

## JAYPEE NIGRIE SUPER THERMAL POWER PLANT

A DIVISION OF JAIPRAKASH POWER VENTURES LIMITED

ISO CERTIFIED : 9001:2015, 14001:2015 & 45001:2018



QUALITY



ENVIRONMENT



HEALTH & SAFETY

**JAIPRAKASH**  
POWER VENTURES LIMITED

JNSTPP/ EC/ MoEF/ 2021-22/24

18<sup>th</sup> May, 2022

To

**Additional Principal Chief Conservator of Forests (C),**  
Ministry of Env., Forest and Climate Change, Regional Office (WZ), E-5,  
Kendriya Paryavaran Bhawan, E-5 Arera Colony, Link Road-3,  
Ravishankar Nagar, Bhopal - 462016

**Sub:** Submission of Half Yearly Environmental Clearance Compliance Report of Jaypee Nigrie Super Thermal Power Plant (A Division of Jaiprakash Power Ventures Limited) , 2x660 MW Coal Based Super Critical Thermal Power Plant and 4.0 MTPA Cement Grinding Unit at Village Nigrie, Tehsil Sarai, Dist. Singrauli in Madhya Pradesh.

Sir,

With reference to the above mentioned subject we are submitting the compliance report to stipulated conditions of E.C. in hard and soft copy for the period (Oct, 2021 – March, 2022) of Jaypee Nigrie Super Thermal Power Plant, EC reference nos.: J-13012/223/2007-IA-II (T) dated 25.02.2010 and its amendment dated 13.07.2012 for the JNSTPP (2x660 MW) & JNCGU (4.0 MTPA) for your kind records please.

Thanking You

Yours Faithfully

**For Jaypee Nigrie Super Thermal Power Plant**  
(A Division of Jaiprakash Power Ventures Ltd.)

**Vinod Sharma**  
Sr. President (O & M)

Encl. – As above

CC to:

1. **The Regional Directorate (Central),** Central Pollution Control Board, 3<sup>rd</sup> Floor, Sahkar Bhawan, North T.T Nagar, Bhopal- 462003
2. **The Chairman,** Madhya Pradesh State Pollution Control Board, Paryavaran Parisar, E-5 Area Colony, Bhopal – 462016, Madhya Pradesh
3. **Regional office - MP Pollution control board,** Bhakuar, Naugarh, Singrauli – 486 887 (M.P.)

**Site** : Jaypee Nigrie Super Thermal Power Plant, Village & P.O.-Nigrie, Tehsil-Sarai, Distt.-Singrauli (M.P.)  
Ph: +91 (7801) 286021 - 36, Fax: +91 (7801) 286020, Email: jpthermal.sidhi@jalindia.co.in  
**Corp. Office** : 'JA House', 63 Basant Lok, Vasant Vihar, New Delhi - 110 057 (India)  
Ph: +91 (11) 49828679, 49828642, Fax: +91 (11) 26145389  
**Regd. Office** : Complex of Jaypee Nigrie Super Thermal Power Plant, Nigrie Tehsil - Sarai, Distt. - Singrauli - 486669 (Madhya Pradesh)  
Ph: +91 (7801) 286021 - 39, Fax: +91 (7801) 286020  
**Website**: www.jppowerventures.com **CIN**: L40101MP1994PLC042920

**Half - Yearly Compliance Report  
Of  
Environmental Clearance  
Period: October, 2021–March, 2022**

**Of**

**M/s Jaiprakash Power Ventures Ltd.**

**2x660 MW Jaypee Nigrie Super Thermal Power Plant  
&  
2.0 MTPA (Installed) Jaypee Nigrie Cement Grinding Unit  
At  
(V) Nigrie, (T) Sarai, (D) Singrauli, Madhya Pradesh**

**Submitted To:**

**Regional Office, Western Zone  
Ministry Of Environment, Forest & Climate Change  
&  
Zonal Office, Central Pollution Control Board, Bhopal  
&  
Madhya Pradesh Pollution Control Board, Bhopal**



**JAIPRAKASH POWER VENTURES LIMITED**  
**1320 MW (2x660 MW) Coal based Thermal Power Plant**

**24<sup>th</sup> Half Yearly Environmental Clearance Compliance statement of the stipulation of MoEF**

EC Letter No.: J-13012/223/2007-IA.II(T) dated 25.02.2010 and

Subsequent amendment in Environmental Clearance vide

Letter No. J-13012/223/2007-IA.II (T) Dated 13.07.2012

Clause No.	Terms and Conditions Description as per EC letter	Compliance Status report
i.	Environmental Clearance is subject to submission of complete details of R & R action plan (as applicable) with time schedule for implementation to the Regional Office of the Ministry and the Competent Authority in the state govt. The details shall include name of head of family wise details, the area of homestead land and other land to be acquired and the compensation paid/proposed to be paid etc. The time schedule of implementation shall be given.	<p>Our R&amp;R plan has been submitted to the Regional Office of the Ministry vide our letter No. JPVL/JNSTPP/MOEF/2010 on dated 20<sup>th</sup> January, 2011.</p> <p>It was subsequently modified incorporating suggestions of MoEF and was further resubmitted vide letter no. - JPVL/JNSTPP/MOEF/2011 dated 29.06.2011.</p>
ii.	Hydro-geological study of the area shall be <b>reviewed annually</b> and results submitted to the Ministry and concerned agency in the State Govt. In case adverse impact on ground water quantity & quality is observed, immediate mitigating steps to contain any adverse impact on ground water shall be undertaken.	<p>Hydrogeological study of the plant and its buffer zone (10 km radius area) is being carried out every year by an independent agency M/s Hydro-geosurvey Consultants Pvt. Ltd, Jodhpur (Rajasthan), a National Accreditation Board for Education and Training (NABET) Accredited &amp; Quality Council of India (QCI) Accredited agency and reports are being submitted to concerned departments timely.</p> <p>The last study report was submitted in July, 2021 for the year 2020-2021.</p> <p>Water level check from existing Piezometer wells are being regularly carried out on monthly basis.</p> <p>Periodic review is being done. Quality of ground water is being monitored in and around the plant premises. Ground water level in nearby villages is also being monitored to know the seasonal fluctuations.</p> <p>There is no adverse impact found in the quality &amp; quantity of Ground Water.</p>
iii.	Minimum required environmental flow suggested by the competent authority of the State Govt. shall be maintained in the Channel/Rivers even in lean season. It shall be ensured that natural drainage in the region is not disturbed due to activities associated with operation of the plant.	<p>Being Complied, <b>The Water Resource Department and Government of Madhya Pradesh</b> has permitted JPVL to draw 42 MCM of water from Gopad River for Jaypee Nigrie Super Thermal Power Plant.</p> <p>The Minimum recommended discharge is being released in the River during lean period (i.e. from January to May).</p> <p>The lean flow of Gopad river and its tributaries could not be</p>

