



# ADHUNIK POWER & NATURAL RESOURCES LTD.

(Formerly Adhunik Thermal Energy Limited)

Office : Village Padampur, Behind PGCIL Substation, Adityapur, Kandra Road, P.O: Kandra  
Saraikela-Kharsawan, Jharkhand-832 402 ☎ PHONE : 0657 6628400 ☎ FAX : 0657 6628440  
Website : www.adhunikgroup.com

Ref No APNRL/JSPCB/ES/2017-18/01

Date: 15th Sep 2018

The Member Secretary  
Jharkhand Pollution Control Board  
Jharkhand

Sub- Submission of Environmental Statement (Form V) for Unit I (1 x 270 MW) of M/s  
Adhunik Power & Natural Resources Limited, Village-Padampur, Dist-Saraikela-  
Kharswan, Jharkhand.

Ref: Environmental Clearance letter No J-13011/8/2009-IA.II(T), Dated 29<sup>th</sup> Aug 2009.

Dear Sir,

In line with compliance of above referred EC letter point No XXX of general condition, Please  
find attached herewith Environmental statement (Form V) for the financial year 2017-18.

This is for your kind information & record please.

Thanking You

Your's faithfully

Rakesh Gupta  
(CEO-Plant Operations)

Encl: As mentioned above

CC: 1. The Regional Office(ECZ)

Ministry of Environment & Forest & Climate Change,  
Bungalow No. A-2, Shyamali Colony, Ranchi-834002

2. The Regional Officer

Jharkhand Pollution Control Board  
Jamshedpur, Jharkhand



Regd. Office : 14, Netaji Subhas Road, II-Floor, Kolkata - 700 001. Phone: 2243-4355, 2242-8551

