}$	SO_2	NO_x	CO	PM_{10}	$PM_{2.5}$	SO_2	NO_x	CO
Distance (KM) (w.r.t stack)	0.2					0.5					5.0					3.0				
Direction (w.r.t stack)	NW					ESE					ENE					S				
02.08.2021	42.6	7.4	11.3	22.9	0.44	NA	10.3	9.6	27.3	0.49	40.3	9.2	15.8	22.3	0.3	45.2	14.5	14.1	23.9	0.58
05.08.2021	50.4	18.2	12.4	29.6	0.42	NA	21.4	14.7	27.7	0.49	51.9	15.9	12.2	22.9	0.5	62.6	23.1	18.6	24.2	0.63
09.08.2021	45.3	19.2	16.4	26.7	0.46	NA	20.2	14.2	27.7	0.52	52.6	14.2	11.9	23.4	0.6	55.4	20.5	15.4	24.2	0.67
12.08.2021	54.2	17.1	16.5	25.6	0.48	NA	22.3	15.6	27.7	0.56	56.4	16.2	15.4	22.8	0.5	62.3	20.6	17.2	25.2	0.66
16.08.2021	32.2	10.6	12.2	26.3	0.38	NA	12.5	11.7	28.2	0.55	38.6	15.4	15.2	22.4	0.5	44.2	13.5	8.8	23.3	0.66
19.08.2021	38.5	15.2	12.6	29.6	0.47	NA	17.5	12.8	27.8	0.48	42.9	12.3	11.1	26.4	0.4	40.8	14.8	12.3	22.9	0.67
23.08.2021	39.5	13.2	15.1	27.8	0.44	52.4	17.9	16.4	26.8	0.59	51.6	14.8	12.5	24.5	0.5	56.2	22.2	16.8	23.9	0.63
26.08.2021	44.2	15.8	12.7	27.1	0.45	NA	25.7	13.6	27.3	0.42	55.3	16.2	14.3	26.8	0.6	53.4	20.3	15.6	23.2	0.68
30.08.2021	43.7	13.6	17.2	26.5	0.51	NA	30.6	13.8	26.2	0.59	59.2	17.4	16.6	23.1	0.6	50.4	16.8	13.2	21.6	0.61
Permissible Limits	100	60	80	80	2	100	60	80	80	2	100	60	80	80	2	100	60	80	80	2
Date	Location-5					Location-6					Location-7					Location-8				
	JIPT Building					Gorhi village					Regaon village					Nirman Bhavan				
	PM_{10}	$PM_{2.5}$	SO_2	NO_x	CO	PM_{10}	$PM_{2.5}$	SO_2	NO_x	CO	PM_{10}	$PM_{2.5}$	SO_2	NO_x	CO	PM_{10}	$PM_{2.5}$	SO_2	NO_x	CO
Distance (KM) (w.r.t stack)	0.2					4.5					3.0					0.2				
Direction (w.r.t stack)	W					SSW					N					S				
02.08.2021	56.5	17.3	15.3	23.2	0.6	48.5	15.3	14.6	23.2	0.62	42.8	12.3	12.9	23.1	0.4	50.3	15.2	16.1	23.6	0.62
05.08.2021	52.8	16.8	14.6	22.8	0.6	68.3	28.2	16.8	24.4	0.64	46.4	15.5	14.2	23.6	0.4	54.4	18.3	15.3	23.2	0.63
09.08.2021	60.3	20.6	15.7	24.2	0.5	62.3	21.4	16.2	24.2	0.66	42.8	15.9	13.6	23.2	0.5	65.2	22.4	17.2	24.3	0.68
12.08.2021	64.5	21.7	16.2	24.8	0.6	65.5	23.8	16.5	24.8	0.72	52.2	17.4	13.6	23.3	0.4	68.7	25.1	14.9	25.2	0.64
16.08.2021	50.3	15.6	15.8	22.6	0.6	44.3	11.8	12.8	22.8	0.63	30.8	9.6	11.5	22.3	0.4	52.3	17.2	15.7	23.1	0.58
19.08.2021	66.5	23.2	17.2	25.3	0.6	48.6	14.2	13.5	23.6	0.68	38.2	13.3	13.1	23.4	0.4	71.2	27.6	16.8	25.3	0.72
23.08.2021	70.4	26.8	16.3	26.4	0.7	NA	23.2	17.3	23.8	0.67	47.3	16.4	14.2	23.4	0.4	75.3	29.3	18.2	24.8	0.76
26.08.2021	65.3	25.3	14.5	24.1	0.6	NA	22.4	13.8	23.3	0.65	38.2	11.6	12.3	22.4	0.4	68.5	26.1	16.4	24.7	0.69
30.08.2021	68.4	24.4	13.6	24.3	0.7	NA	16.8	14.3	22.9	0.62	32.6	12.6	11.9	22.6	0.4	72.5	28.5	17.3	23.9	0.66
Permissible Limits	100	60	80	80	2	100	60	80	80	2	100	60	80	80	2	100	60	80	80	2

Note: All Units in $\mu g/m^3$ except CO (in mg/m^3)

Jindal Power Limited, Tamnar

Annexure-V (f)