*[Signature]*

		<p>measured in the last week of May, 2021 as the personnel's of independent agency M/s Hydro-geosurvey Consultants Pvt. Ltd, Jodhpur (Rajasthan) could not visit the area due to massive outbreak of pandemic Covid-19 i.e. effective from 26<sup>th</sup> March, 2021.</p> <p>Further we would like to bring in notice that the lean flow study for the period 2021-2022 will be carried out by the independent agency M/s Hydro-geosurvey Consultants Pvt. Ltd, Jodhpur (Rajasthan) in last week of May, 2022 and reports of the same will be submitted to the concerned department.</p> <p>On the basis of last 8 years Hydro geological studies, it shows that the River flow in the month of June ranges from minimum 1.798 cumecs (m<sup>3</sup>/sec) to maximum 2.97 cumecs (m<sup>3</sup>/sec), which is substantially more than the 0.50 cumecs (m<sup>3</sup>/sec) i.e. minimum flow recommended by Water resources department.</p> <p>Natural Drainage in the region is not being disturbed due to the activities associated with the operation of the plant.</p>
iv.	A stack of 275 m height (Bi-flue) shall be provided with continuous online monitoring equipments for SO <sub>x</sub> , NO <sub>x</sub> and PM. Exit velocity of flue gases shall not be less than 25m/sec. Mercury emissions from stack shall also be monitored on periodic basis.	<p>Bi-flue Stack of 275 m height is installed with Continuous Online Stack monitoring equipment's for parameters PM, SO<sub>2</sub>, NO<sub>x</sub> &amp; Hg.</p> <p>The exit velocity of flue gases is more than 25.0m/sec as stipulated.</p> <p>Mercury measurement is also being done through installed online analyzers.</p>
v.	For cement Grinding Unit two stacks of 55 m each with exit velocity not less than 10 m/s shall be installed. Emission from the Grinding Unit shall not exceed 50 mg/Nm <sup>3</sup> .	<p><b><u>Cement Grinding Unit</u></b></p> <p>Two stacks of height 55m (each) with exit velocity not less than 10 m/s have been installed with Continuous Online Stack monitoring equipment's for parameter PM.</p> <p>Further 2 nos. of Bag Houses attached to Cement Mills (Roll Press &amp; Ball Mill) having respectively 1188 &amp; 780 bags with guaranteed emission level less than 30 mg/Nm<sup>3</sup> at full load.</p>
vi.	Fugitive emission in the Grinding Unit shall be controlled and data on fugitive emission shall be maintained in a log book and duly signed by the Head, Environment on a daily basis.	To control fugitive emissions all raw material conveying belts are covered. Cyclones followed by bag filters are provided at all transfer points. Additionally, mobile water sprinklers are deployed in Cement Grinding Unit area to suppress fugitive dust generated due to movement of vehicles on haulage roads.
vii.	High Efficiency Electrostatic Precipitators (ESPs) shall be installed to ensure that particulate emission does not exceed 50 mg/Nm <sup>3</sup> .	<p>Highly efficient BHEL make Electro Static Precipitators (ESPs) with efficiency of 99.95% have been installed for each boiler to meet particulate emission less than 50 mg/Nm<sup>3</sup>.</p> <p>Online Continuous Emission Monitoring System is installed to Monitor Emissions for both stacks (Unit 1 &amp; Unit 2) and data is being regularly transmitted to MPPCB &amp; CPCB servers on real time basis and the results are</p>

		<p>within the prescribed norms.</p> <p><b>For stack (Unit-I):</b> Average concentration of PM is 42.83 mg/Nm<sup>3</sup>, maximum concentration is 47.06 mg/Nm<sup>3</sup>&amp; the minimum concentration is 35.33 mg/Nm<sup>3</sup> during October, 2021 – March, 2022.</p> <p><b>For stack (Unit-II):</b> Average concentration of PM is 43.39 mg/Nm<sup>3</sup>, maximum concentration is 48.86 mg/Nm<sup>3</sup>&amp; the minimum concentration is 37.23 mg/Nm<sup>3</sup> during October, 2021 – March, 2022.</p>
<b>viii.</b>	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.	<p>Adequate Air Pollution Control measures such as Dust Extraction System (Cyclone followed by Bag Filters) are installed in coal crusher house and coal transfer points.</p> <p>Jet Sprinkler type Dust Suppression System in coal yard and Dry Fog type Dust Suppression System in belt conveyors have been provided.</p> <p><b><u>Arrangement for Dust Suppression</u></b></p> <p>A) Two number of Dust Extraction Systems in Crusher House are Bag house type with Capacity 46,000 m<sup>3</sup>, 1 number of Bag house for each Bunker (Unit 1 &amp; 2) with Capacity 41,000 m<sup>3</sup>.</p> <p>B) Dust Suppression systems are installed in Track Hopper and all 4 Paddle Feeders, for rake unloading at track hopper. Dust Suppression systems are also installed in Emergency reclaiming hopper.</p> <p>C) Jet Sprinkler type Dust Suppression System is installed in Coal Yard area for Bucket wheel stacker cum reclaimer.</p> <p>D) Dry Fog Dust Suppression system installed at all transfer points.</p> <p>E) Elaborate dust extraction &amp; dust suppression system have been incorporated in the design of ash handling plant.</p> <p>❖ One number of Dust extractions systems in Intermediate Silo is Bag Filter type in each unit, one number of bag filter for each Coarse Ash Surge Hopper (Unit 1 &amp; 2) and two bag filters at Main Fly Ash Silo have been installed.</p>
<b>ix.</b>	Utilization of 100 % Fly ash generated shall be made from 4th year of operation of the plant. Status of implementation shall be reported to the regional Office of the Ministry from time to time.	<p>89.55 % of Fly Ash has been utilized during Financial year April, 2021 to March, 2022 as per MoEF&amp; CC Notification No. 763 (E) dated September 14, 1999 and its subsequent amendments for utilization of flyash.</p> <p>Status of Implementation is being reported to Authorized Regulatory Boards on regular basis.</p> <p>Fly Ash utilized during October, 2021 to March, 2022 is 120.67%.</p>
<b>x.</b>	Fly Ash shall be collected in dry form and storage facility (silos) shall be provided. 100% fly ash utilization shall be ensured	<p>Complied with.</p> <p>We have established 2 Intermediate silos to collect dry fly ash with each capacity of 450 MT &amp; a fly ash bin of 400</p>