Works: Padampur, Seraikela, Kharswan, Jharkhand

CIN U40101WB2005PLC102935

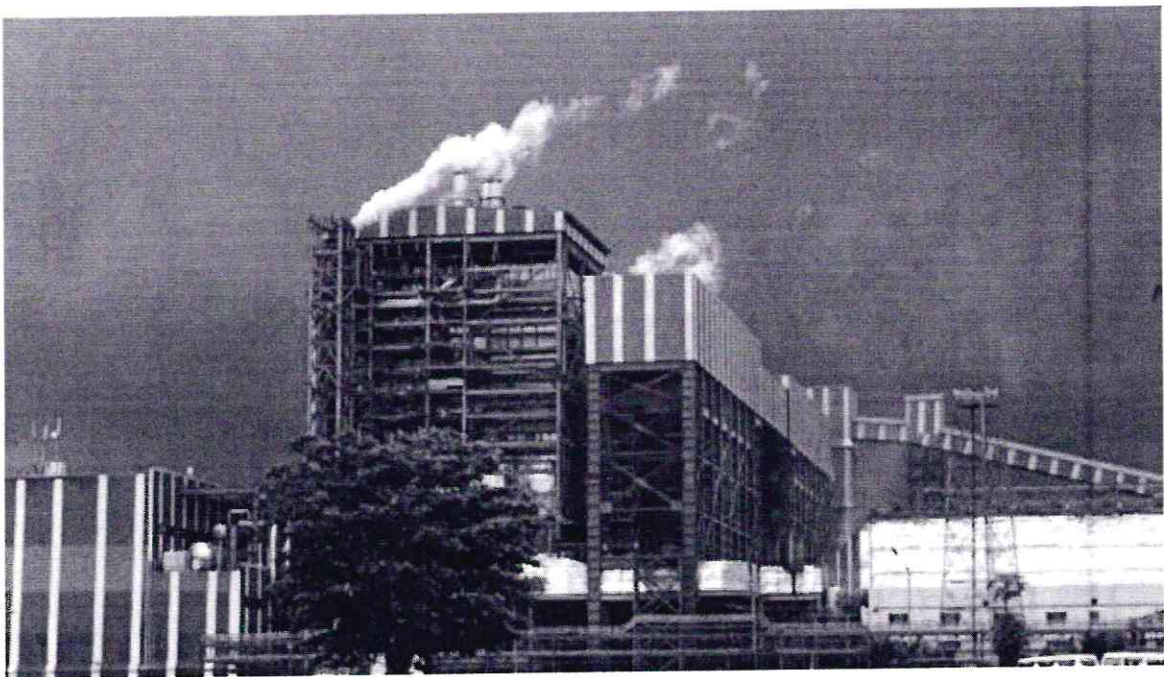
# **ENVIRONMENTAL STATEMENT**

**For**

**1 X 270 MW COAL BASED THERMAL POWER PLANT**

**(UNIT I)**

**FINANCIAL YEAR 2017-18**



**September 2018**



**Adhunik Power & Natural Resources Ltd**  
**Village-Padampur, District-Saraikela-Kharsawan**  
**Jharkhand-832402**

**FORM-V**

**From:**

**Adhunik Power & Natural Resources Limited**

**Village: Padampur**

**Dist: Saraikela-Kharsawan – 832 402**

**Jharkhand.**

**To,**

**Member Secretary**

**Jharkhand State Pollution Control Board,**

**HEC Campus, Dhurva,**

**Ranchi , Jharkhand.**

**Environmental Statement for the financial year ending on the 31st March-2018  
for Unit-I (1 x 270 MW)**

**PART – A**

- |       |   |   |   |
|-------|---|---|---|
| (i)   | Name & Address of the owner/occupier of the Industry operation or process | : | Sh. Mahesh Kumar Agarwal<br>Adhunik Power & Natural Resources Ltd, Vill- Padampur, Adityapur- Kandra Road, Dist- Sariekela- Kharswan, Jharkhand |
| (ii)  | Industry Category<br>Primary – STC Code<br>Secondary – STC Code           | : | Red Category  |
| (iii) | Production Capacity – (Units-MT)  | : | Power(270 MWH)  |
| (iv)  | Year of Establishment<br>(COMMERCIAL PRODUCTION DECLARED)                 | : | January-2013  |
| (v)   | Date of Last Environmental Statement Submitted                            | : | 22 <sup>th</sup> September 2017   |

**PART-B**

**Water and Raw Material Consumption**

**(i) Water Consumption KL/Day**

Process : 602.73  
Cooling : 14465.53  
Domestic : 70.5

Name of product	Process water consumption KL/ MW	
	During the previous financial year	During the current financial year
	2016-17	2017-18
Electricity	0.086	0.097

**(ii) Raw Material Consumption**

Name of Raw Materials	Name of product	Consumption of raw material per MW	
		During the previous financial year 2016-17	During the current financial year 2017-18
Coal	Power	0.6922 MT	0.6698 MT
LDO		0.00076 KL	0.00024 KL

**PART – C**

**Pollution Discharged to environment / unit of output.  
(Parameter as specified in the consent issued)**

<b>Pollutants</b>	<b>Qty. Of pollutants discharged (Mass / Day)</b>	<b>Concentration of Pollutants in discharges (Mass / Day)</b>	<b>Percentage of variation from prescribed standards with reasons</b>
(i) Water  <b>Unit Limit</b> pH 5.5. to 9.0 SS < 100 mg/l Oil & Grease < 10 mg/l BOD <sub>5</sub> < 30 mg/l COD < 250 mg/l	1) Effluent generated from Cooling tower, DM plant, IBD tank, CPI separator is being utilized in Ash Handling system. 2) Effluent generated from CBD is being reutilized in quenching & dust suppression system. 3) Effluent generated from STP is being utilized for gardening		Concentration is below the prescribed limits.  <b>Water Analysis report of ETP outlet enclosed</b>
(ii) Air  SPM  SO <sub>2</sub>  NO <sub>x</sub>		46.27mg/Nm <sup>3</sup>  432.4mg/Nm <sup>3</sup>  209.16 mg/Nm <sup>3</sup>	Concentration are below the prescribed limits  <b>Stack Monitoring report are enclosed.</b>

\*The Effluent Treatment facility for Unit I and Unit II is common.

**PART - D**

**HAZARDOUS WASTES**

**(As specified under Hazardous Wastes Management and Handling  
& Transboundary Movement Rules, 2008)**

Hazardous Wastes	Total Quantity (KL).	
	During the previous financial Year 2016-2017	During the current financial Year 2017-18
1 From Process	Used Oil-2.1163 KL	Used Oil- 7.325 KL
2 From Pollution Control Facilities	Used Oil-0.2651 KL	Used Oil- 1.453 KL

- The APNRL has obtained Hazardous Waste Authorization from JSPCB for Collection & Storage of Hazardous waste.
- Waste / Spent Oil is collected at centrally located point in isolated stores area meant for them in sealed M.S. Drums which is further sent to authorized recycler for disposal as per norms of MoEF.