AMBIENT AIR QUALITY MONITORING DATA FOR THE MONTH OF SEPTEMBER, 2021

Date	Location-1					Location-2					Location-3					Location-4				
	New Switch Yard					Near Hostel 5					Savitrinagar Colony (Tehlirampur village)					Tamnar village				
	PM_{10}	$PM_{2.5}$	SO_2	NO_x	CO	PM_{10}	$PM_{2.5}$	SO_2	NO_x	CO	PM_{10}	$PM_{2.5}$	SO_2	NO_x	CO	PM_{10}	$PM_{2.5}$	SO_2	NO_x	CO
Distance (KM) (w.r.t stack)	0.2					0.5					5.0					3.0				
Direction (w.r.t stack)	NW					ESE					ENE					S				
02.09.2021	49.1	15.4	15.3	23.3	0.55	57.2	23.8	15.8	26.3	0.42	45.3	22.3	15.4	22.8	0.85	58.6	24.6	17.3	22.6	0.65
06.09.2021	55.8	20.4	15.8	NA	0.43	61.2	22.8	19.1	25.8	0.52	63.6	19.8	14.3	23.4	0.65	60.2	25.3	16.5	23.7	0.69
09.09.2021	48.5	25.1	18.3	29.2	0.49	68.4	27.3	17.1	28.2	0.64	56.3	19.1	16.9	28.9	0.33	62.8	21.3	16.5	23.2	0.63
13.09.2021	43.2	9.6	16.6	26.3	0.47	41.3	16.4	13.2	29.4	0.62	52.5	16.5	12.2	24.5	0.67	NA	NA	NA	NA	NA
16.09.2021	39.2	12.3	13.5	24.2	0.44	44.4	21.7	13.1	24.9	0.69	43.6	14.9	15.6	24.4	0.59	45.6	15.3	13.2	23.5	0.69
20.09.2021	35.6	14.4	13.6	27.8	0.47	52.5	24.7	14.3	25.3	0.75	46.4	16.3	12.1	26.3	0.67	45.6	15.6	13.2	23.5	0.66
23.09.2021	37.5	18.8	15.1	25.1	0.52	55.7	20.2	14.6	25.5	0.66	49.5	17.6	16.1	24.3	0.38	52.2	18.6	16.2	24.7	0.68
27.09.2021	34.9	17.4	14	26.5	0.49	52.6	18.3	11.6	24.7	0.62	52.9	16.3	12.7	24.2	0.53	52.6	16.8	14.7	24.6	0.65
30.09.2021	46.6	17.3	13.5	25.2	0.48	60.2	26.4	19.8	26.5	0.57	55.1	16.4	15.3	24.6	0.55	56.2	21.2	15.7	23.5	0.67
Permissible Limits	100	60	80	80	2	100	60	80	80	2	100	60	80	80	2	100	60	80	80	2
Date	Location-5					Location-6					Location-7					Location-8				
	JIPT Building					Gorhi village					Regaon village					Nirman Bhavan				
	PM_{10}	$PM_{2.5}$	SO_2	NO_x	CO	PM_{10}	$PM_{2.5}$	SO_2	NO_x	CO	PM_{10}	$PM_{2.5}$	SO_2	NO_x	CO	PM_{10}	$PM_{2.5}$	SO_2	NO_x	CO
Distance (KM) (w.r.t stack)	0.2					4.5					3.0					0.2				
Direction (w.r.t stack)	W					SSW					N					S				
02.09.2021	56.5	16.5	15.6	23.2	0.48	NA	NA	NA	NA	NA	42.6	13.2	14.8	22.7	0.46	59	18.3	16.3	23.6	0.63
06.09.2021	62.4	18.7	17.4	23.8	0.58	NA	NA	NA	NA	NA	50.5	16.4	16.4	23.1	0.45	64	19.5	15.8	24.3	0.58
09.09.2021	58.9	17.6	16.2	23.4	0.63	62.8	21.5	16.3	22.8	0.64	41.2	14.8	13.1	23.5	0.46	56	16.8	14.7	23.1	0.64
13.09.2021	50.3	15.7	14.8	22.9	0.54	43.4	13.8	13.2	22.9	0.67	36.4	8.6	11.1	22.3	0.38	52	16.2	13.9	22.6	0.61
16.09.2021	64.8	19.5	16.5	23.5	0.57	42.3	13.5	13.8	23.2	0.69	36.2	10.5	10.8	22.3	0.42	66	19.6	17.2	24.2	0.59
20.09.2021	68.2	20.6	15.2	24.2	0.65	52.3	17.8	15.6	23.8	0.66	40.6	13.7	12.9	23.6	0.44	70	21.5	17.6	23.8	0.68
23.09.2021	72.3	22.4	14.5	24.6	0.52	56.4	20.1	16.7	24.8	0.67	40.5	14.6	13.8	23.1	0.41	75	23.2	18.2	25.6	0.72
27.09.2021	76.5	23.2	13.2	23.8	0.68	60.5	21.6	16.8	22.5	0.68	46.5	15.7	13.9	21.4	0.46	73	22.7	17.3	24.2	0.69
30.09.2021	70.4	21.9	12.3	23.1	0.56	61.2	20.6	15.9	23.8	0.65	43.8	14.5	13.1	23.6	0.42	68	20.6	16.1	23.5	0.64
Permissible Limits	100	60	80	80	2	100	60	80	80	2	100	60	80	80	2	100	60	80	80	2

Note: All Units in $\mu g/m^3$ except CO (in mg/m^3)