	<p>from 4<sup>th</sup> year onwards. 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.</p>	<p>MT capacity for utilization of dry ash in cement grinding unit and a storage silo of 20,000 MT capacity for utilization of dry ash.</p> <p>89.55 % of Fly Ash has been utilized during Financial year April, 2021 to March, 2022 as per MoEF, New Delhi Notification No. 763 (E) dated September 14, 1999 and its subsequent amendments regarding fly ash utilization.</p> <p>Bottom ash is being disposed off in the ash pond in lean slurry disposal mode with ash to water ratio typical 1:2.8 with 100% recirculation of ash water.</p> <p>Regular monitoring of heavy metals is being carried out on Six monthly basis.</p>
<b>xi.</b>	<p>Ash pond shall be lined with HDP/LDP lining or any other suitable impermeable media such that no leachate takes place at any point of time. Adequate safety measures shall also be implemented to protect the ash dyke from getting breached.</p>	<p>Design of Ash Pond has been done by M/s Development Consultants Pvt. Ltd. (DCPL) a renowned designing agency. M/s DCPL ash pond drawing has been submitted to MPPCB vide letter no. JPVL/COORD/ POLL/2013-14 dated January 21<sup>st</sup>, 2014. The drawing No. is K6A24-DWG-C-595 Rev. 4.</p> <p>The Ash Dyke has been constructed with upstream &amp; downstream slopes (1V:2H). Ash Dyke has been constructed with HDPE lining on inner side and over that PCC (75mm) layer has been provided to protect it and eliminates any possibility of breach of embankment.</p> <p>Ash Pond is built over an area of 21.20 ha and is consisting of two ponds &amp; equipped with 100% Ash water recirculation facility to prevent any ash mixed water discharge to outside. The Ash Dyke is situated within intact boundary wall of Power Plant.</p>
<b>xii.</b>	<p>For disposal of Bottom Ash (if proposed to be undertaken) in abandoned mines it shall be ensured that the bottom and sides of the mined out areas are adequately lined with clay before Bottom Ash is filled up. The project proponent shall inform the state Pollution Control Board well in advance before undertaking the activity.</p>	<p>Not applicable, as presently bottom ash is not disposed in any abandoned mines.</p>
<b>xiii.</b>	<p>Closed Cycle Cooling System with natural draft cooling towers shall be provided. The Effluents shall be treated as per the prescribed norms.</p>	<p>Recirculation type Closed Cycle Cooling Water System with Natural Draft Cooling Towers has been provided. The CT blow down is being treated adequately to meet the prescribed norms through High Rate Solid Contact Clarifier (HRSCC), Dual Media Filter (DMF), Ultra Filtration Unit (UF) and Reverse Osmosis (RO) system and reused in Cooling Tower Makeup, Service Water and HVAC system. The RO reject water is used for Dust Suppression in Coal Handling Plant Areas.</p>