**PART -E**

**Solid Wastes**

	Total Quantity (MT)	
	During the previous financial Year 2016-2017	During the current financial Year 2017-18
(a) From Process Bottom Ash	79137.5 MT	53430.74 MT
(b) From Pollution Control Facility Fly Ash	735668 MT	495093.78 MT
(c) (1) Quantity recycled or re-utilized within the unit (2) Sold (3) Disposed Fly Ash Bottom Ash	735668 MT 79137.5 MT	495093.78 MT 53430.74 MT

## PART – F

**Please specify the characterization (In terms of composition and quantum) of hazardous as well as solid and indicate disposal practice adopted for both these categories of wastes**

### **Hazardous Waste:**

- 1) **Solid Hazardous Waste:** Bio medical Waste is generated from OHC is being disposed through JSPCB authorized agencies i.e. Bio-Genetic pvt Limited. Waste generated from Canteen is used from preparing bio-compost & it is used for plantation. For the collection of dry fly ash, silos have been provided with pneumatic system & Bottom ash is led to the Ash dyke through pipeline in wet slurry mode.
- 2) **Liquid Hazardous waste:** In this financial year, 7.325 KL (Used Oil) have been generated from process.

## PART - G

**Impact of the pollution abatement measures taken on conservation of natural resources and on the production.**

**The following practices are adopted for the pollution control & conservation of natural resources:**

- Fly ash bricks has been used for construction of buildings, Drains, rain water harvesting pit, Bachelor Hostel, Residential Colony for employees.
- We are using effluent water generated from Cooling tower, DM plant, IBD tank for Ash handling system instead of fresh water from River Subarnarekha.
- Extensive tree plantation is under progress as a part of green belt development, which will control the impact of Air pollution and optimize the ambient temperature of surrounding areas.
- Twin flue stack with height of 275 m are provided as per the CPCB guidelines for better dispersion of emissions and keep the concentrations within JSPCB/CPCB specified standards.
- High efficiency Electrostatic precipitators (ESPs) are provided for control of dust emissions into flue gases.
- Dust suppression system is installed at coal transfer points.
- Dust Extraction system along with bag Filters have been installed at Coal Silo, Coal bunker, Intermediate Silo & Ash Silo to arrest the fugitive emissions.
- Roof sheeting and side cladding in conveyor galleries and TPs are installed to control fugitive dust
- The plant is designed on CoC of more than 5 which is helpful in water conservation which further lead to reduction in overall fresh water intake.
- Rain-gun type water sprinklers are installed in the Coal Stockyards for the control of fugitive emissions.
- Mist canyons are installed at coal transfer houses for the control of fugitive dust.

- Belt washing system, coal settling pits and waste water recovery system are installed at transfer house for the dust suppression and water recovery.
  - Water spraying system is installed in ash pond area for controlling the ash fugitive emissions, if any.
  - Low NOx burners are installed in fuel combustion system for controlling NOx emissions
  - Effluent Treatment Plant (ETP) and Sewage Treatment Plants (STP) are installed to control water pollution.
  - Rain Water harvesting is being practiced in the plant premises, which helps in ground water recharging.
  - Good housekeeping is maintained within the plant premises.
  - Green belt has been developed in & around the plant periphery to control the dispersal of dust particles and attenuate the noise generated during the process.
- Because of the adaptation of aforementioned methods, the quality of emissions and discharges are maintained below the permissible limits prescribed by the MoEF&CC / CPCB / JSPCB.