		<div>TREATED EFFLUENT ANALYSIS(RO PERMEATE) For the period of October, 2021 – March, 2022</div> <table><tr><th>Month</th><th>pH</th><th>SS (ppm)</th><th>TDS (ppm)</th><th>COD (ppm)</th><th>BOD (ppm)</th><th>O&amp;G (ppm)</th><th>Chlorides (ppm)</th></tr><tr><td>Oct-21</td><td>7.62</td><td>NIL</td><td>11.0</td><td>4.04</td><td>NIL</td><td>NIL</td><td>2.81</td></tr><tr><td>Nov-21</td><td>7.83</td><td>NIL</td><td>12.9</td><td>4.10</td><td>NIL</td><td>NIL</td><td>2.45</td></tr><tr><td>Dec-21</td><td>7.69</td><td>NIL</td><td>13.6</td><td>3.80</td><td>NIL</td><td>NIL</td><td>3.57</td></tr><tr><td>Jan-22</td><td>7.37</td><td>NIL</td><td>12.4</td><td>3.20</td><td>NIL</td><td>NIL</td><td>3.18</td></tr><tr><td>Feb-22</td><td>7.66</td><td>NIL</td><td>14.2</td><td>4.00</td><td>NIL</td><td>NIL</td><td>3.25</td></tr><tr><td>Mar-22</td><td>7.28</td><td>NIL</td><td>13.6</td><td>8.00</td><td>NIL</td><td>NIL</td><td>4.20</td></tr></table>	Month	pH	SS (ppm)	TDS (ppm)	COD (ppm)	BOD (ppm)	O&G (ppm)	Chlorides (ppm)	Oct-21	7.62	NIL	11.0	4.04	NIL	NIL	2.81	Nov-21	7.83	NIL	12.9	4.10	NIL	NIL	2.45	Dec-21	7.69	NIL	13.6	3.80	NIL	NIL	3.57	Jan-22	7.37	NIL	12.4	3.20	NIL	NIL	3.18	Feb-22	7.66	NIL	14.2	4.00	NIL	NIL	3.25	Mar-22	7.28	NIL	13.6	8.00	NIL	NIL	4.20																												
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xiv.	The treated effluents conforming to the prescribed standards only shall be re-circulated and reused within the plant. There shall be no discharge outside the plant boundary except during monsoon. Arrangements shall be made that effluents and storm water do not get mixed.	<p>All the effluents are being treated adequately in the WWTP. Treated water is being reused within the plant itself. The concept of “Zero Discharge Condition” implemented.</p> <p>No any mixing of storm water occurs as there is a separate drainage network established for storm water.</p> <p>Upstream &amp; Downstream water quality of Gopad River is also being monitored.</p>																																																																																				
xv.	A sewage treatment plant shall be provided and the treated sewage shall be used for raising greenbelt/ plantation.	<p>Sewage Treatment Plants have been installed of capacity 1000 KLD and 100 KLD. Treated water reused suitably within the plant premises for green belt development purposes.</p> <div>TREATED SEWAGE WATER ANALYSIS (1000 KLD STP in Township Area) For the period of Oct, 2021 – March, 2022</div> <table><tr><th>Month</th><th>pH</th><th>SS (ppm)</th><th>BOD (ppm)</th><th>COD (ppm)</th><th>O &amp; G (ppm)</th></tr><tr><td>Oct-21</td><td>7.42</td><td>11.3</td><td>12.7</td><td>105.1</td><td>1.70</td></tr><tr><td>Nov-21</td><td>7.37</td><td>14.0</td><td>17.0</td><td>92.1</td><td>2.30</td></tr><tr><td>Dec-21</td><td>7.48</td><td>16.0</td><td>14.0</td><td>80.0</td><td>2.10</td></tr><tr><td>Jan-22</td><td>7.54</td><td>13.0</td><td>11.0</td><td>72.6</td><td>1.90</td></tr><tr><td>Feb-22</td><td>7.01</td><td>19.0</td><td>14.0</td><td>94.1</td><td>2.20</td></tr><tr><td>Mar-22</td><td>7.34</td><td>15.0</td><td>18.0</td><td>120.0</td><td>2.00</td></tr></table> <div>TREATED SEWAGE WATER ANALYSIS (100 KLD STP in Plant Area) For the period of Oct, 2021 – March, 2022</div> <table><tr><th>Month</th><th>pH</th><th>SS (ppm)</th><th>BOD (ppm)</th><th>COD (ppm)</th><th>O &amp; G (ppm)</th></tr><tr><td>Oct-21</td><td>7.19</td><td>8.2</td><td>5.2</td><td>32.3</td><td>1.42</td></tr><tr><td>Nov-21</td><td>7.16</td><td>7.0</td><td>6.0</td><td>40.9</td><td>1.30</td></tr><tr><td>Dec-21</td><td>7.25</td><td>12.0</td><td>6.8</td><td>58.6</td><td>1.47</td></tr><tr><td>Jan-22</td><td>7.33</td><td>17.0</td><td>7.8</td><td>52.4</td><td>1.20</td></tr><tr><td>Feb-22</td><td>6.84</td><td>8.0</td><td>3.0</td><td>47.2</td><td>1.30</td></tr><tr><td>Mar-22</td><td>7.49</td><td>11.0</td><td>9.0</td><td>65.1</td><td>1.80</td></tr></table>	Month	pH	SS (ppm)	BOD (ppm)	COD (ppm)	O & G (ppm)	Oct-21	7.42	11.3	12.7	105.1	1.70	Nov-21	7.37	14.0	17.0	92.1	2.30	Dec-21	7.48	16.0	14.0	80.0	2.10	Jan-22	7.54	13.0	11.0	72.6	1.90	Feb-22	7.01	19.0	14.0	94.1	2.20	Mar-22	7.34	15.0	18.0	120.0	2.00	Month	pH	SS (ppm)	BOD (ppm)	COD (ppm)	O & G (ppm)	Oct-21	7.19	8.2	5.2	32.3	1.42	Nov-21	7.16	7.0	6.0	40.9	1.30	Dec-21	7.25	12.0	6.8	58.6	1.47	Jan-22	7.33	17.0	7.8	52.4	1.20	Feb-22	6.84	8.0	3.0	47.2	1.30	Mar-22	7.49	11.0	9.0	65.1	1.80
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xvi.	Rainwater harvesting should be adopted. Central Groundwater Authority/Board	Rain Water Harvesting scheme has been prepared & submitted to obtain approval of the technology from																																																																																				

	shall be consulted for finalization of appropriate rainwater harvesting technology within a <b>period of three months</b> from the date of clearance and details shall be furnished.	Regional Director, Central Ground Water Board, Bhopal and submitted the same to the MoEF along with the EC Compliance Report of June, 2013.  Rain water harvesting pit within the township area has been constructed to augment the ground water table and to recharge surface water during monsoon season.
<b>xvii.</b>	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 lay out shall be submitted to the Ministry as well as to the Regional Office of the Ministry.	Fire-fighting team along with requisite equipment's is available at site & same also supporting the requirements of the neighboring villages to take preventive control measures  along with adequate safety measures.  Mock drills are being conducted periodically.  Fire hydrant and water jet type sprinklers established in the coal yard.  Reviewed On Site Emergency Plan of Jaypee Nigrie Super Thermal Power Plant was Submitted to The Director, Industrial Health & Safety, Indore vide OSEP No.RE01122011507294 and approval of the same was granted on dated 06.01.2021 having validity up to 05/01/2023.
<b>xviii.</b>	Storage facilities for auxiliary liquid fuel such as LDO and HFO/LSHS shall be made in the plant area in consultation with the Department of Explosives, Nagpur. Sulphur content in the liquid fuel will not exceed 0.5%. Disaster Management Plan shall be prepared to meet any eventuality in case of an accident taking place due to storage of oil.	The design of the plant meets the requirements. Storage facilities for auxiliary liquid fuel are made in the plant area and license obtained from Department of Explosives, Nagpur/ Bhopal.  Validity of license No. P/HQ/MP/15/2876(P311713) from Deputy Chief Controller of Explosives, Bhopal for Petroleum Class C (LDO & HFO) in bulk installation was obtained on dated 04/12/2017 having validity up to 31 <sup>st</sup> December 2022.  Onsite Emergency Plan (Disaster Management Plan) has been approved by Director, Industrial Health and Safety, M.P., vide. OSEP NO: RE01122011507294, Indore Dated: 05/01/2023. This plan covers all type of emergency including storage of oil.
<b>xix.</b>	Regular monitoring of ground water level shall be carried out by establishing a network of existing wells and constructing new piezometers.  Monitoring around the ash pond area shall be carried out particularly for heavy metals (Hg, Cr, As, Pb) and records maintained and submitted to the Regional Office of this Ministry. The data so obtained should be compared with the baseline data so as to ensure that the	Regular monitoring of ground water level by establishing a network of 8 no of piezometer wells within plant is being carried out on monthly basis.  Monitoring of ground water (Piezometer wells) for heavy metals (Hg, Cr, As, Pb) is being carried out regularly on six Monthly basis.  Third Party Test Report is annexed as <b>Annexure – I</b> .