#### PART - H

#### **Additional measures / investment proposals for environmental protection including abatement of prevention of pollution.**

APNRL is regularly monitoring ambient air, stack, noise level, water quality and soil quality in and around the plant premises. All the emissions and discharges are meeting the permissible limits prescribed by MoEF / CPCB / JSPCB. It is proposed to further strengthen the monitoring and reporting process. Ash Water Recovery System is installed for further reuse of ash water. Green belt development within plant premises is proposed to be accelerated. Details of recurring cost for the implementation of Environmental Management Plan are as follows:

#### **Recurring expenditure for the year 2017-18 is as follows:**

Sl No	Description of Environment Measures	April 2017- March 2018						Total cost (Unit I & Unit II)
		Unit I			Unit II			
		Energy	Other cost	Total Cost	Energy	Other cost	Total Cost	
1	ESP operation & Maintenance	126.54	3.26	129.80	65.94	3.26	69.20	199.00
2	ETP & STP operation & Maintenance	9.62	1.69	11.31	9.62	1.69	11.31	22.62
3	Plant Housekeeping	0.00	91.87	91.87	0.00	91.87	91.87	183.74
4	DE System Operation & Maintenance	8.63	0.94	9.57	14.63	1.96	16.59	26.16
5	DS operation & Maintenance	0.19	2.45	2.64	0.19	1.23	1.42	4.06
6	Green Belt development	0.10	8.00	8.10	0.10	8.00	8.10	16.20
7	Environment Management system(Monitoring, Calibration, Clebration of Programmes & Environment Audit, ESMS report)	0.61	3.26	3.87	0.56	3.26	3.82	7.69
8	Ash disposal system	0.00	880.76	880.76	0.00	880.76	880.76	1761.52
9	Rain water harvesting system	0.00	0.12	0.12	0.00	0.12	0.12	0.24
10	CAAQMS & CEMS Operation & Maintenance	0.23	1.58	1.81	0.23	0.96	1.19	3.00
		145.92	993.93	1139.85	91.27	993.11	1084.38	2224.23

## PART – I

### **Any other particulars for improving the quality of the environment:**

The part – I of any Environmental Statement report is perhaps the best scale to measure various parameters of the plans, target, achievements and ultimate impact. APNRL has made sincere efforts to visualize the general environmental scenario and implemented plan for the associated improvements. Some highlights are mentioned below:

1. Received certification for ISO 9001:2008, ISO 14001: 2004 & ISO 18001:2007 from BSI.
2. Training on EMS to all employees and contract labors to create Environment awareness.
3. Green Belt development is under progress.
4. Only PUC certified vehicles are engaged.
5. Monitoring of Ambient air quality , Surface and ground water quality, stack monitoring, soil, Noise level is being done through MoEF & NABL accredited laboratory.
6. Full-fledged Environmental laboratory has been installed.
7. Installation of Online Effluent monitoring system has been completed.
8. Webhosting of online environment data on CPCB/SPCB website have been completed.
9. Electronics Display board is provided at the main gate for public data display.
10. Audit by site team to improve Environmental Management system (EMS).
11. Celebration of Environmental promotional activities (Environment day, Earth Day, Water day, Ozone day).
12. Installation of online weather monitoring system to monitor site specific micro-meteorological data such as Rainfall, Wind Direction, Wind Speed, Temperature, Humidity and Atmospheric pressure.

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Date: 15/09/2018



Signature :   
Name : Rakesh Gupta  
Designation : CEO-Plant Operations  
Address : Adhunik Power & Natural Resources  
Limited, Village : Padampur  
Dist: Saraikela-Kharsawan –  
832 402. Jharkhand



# YUGANTAR BHARATI

## ANALYTICAL & ENVIRONMENTAL ENGINEERING LABORATORY

LAB ACCREDITED BY: National Accreditation Board for Testing & Calibration Laboratory (NABL), New Delhi  
 Jharkhand State Pollution Control Board (JSPCB)

(T-2982, T-2918)  
(B-1874)