	ground water quality is not adversely affected due to the project.	
xx.	Green belt consisting of 3 tiers of plantations of native species around plant and at least 100 m width shall be raised. Wherever 100 m width is not feasible a 50 m width shall be raised and adequate justification shall be submitted to the Ministry. Tree density shall not less than 2500 per ha with survival rate not less than 70%.	<p>Complied with.</p> <ul style="list-style-type: none"> <li>➤ Green belt development/ plantation is being carried out inside the plant premises. An effective green belt is being developed with local species as per CPCB guidelines, Efforts are further made to develop more green belt in the plant. A nursery is also established at site.</li> <li>➤ Required Green belt &amp; Green cover is being developed continuously.</li> <li>➤ Greenbelt is being developed in a phased manner along the periphery of the Power Plant and Grinding Unit.</li> <li>➤ 33% of total area has been developed as Green belt area located in and around plant including cement grinding unit i.e. around 144.21 hectares of green belt has been developed as per the CPCB guidelines.</li> <li>➤ Total number of saplings planted/replanted up to 31<sup>th</sup> March 2022 is approximately 5.235Lacs.</li> </ul>
xxi.	First Aid and sanitation arrangements shall be made for the drivers and other contract workers during construction phase.	<p>First Aid and sanitation facility provided for the drivers and contract workers during construction phase.</p> <p>Site sanitation and housekeeping is maintained regularly.</p> <p>10 bedded Hospital at site is equipped with all required facilities for First Aid.</p>
xxii.	Noise levels emanating from turbines shall be so controlled such that the noise in the work zone shall be limited to 75 dBA. For people working in the high noise area, requisite personal protective equipment like ear plugs/ear muffs etc shall be provided. Workers engaged in noisy area such as turbine area, air compressors etc. shall be periodically examined to maintain audiometric record and for treatment of any hearing loss including shifting to non- noisy /less noisy areas.	<p>Complied, the steam turbines (ST) are enclosed in the building and acoustic enclosures are provided to minimize noise from these machines.</p> <p>All The equipments are provided with acoustic hoods to control noise. The ambient noise levels are well below 75 dBA (during day time) and 70 dBA (night time) as prescribed under EPA rule, 1986.</p> <p>Ambient noise levels in and around the Plant area are monitored monthly. Noise levels are well under the prescribed limit.</p> <p>All safety equipment's like Ear muffs, Ear Plugs are provided to all the workers &amp; employees and made mandatory. Periodic audiometric checkup is being carried out and records are being maintained.</p> <p>Further the Company has obtained IMS - Integrated Management System Certificate covering ISO 9001:2015 (QMS – Quality Management System), ISO 14001:2015 (EMS - Environmental Management Systems) &amp; ISO 45001:2018 (OHSAS - Occupational Health and Safety</p>

		Assessment Series).																																																																														
xxiii.	Regular monitoring of Ground level concentration of SO <sub>2</sub> , NO <sub>x</sub> , RSPM and Hg shall be carried out in the impact zone and records maintained. If at any stage these levels are found to exceed the prescribed limits, necessary control measures shall be provided immediately. The location of the monitoring stations and frequency of monitoring shall be decided in consultation with SPCB. Periodic reports shall be submitted to the Regional Office of this Ministry. The data shall also be put on the website of the company.	<div><div>➤ Baseline monitoring was conducted during EIA study. Weekly monitoring (Manual/ Offline) during operational phase is being carried out regularly.</div><div>➤ Four Continuous Real time Ambient Air Quality Monitoring Stations are provided along the boundary considering the wind rose/wind directions and the real time data of the CAAQMS, CEMS and CEQMS is transmitted to MPPCB server at Bhopal &amp; CPCB server at Delhi and the same is also displayed at the main gate of the company.</div><div>➤ Compliance on EC conditions including results of monitoring data is being submitted to the concerned authority on regular basis and the same also uploaded in company website along with EC Compliance Report.</div><div>➤ Quarterly Environmental Monitoring Reports are also made available on the website of the company.</div><div>➤ Regular monitoring of PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub>, NO<sub>2</sub> and CO is being carried out as per the frequency and monitoring results are well within the prescribed norm.</div><div>➤ Offline Monitoring results are being submitted to MPPCB quarterly.</div></div> <div>AAQMS Results For the period of October, 2021 – March, 2022</div> <table><tr><th colspan="6">LOCATION : Near STP - Colony area</th></tr><tr><th></th><th>PM2.5 (µg/m3)</th><th>PM10 (µg/m3)</th><th>SO<sub>2</sub> (µg/m3)</th><th>NO<sub>2</sub> (µg/m3)</th><th>CO (mg/m3)</th></tr><tr><td>Minimum</td><td>18.2</td><td>40.3</td><td>5.8</td><td>11.2</td><td>0.347</td></tr><tr><td>Maximum</td><td>24.2</td><td>52.2</td><td>6.3</td><td>11.9</td><td>0.395</td></tr><tr><td>Average</td><td>21.6</td><td>45.9</td><td>6.2</td><td>11.6</td><td>0.372</td></tr></table> <table><tr><th colspan="6">LOCATION : Near H2 Gas cylinder shed</th></tr><tr><th></th><th>PM2.5 (µg/m3)</th><th>PM10 (µg/m3)</th><th>SO<sub>2</sub> (µg/m3)</th><th>NO<sub>2</sub> (µg/m3)</th><th>CO (mg/m3)</th></tr><tr><td>Minimum</td><td>23.6</td><td>50.6</td><td>6.7</td><td>12.4</td><td>0.468</td></tr><tr><td>Maximum</td><td>30.2</td><td>61.0</td><td>7.6</td><td>13.2</td><td>0.529</td></tr><tr><td>Average</td><td>26.2</td><td>57.0</td><td>7.2</td><td>12.8</td><td>0.506</td></tr></table> <table><tr><th colspan="6">LOCATION : Near Watch tower 22 (Grinding Unit)</th></tr><tr><th></th><th>PM2.5 (µg/m3)</th><th>PM10 (µg/m3)</th><th>SO<sub>2</sub> (µg/m3)</th><th>NO<sub>2</sub> (µg/m3)</th><th>CO (mg/m3)</th></tr><tr><td>Minimum</td><td>22.6</td><td>48.2</td><td>5.8</td><td>12.2</td><td>0.409</td></tr></table>	LOCATION : Near STP - Colony area							PM2.5 (µg/m3)	PM10 (µg/m3)	SO <sub>2</sub> (µg/m3)	NO <sub>2</sub> (µg/m3)	CO (mg/m3)	Minimum	18.2	40.3	5.8	11.2	0.347	Maximum	24.2	52.2	6.3	11.9	0.395	Average	21.6	45.9	6.2	11.6	0.372	LOCATION : Near H2 Gas cylinder shed							PM2.5 (µg/m3)	PM10 (µg/m3)	SO <sub>2</sub> (µg/m3)	NO <sub>2</sub> (µg/m3)	CO (mg/m3)	Minimum	23.6	50.6	6.7	12.4	0.468	Maximum	30.2	61.0	7.6	13.2	0.529	Average	26.2	57.0	7.2	12.8	0.506	LOCATION : Near Watch tower 22 (Grinding Unit)							PM2.5 (µg/m3)	PM10 (µg/m3)	SO <sub>2</sub> (µg/m3)	NO <sub>2</sub> (µg/m3)	CO (mg/m3)	Minimum	22.6	48.2	5.8	12.2	0.409
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xxiv.	A good action plan for R & R (if applicable) with package for the project affected persons be submitted and implemented as per prevalent R & R policy <b>within three months</b> from the date of issue of this letter.	<p>The report has been submitted to MoEF&amp; CC on 20<sup>th</sup> Jan 2011 vide our letter No. JPVL/JNSTPP/MoEF/2010.</p> <p>It was subsequently modified incorporating suggestions of MOEF and was resubmitted vide letter no. - JPVL/JNSTPP/MoEF/2011 dated 29.06.2011.</p>																																										
xxv.	An amount of Rs. 24.0 crores shall be earmarked as one time capital cost for CSR programme. Subsequently a recurring expenditure of Rs. 4.8 Crore per annum shall be earmarked as recurring expenditure for CSR activities. Details of the activities to be undertaken shall be <b>submitted within one month</b> along with road map for implementation.	<ul style="list-style-type: none"><li>➤ A Separate budget earmarked for CSR activities. CSR study report already submitted to the Ministry vide letter no. - JPVL/JNSTPP/ MOEF/2010 dated 20.01.2011 and 29.06.2011.</li><li>➤ For CSR activities capital outlay of more than Rs. 24.00 crores has been made.</li><li>➤ The company is carrying out CSR activities in the vicinity of the Project as per the directions and guidance of the District Administration.</li><li>➤ Unit is also investing on CSR Activities on Rural Development Projects like Plantation programs (Nigrie, Niwas, and Chamrach), Road development activities in villages Nigrie, Hardi-Papal road, Women empowerment &amp; providing furniture/building material to Police Department, Nigrie, Development of Toilets for students at Anganwadi Centre, Niwas &amp; Girls School, Niwas, Construction of Kitchen shed at Viklang Vidyalaya, Village Katai.</li><li>➤ Promotion of Safety/Cultural/sports activities in nearby Rural Areas/villages (Nigrie, Niwas &amp; Katai), Providing water via water tankers to the nearby villagers as per requirement, Development of water pass structure &amp; repairing of pond located in village Niwas &amp; Contribution of Diasaster Management and Promoting Education through Sardar Patel School under Jaiprakash Sewa Sansthan &amp; Jay Jyoti School</li></ul>																																										