### Ambient Air Quality Report (Buffer Zone)

Report Release Date	10-Jan.2018	Protocol	IS 5182	Part II	Part 23	Part VI
Report ID	YBAEEL/JSR/17-12-31/AAQ/01	Sample Description	Ambient Air Quality			
Sampling Date	30th to 31th Dec. 2017	Type of Industry	Power Plant			
Name of Industry	M/s - Adhunik Power & Natural Resources Limited VIII: - Padampur, Behind P.G.C.I.L substation, Jamshedpur - 832105, Jharkhand	Sampling Locations	Site A	Pindrabera		
			Site B	Padampur		
			Site C	Srirampur		
		Work Order No.	3030003129			
		Work Order Date	12/26/2017			
	Weather Condition	Clear				
Customer Ref.	Mr. Kamlesh Jha	Sample drawn by	Mr. Pramod Singh & Team			
Monitored Parameters	Method	Sampling Location			Units	NAAQS industrial, residential, rural & other aear
		Site A	Site B	Site C		
Particulate Matter (PM2.5)	CPCB Guideline	49.10	53.70	56.70	µg/m <sup>3</sup>	60 µg/m <sup>3</sup>
Particulate Matter (PM10)	IS 5182 Part 23	79.40	82.60	80.40	µg/m <sup>3</sup>	100 µg/m <sup>3</sup>
Sulphur Dioxide (SO <sub>2</sub> )	IS 5282 Part II	15.40	12.90	15.60	µg/m <sup>3</sup>	80 µg/m <sup>3</sup>
Nitrogen Dioxide (NO <sub>2</sub> )	IS 5182 Part VI	10.80	8.30	11.80	µg/m <sup>3</sup>	80 µg/m <sup>3</sup>
Carbon Monoxide (CO)	IS 5182, Part 10	1.00	2.70	1.20	mg/m <sup>3</sup>	4 mg/m <sup>3</sup>
Ozone (O <sub>3</sub> )	CPCB Guideline	4.80	5.40	6.40	µg/m <sup>3</sup>	100 µg/m <sup>3</sup>
Ammonia (NH <sub>3</sub> )	CPCB Guideline	3.29	6.51	8.14	µg/m <sup>3</sup>	400 µg/m <sup>3</sup>
Lead (Pb)	IS 5182, Part 22	N.D	N.D	N.D	µg/m <sup>3</sup>	1.0 µg/m <sup>3</sup>
Benzene (C <sub>6</sub> H <sub>6</sub> )	IS 5182, Part 21	0.34	0.38	0.47	µg/m <sup>3</sup>	5 µg/m <sup>3</sup>
Benzo(a)Pyrene (BaP)	IS 5182, Part 12	N.D	N.D	N.D	ng/m <sup>3</sup>	1 ng/m <sup>3</sup>
Arsenic (As)	CPCB Guideline	N.D	N.D	N.D	ng/m <sup>3</sup>	6 ng/m <sup>3</sup>
Nickel (Ni)	IS 5182 Part 22	1.10	1.20	1.50	ng/m <sup>3</sup>	20 ng/m <sup>3</sup>

\*\*\*\*\* End of Report\*\*\*\*\*

**Remarks**  
**Note**

All values are observed well within the limit  
 All values are expressed in microgram/ cubic meter  
 The results listed refer only to the tested sample and applicable parameter.  
 This report, in full or in part, shall not be used for advertising or as evidence in any court of law  
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 The samples collected shall be destroyed after two month from the date of issue of the certificate unless specified otherwise  
 The liability of the laboratory is limited to the invoiced amount  
 All disputes are subjected to the Ranchi Jurisdiction

*Pramod Singh*  
 Tested by  
 Pramod Singh  
 Lab Analyst



*Brij Nandan Kumar*  
 Verified by  
 Brij Nandan Kumar  
 Section Incharge

*Umesh Das*  
 Issued by  
 Umesh Das  
 Technical Manager  
 YUGANTAR BHARATI Analytical & Environmental Engineering Laboratory



An ISO 9001:2008 & OHSAS 18001:2007 Certified Laboratory

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ANALYTICAL & ENVIRONMENTAL ENGINEERING LABORATORY

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Jharkhand State Pollution Control Board (JSPCB)

(T 2982, T-2916)  
(B-1874)