		<p>under Jaiprakash Sewa Sansthan &amp; Gopad Viklang Sikasha Vikas Samiti, Village-Katai.</p> <p>➤ Total expenditure incurred up to March, 2022 is Rs 5.627 Crores.</p>
xxvi.	<p>As part of CSR programme the company shall conduct need based assessment for the nearby villages to study economic measures with action plan which can help in up liftment of poor section of society. Income generating projects consistent with the traditional skills of the people besides development of fodder farm, fruit bearing orchards, vocational training etc. can form a part of such programme. Company shall provide separate budget for community development activities and income generating programmes. This will be in addition to vocational training for individuals imparted to take up self-employment and jobs.</p>	<p>Based on Need Based Assessment Study for development of nearby villages, an action plan was worked out for income generating projects for upliftment of poor section of society.</p> <p><b>The following activities were undertaken:</b></p> <ul style="list-style-type: none"> <li>➤ Sardar Patel Uchhtar Madhyamik Vidyalaya was started up to class V<sup>th</sup> w.e.f. July, 2011 and subsequently upgraded up to 10<sup>th</sup> class in July, 2016 session.</li> <li>➤ Free Education &amp; Free Mid Day Meals provided to the children of affected village Nigrie &amp; Sardar patel School, Nigrie.</li> <li>➤ Free Health Check Up &amp; Health cards provided to the 150 students.</li> <li>➤ Roads have been laid down in nearby Nigrie village &amp; Hardi-Papal road.</li> <li>➤ Free electricity supply is provided to the Street Lights in R &amp; R Colony.</li> <li>➤ Restoration &amp; Refurbishment of water reservoirs &amp; ponds taken place in nearby villages Niwas.</li> <li>➤ Providing Mobile Hospital &amp; Ambulance Service to affected villages (Nigrie, Niwas, katai &amp; Hardi&amp; MahuaGanv and Chamrach and Joba).</li> <li>➤ A Dispensary was also setup in R &amp; R colony for providing treatment facilities to the nearby residents.</li> <li>➤ Provide financial aid to Gopad Viklang SikashaVikas Samiti, Village-Katai.</li> </ul> <p><b><u>“Transform Singrauli” Project under Indian government and MP Government:-</u></b></p> <ul style="list-style-type: none"> <li>➤ Provided Free Medical Checkup facility, Ambulance facility, Free Medicines in nearby villages (Nigrie, Niwas, Katai &amp; Hardi &amp; Mahua Ganv and Chamrach).</li> <li>➤ Established/Started Kuteer Udyog, Training Centre for Stitching and honey bee keeping.</li> <li>➤ Expenditure incurred on “Trasform Singrauli” in FY 2021 – 22 is Rs 3.00 Lakhs.</li> </ul>
xxvii.	<p>Provision shall be made for the housing of construction labour 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</p>	<p>Labour hutments had been established &amp; developed with all required amenities like toilet, drinking water &amp; infrastructure, medical health care etc.</p>



	be in the form of temporary structures to be removed after the completion of the project.	
<b>xxviii.</b>	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 <a href="http://envfor.nic.in">http://envfor.nic.in</a> .	As mandated, We have informed the public through the local newspaper announcements in vernacular language that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with state pollution control board and may also seen at website of the MoEF at <a href="http://envfor.nic.in">http://envfor.nic.in</a> .
<b>xxix.</b>	A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, ZilaParishad/ Municipal corporation, Urban Local Body and the local NGO, if any from whom suggestions/ representations, if any, received while processing the proposal. The clearance letter shall also be put on the website of the company by the proponent.	Copy of EC accorded has been submitted to local panchayat & Zilaparishad. We have uploaded copy of EC letter in our company website.
<b>xxx.</b>	A separate Environment Management Cell with qualified staff shall be set up for implementation of the stipulated environmental safeguards.	We have formed a separate full-fledged Environment Management Cell headed by Vice President supported by Dy. General Manager, Asst. Manager, Chemists of laboratory & Technician for implementation and compliance.
<b>xxxi.</b>	The proponent shall upload the status of compliance of the stipulated EC conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office MoEF, the respective Zonal Office of CPCB and the SPCB. The criteria pollutant levels namely; SPM, RSPM, SO <sub>2</sub> , NO <sub>x</sub> (ambient levels as well as stack emission) shall be displayed as a convenient location near the main gate of the company in the public domain.	<p>Complied, We are regularly submitting six monthly EC compliance reports to the MOEF &amp; CC Regional Office, CPCB Zonal Office and SPCB.</p> <p>Six monthly compliance reports on EC conditions including results of monitoring data is being uploaded on company's website and we have also made available display in front of the main gate for regular displaying of ambient air quality data as well as stack emissions levels of both the units.</p>
<b>xxxi.</b>	The project proponent shall also submit six monthly reports on the status of compliance of the stipulated EC conditions including results of monitored data (both in hard copies as well by e-mail) to the respective Regional Office of MoEF, the respective Zonal Office of	<p>Complied, six monthly compliance reports are regularly submitted to the Regional Office of MoEF, Zonal Office of CPCB and the SPCB.</p> <p>Last EC compliance report for the period April, 2021 to Sept, 2021 was submitted vide our letter no: <b>JNSTPP/ EC/ MoEF/ 2021-22/23</b> on dated 28<sup>th</sup> October, 2021 and also</p>

	CPCB and the SPCB.	copy of the EC compliance report for the period April, 2021 to Sept, 2021 has been uploaded on the company website.
xxxiii.	The environment statement of each financial year ending 31 <sup>st</sup> 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 status of compliance of EC conditions and shall also be sent to the respective Regional Offices of the Ministry by e-mail.	Compliance assured, Submitted Environmental Statement in Form- V for the Financial year <b>2021 -22</b> to the State Pollution control Board authorities vide letter no. JVPL/EC/ES/ 2021 -22 on dated May 17 <sup>th</sup> , 2022 and the same also uploaded on the company website.
xxxiv.	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 email to the Regional Office, Ministry of Environment and Forests.	Being complied, six monthly Environmental Clearance compliance status report is being regularly submitted to MoEF, CPCB and SPCB. Compliance status updated on Company's website.
xxxv.	Regional Office of the Ministry of Environment & Forests will monitor the implementation of the stipulated conditions. A complete set of documents including Environmental Impact Assessment Report and Environment Management Plan along with the additional information submitted from time to time shall be forwarded to the Regional Office for their use during monitoring. Project proponent will upload the compliance status in their website and update the same from time to time at least six monthly basis. <b>Criteria pollutants levels including NO<sub>x</sub> (from stack &amp; ambient air) shall be displayed at the main gate of the power plant.</b>	Will be complied with, Six monthly Environmental Clearance compliance status report is regularly submitted to MoEF, CPCB and SPCB. <ul style="list-style-type: none"> <li>• Compliance status updated on Company's website.</li> <li>• Display board installed in front of main gate.</li> <li>• Results are being displayed at Main gate of the plant.</li> </ul>

xxvi.	<p>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.</p> <p>The funds earmarked for the environmental protection measures shall not be diverted for other purposes and year-wise expenditure should be reported to the Ministry.</p>	<p>Complied, Dedicated fund has already been allocated and being utilized for Environmental Protection Measures i.e., Low NOx Burners, Constructions of 275m Stack with CEMS, Protection measures from Noise, Effluent Treatment Plant, Sewage Treatment Plant, Green Belt Development have been included in Project Capital Cost. Suppression of Fugitive Emission, Plantation in the periphery of the project area, constant monitoring of the pollution affects within the project area etc. are being undertaken on regular basis.</p> <p><b>Recurring expenditures for the period October, 2021 to March, 2022 is as below:</b></p> <table><tr><td>Green Belt Development</td><td>Rs 25,50,000/-</td></tr><tr><td>Maintenance cost in CHP</td><td>Rs 52,36,270/-</td></tr><tr><td>Operation cost in ESP</td><td>Rs 14,98,20,830/-</td></tr><tr><td>Operation Cost of ETP</td><td>Rs 86,48,400/-</td></tr><tr><td>Operation Cost of STP</td><td>Rs 12,49,007/-</td></tr></table>	Green Belt Development	Rs 25,50,000/-	Maintenance cost in CHP	Rs 52,36,270/-	Operation cost in ESP	Rs 14,98,20,830/-	Operation Cost of ETP	Rs 86,48,400/-	Operation Cost of STP	Rs 12,49,007/-
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xxvii.	<p>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.</p>	<p>Complied, The project has achieved Financial Closure on 07/05/2010.</p> <p>Unit- I was commissioned on 01/09/2014 &amp; information was sent to MPPCB vide letter No. JNSTPP/PCB/2014-15 dated November 3<sup>rd</sup>, 2014.</p> <p>Unit- II was commissioned on 24/03/2015 &amp; information was sent to MPPCB vide letter No. JNSTPP/PCB/2015-16 Dated May 26<sup>th</sup>, 2015.</p> <p>Cement Grinding Unit was commissioned on 09/10/2014 &amp; information was sent to MPPCB vide letter No. JNSTPP/PCB/2015-16 Dated May 28<sup>th</sup>, 2015.</p>										
xxviii.	<p>Full cooperation shall be extended to the Scientists/Officers from the Ministry /Regional Office of the Ministry at Bangalore/CPCB/SPCB who would be monitoring the compliance of environmental status.</p>	<p>Company has been fully cooperating and extending full support to the concerned authorities and will also cooperate in future.</p>										
xxix.	<p>Bag house and dust suppression shall be installed in packing area to control the particulate and fugitive emissions.</p>	<p>2 nos. of Bag Houses are attached to Cement Mills (Roll Press &amp; Ball Mill) with guaranteed emission level of &lt;30 mg/Nm<sup>3</sup> at full load. Each Bag House has 1188 &amp; 780 bags respectively.</p> <p><b><u>To control fugitive emissions following measures have been taken :</u></b></p> <ol style="list-style-type: none"><li>1. All raw material conveying belts are covered.</li><li>2. Cyclones followed by Bag Filters are provided at all transfer points.</li><li>3. Mobile water sprinklers are deployed in Grinding Unit area to suppress fugitive dust while movement of vehicles on haulage roads.</li></ol>										







# Vardan EnviroLab

Laboratory: Plot No. 82A, Sector - 5, IMT Manesar, Gurugram - 122051 (Haryana)  
ISO 9001 | ISO 14001 | ISO 45001

## Test Report

Sample Number:	VEL/JNSTPP/W/01	Report No.:	VEL/WW/2201/25/01
Name & Address of the Party:	M/s Jaypee Nigrie Super Thermal Power Plant (A Division of Jaiparkash Power Ventures Limited) Village & P.O. Nigrie, Tehsil-Sarai, Distt. Singrauli (M.P.)	Format No.:	5.10 F-01
		Party Reference No.:	NIL
		Reporting Date:	27/01/2022
Sample Description:	Heavy Metals	Period of Analysis:	17/01/2022 - 22/01/2022
Sample Collected by:	Vardan Enviro Lab Representative	Receipt Date:	17/01/2022
Preservation:	Refrigerated	Sampling Date:	15/01/2022
Parameter Required:	As Per Client Requirement	Sampling Quantity:	2.0Ltr.
Analysis Protocol:	APHA 22nd Edition 2012	Sampling Type:	--
		Test Method	APHA 22nd Edition 3111B

S. No.	Locations	#Arsenic as As in mg/l	#Mercury as Hg in mg/l	Chromium as Cr in mg/l	Lead as Pb in mg/l
Instrument used for analysis		AAS Thermo Scientific Model No. AA 303	AAS Thermo Scientific Model No. AA 303	AAS Thermo Scientific Model No. AA 303	AAS Thermo Scientific Model No. AA 303
1.	Near NDCT	BDL* (<0.01)	BDL* (<0.001)	BDL* (0.02)	BDL* (<0.01)
2.	Near Crusher	BDL* (<0.01)	BDL* (<0.001)	BDL* (<0.01)	BDL* (<0.01)
3.	Near STP Plant in Colony	BDL* (<0.01)	BDL* (<0.001)	BDL* (<0.01)	BDL* (<0.01)
4.	Near Sardar Patel School	BDL* (<0.01)	BDL* (<0.001)	BDL* (<0.01)	BDL* (<0.01)
5.	Near Reservoir II	BDL* (<0.01)	BDL* (<0.001)	BDL* (0.02)	BDL* (<0.01)
6.	Near Gate No.3	BDL* (<0.01)	BDL* (<0.001)	BDL* (<0.01)	BDL* (<0.01)
7.	Near Awas Gate	BDL* (<0.01)	BDL* (<0.001)	BDL* (<0.01)	BDL* (<0.01)
8.	Near Wagon Tippler	BDL* (0.01)	BDL* (<0.001)	BDL* (0.02)	BDL* (<0.01)
Instrument Detection Limit		0.005 mg/l	0.005 mg/l	0.005 mg/l	0.005 mg/l
Limits of IS 10500:2012					
Requirement (Acceptable Limits)		0.01	0.001	0.05	0.01
Permissible Limit in the Absence of Alternate Source		0.05	No Relaxation	No Relaxation	No Relaxation

# These parameters are not covered under our NABL scope.

\*BDL - Blow Detection Limit

*Subodh*  
(Checked By)



*Appu*  
(Approved By)

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