## Ambient Air Quality Report (Core Zone)

Report Release Date	10-Jan-2018	Protocol	IS 5182	Part II	Part 23	Part VI
Report ID	YBAEEL/JSR/17-12-31/AAQ/01	Sample Description	Ambient Air Quality			
Sampling Date	29th to 30th December 2017	Type of Industry	Power Plant			
Name of Industry	M/s - Adhunik Power & Natural Resources Limited Vill: - Padampur, Behind P.G.C.I.L substation, Jamshedpur - 832105, Jharkhand	Sampling Locations	Site A	CHP Area ( Sati Steel)		
Site B			GET Hostel			
Site C			Switch Yard			
Work Order No.		3030003129				
Work Order Date		12/26/2017				
Weather Condition		Clear				
Customer Ref.	Mr. Kamlesh Jha	Sample drawn by	Mr. Pramod Singh & team			
Monitored Parameters	Method	Samplin Location			Units	NAAQS industrial, residential, rural & other aear
		Site A	Site B	Site C		
Particulate Matter (PM2.5)	CPCB Guideline	42.60	51.90	52.60	µg/m3	60 µg/m3
Particulate Matter (PM10)	IS 5182 Part 23	88.20	71.60	79.60	µg/m3	100 µg/m3
Sulphur Dioxide (SO2)	IS 5282 Part II	12.60	10.90	14.60	µg/m3	80 µg/m3
Nitrogen Dioxide (NO2)	IS 5182 Part VI	9.05	8.20	10.30	µg/m3	80 µg/m3
Carbon Monoxide (CO)	IS 5182, Part 10	1.10	1.20	1.80	mg/m3	4 mg/m3
Ozone (O3)	CPCB Guideline	2.50	3.60	4.60	µg/m3	100 µg/m3
Ammonia (NH3)	CPCB Guideline	6.80	8.12	5.25	µg/m3	400 µg/m3
Lead (Pb)	IS 5182, Part 22	N.D	N.D	N.D	µg/m3	1.0 µg/m3
Benzene (C6H6)	IS 5182, Part 21	0.42	0.58	0.63	µg/m3	5 µg/m3
Benzo(a)Pyrene (BaP)	IS 5182, Part 12	N.D	N.D	N.D	ng/m3	1 ng/m3
Arsenic (As)	CPCB Guideline	N.D	N.D	N.D	ng/m3	6 ng/m3
Nickel (Ni)	IS 5182 Part 22	1.40	1.60	1.20	ng/m3	20 ng/m3

\*\*\*\*\* End of Report\*\*\*\*\*

**Remarks** All values are observed well within the limit  
**Note** All values are expressed in microgram/ cubic meter  
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Tested by  
Pramod Singh  
Lab Analyst



Verified by  
Brij Nandan Kumar  
Section In-charge

Issued by  
10/1/18  
Technical Manager  
Yugantar Bharti Analytical & Environmental Engineering Laboratory



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(T 2982, T-2918)  
(B-1874)

## Noise Quality Test Report

Test Release Date	10-Jan-18	Protocol	IS : 15575.1.2005
Report ID	YBAEEL/JSR/17-12-31/Noise/01	Sample Description	Noise
Name of Industry	M/s Adhunik Power & Natural Resources Limited Vill: - Padampur, Behind P.G.C.I.L substation, Jamshedpur -832105, Jharkhand	Type of Industry	Power plant
		Sampling Duration	24 Hrs.
		Sample Collected by	Own/ Pramod Singh & team
		Sampling Date	29th to 31th December 2017
		Customer Rep.	Mr. Kamlesh Jha

### Work Zone Noise Report

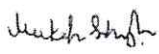
Location	Station No.	Leq in dB (Day)	Leq in dB (Night)	Norms dB
Turbine Floor	N 1	86.1	87.0	
Coal Crusher	N 2	77.3	68.4	
Cooling Tower	N 3	73.5	77.3	90 dB
Compressor House	N 4	82.3	86.3	
Boiler Feed Pump Area	N 5	87.1	84.5	

### Ambient Noise Monitoring


Location	Station No.	Leq in dB (Day)	Leq in dB (Night)	Norms dB
Main Gate Area	N 6	63.9	60.5	
Occupational Health Centre	N 7	60.9	58.5	Day - 75 dB Night - 70 dB
Sati Steel (CHP Area)	N 8	61.5	59.2	
Reservoir Area	N 9	57.4	54.4	


### Remarks Note

All values are observed well within the limit  
Day Time - From 6:00 Am to 10:00Pm, Night Time - From 10:00 PM to 6:00 Am  
The results listed refer only to the tested sample and applicable parameter.  
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Tested by  
Mukesh Kr. Singh  
Field Analyst



  
Verified by  
Brij Nandan Kumar  
Section In-charge

  
Issued by  
Umesh Das  
Technical Manager  
Yugantar Analytical & Environmental Engineering Laboratory



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Jharkhand State Pollution Control Board (JSPCB)

(T 2932, T-2918)  
(S-1874)

## STACK MONITORING TEST REPORT

Report Release Date	10-Jan-2018	Protocol	IS 11255	Part III	Part I
Report ID	YBAEEL/JSR/17-12-31/Stack/01	Sample Description	Stack Emission		
Sampling Date	30th Dec 2017	Type of Industry	Power Plant		
Name of Industry		Sampling Location	Port hole		
M/s Adhunik Power & Natural Resources Limited Vill: - Padampur, Behind P.G.C.I.L substation, Jamshedpur - 832105, Jharkhand		Pollution Control System	Electro Static Precipitator		
		Ladder	Permanant		
		Platform	Permanant		
		Weather Condition	Clear		
Customer Ref.	Mr. Kamlesh Jha	Sample drawn by	Own/ Pramod Singh & Team		
<b>General Information</b>					
Stack No. if any			Boiler I		
Height of Stack from ground		in metre	275		
Top cross section area of Stack		in Sq. mtr	55.39		
Height of porthole from ground		in metre	90		
<b>Fuel Characteristic Report &amp; Oven Description</b>					
Type of Fuel			Coal		
Fuel Consumption			167 T/Hr.		
Production Capacity			270 MW		

<b>Result of Analysis</b>					
Atmospheric temperature		in ° K		292	
Stack gas temperature		in ° K		394	
Stack gas velocity		in m/s		20.27	
Volumetric flow rate		in Nm <sup>3</sup> /hr		3057148.17	
Concentration of Particulate Matter		in mg/Nm <sup>3</sup>		46.27	
Concentration of Sulphur dioxide		in mg/Nm <sup>3</sup>		432.4	
Concentration of Oxides of Nitrogen		in mg/Nm <sup>3</sup>		209.16	
Concentration of CO		%		21	
Concentration of Mercury		in mg/Nm <sup>3</sup>		0.001	

\*\*\*\*\* END of REPORT \*\*\*\*\*

Remarks All values are observed well within the limit

Note The results listed refer only to the tested sample and applicable parameter.

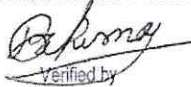
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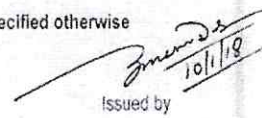
The samples collected shall be destroyed after two month from the date of issue of the certificate unless specified otherwise

  
Tested by

Pramod Singh  
Field Analyst

  
Verified by

Brij Nandan Kumar  
Section In-charge

  
10/1/18  
Issued by

Umesh Das  
Technical Manager  
Yugantar Bharati Analytical &  
Environmental Engineering Laboratory



An ISO 9001:2008 & OHSAS 18001:2007 Certified Laboratory



Post Box no. 32 | Namkom Post Office | Sidroul | Ranchi - 834010 (Jharkhand)

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# YUGANTAR BHARATI

## ANALYTICAL & ENVIRONMENTAL ENGINEERING LABORATORY

LAB ACCREDITED BY: National Accreditation Board for Testing & Calibration Laboratory (NABL), New Delhi  
Jharkhand State Pollution Control Board (JSPCB)

(T 2982, T-2918)  
(B-1874)

### Test Report

<b>Issued to :-</b> M/s ADHUNIK POWER & NATURAL RESOURCES LIMITED Vill: Padampur, Behind P.G.C.I.L Substation, Jamshedpur-832105, Jharkhand	<b>Sample Code:-</b> 171231-WW-E03 <b>Report ID :-</b> YBAEEL/JSR/17-12-31/WW/E03 <b>Date of Issue:-</b> 10 <sup>th</sup> Jan. 2018 <b>Reference :-</b> YBAEEL/WA/L/C/Dec-17/15
<b>Sample Particulars</b>	<b>Details of Sampling</b>
<b>Sample Name/Description:-</b> Waste Water <b>Sample Quantity :-</b> One litre <b>Sample pkg. Condition :-</b> Sealed in plastic bottle	<b>Date of sampling :-</b> 31-12-2017 <b>Sample Received Date:-</b> 01/01/2018 <b>Sampling Protocol:-</b> YBAEEL/SP/01/00 <b>Sample collected by:-</b> Own/ Mr.Pramod Singh & team <b>Sampling Location:-</b> Final effluent (guard pond)

### Test Result


Sl. No.	Tested Parameter	Unit	Results	Method (APHA 22 <sup>ND</sup> Edition 2012)	Permissible Limit
1.	pH	---	7.72	4500 H-B	5.5 - 9
2.	Oil & Grease	mg/l	1.2	5520 B	10
3.	Copper	mg/l	< 0.01	3111 B	3
4.	Zinc	mg/l	0.06	3111 B	5
5.	Phosphate	mg/l	0.49	--	5
6.	Suspended solid	mg/l	52	--	100
7.	BOD	mg/l	13.0	3025 P-44	30
8.	COD	mg/l	7.7	3025 P-58	250
9.	TDS	mg/l	210	--	-
10.	Chloride	mg/l	21.0	4500 Cl B	-
11.	Sulphate	mg/l	27.3	4500 SO4 E	-
12.	Iron	mg/l	0.00	3111 B	3

\*\*\*\*\*End of Test\*\*\*\*\*


Remarks:-According to tested parameter, the results found within the prescribe limit of waste water specification.

Specific contractual notes:-

- ◆ The results listed refer only to the tested sample and applicable parameter.
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- ◆ This report cannot be reproduced, except when in full, without the written permission of the Lab In-charge
- ◆ The samples received shall be destroyed after two month from the date of issue of the certificate unless specified otherwise and sample for biological testing will be destroyed after two week of testing.
- ◆ The liability of the laboratory is limited to the invoiced amount.
- ◆ All disputes are subjected to the Ranchi Jurisdiction.

  
Tested by  
(Bajrang Kr.)  
Analyst

  
Verified by  
(Sunil Singh)  
Authorised Signatory

  
Issued by  
(Umesh Das)  
Technical Manager  
Yugantar Bharati Analytical &  
Environmental Engineering Laboratory



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### Test Report

<b>Issued to :-</b> M/s ADHUNIK POWER & NATURAL RESOURCES LIMITED Vill: Padampur, Behind P.G.C.I.L Substation, Jamshedpur-832105, Jharkhand	<b>Sample Code: - 171231-WW-E01</b> <b>Report ID :- YBAEEL/JSR/17-12-31/WW/E01</b> <b>Date of Issue: - 10<sup>th</sup> Jan. 2018</b> <b>Reference :- YBAEEL/WA/LC/Dec-17/13</b>
<b>Sample Particulars</b>	<b>Details of Sampling</b>
<b>Sample Name/Description: - Waste Water</b> <b>Sample Quantity :- One litre</b> <b>Sample pkg. Condition :- Sealed in plastic bottle</b>	<b>Date of sampling :- 31-12-2017</b> <b>Sample Received Date: - 1/01/2018</b> <b>Sampling Protocol: - YBAEEL/SP/01/00</b> <b>Sample collected by: -Own/ Mr.Mukesh Singh &amp; Team</b> <b>Sampling Location: -Ash pond outlet</b>

### Test Result

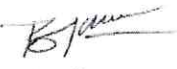
Test started on: -	1 <sup>st</sup> Jan. 2018	Test completed on :-	9 <sup>th</sup> Jan. 2018		
Sl. No.	Tested Parameter	Unit	Results	Method (APHA 22 <sup>ND</sup> Edition 2012)	Permissible Limit
1.	pH	---	7.6	4500 H-B	N/A
2.	Temperature	°c	22.7	2550 B	N/A
3.	Total dissolve solid	mg/l	57	2540 C	N/A
4.	Oil & Grease	mg/l	5.2	5520 B	N/A
5.	Mercury	mg/l	< 0.003	3112 B	N/A
6.	Arsenic	mg/l	< 0.003	3114 B	N/A
7.	Total Chromium	mg/l	0.01	3111 B	N/A
8.	Lead	mg/l	0.03	3111 B	N/A

\*\*\*\*\*End of Test\*\*\*\*\*

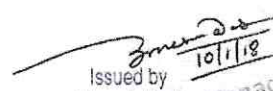
Remarks:-According to tested parameter, the results found within the prescribe limit of waste water specification.

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