EC COMPLIANCE REPORT
&
ENVIRONMENTAL STATUS REPORT
(October 2017 - March 2018)

Of

Birgahani Coal Washery
(Capacity – 0.96 MTPA)

Located At

Village - Birgahani, Tehsil - Baloda,
District – Janjgir-Champa, State - Chhattisgarh

Project Proponent:

Hind Energy & Coal Beneficiation (India) Ltd.

Birghani Village, Baloda Tehsil,
Janjgir-Champa District, Chhattisgarh, India

Environment Consultant

ANACON LABORATORIES PVT. LTD., NAGPUR
Recognized by MoEF (GOI) Notifn. No. D.L.33004/99 Dt.03.01.2014
NABL T-1550 (Chemical), T-1826 (Biological), T-2344, (Mechanical)
Accredited under the QCI-NABET Scheme for EIA Consultant
BIS vide No.CL/CQAPD/OSL(7124116) dt.16.12.2011
Certified ISO 9001:2008, ISO 14001:2004, OHSAS 18001:2007

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July 2018

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INTRODUCTION

M/s Hind Energy & Coal Beneficiation (I) Ltd, (HECBIPL) has established a Coal washery plant of 0.96 MPTA (throughput capacity) at Birgahani, located at Village Birgahani, Tehsil Baloda, District Janjgir-Champa (C.G.). The plant is commissioned on 02.11.2016. The raw coal is received generally from SECL Mines located in Chal / Kusmunda/ Dipka mine.

Coal beneficiation is the process for cleaning & reducing ash content in the coal, thus improving the quality of coal. This is a wet type of coal Washery, having obtained environmental clearance vide letter No. 2985/SEIAA CG/ EC/Coal Washeries / Janjgir-Champa/244/Raipur dated 05th October, 2015.

EC Conditions compliance status and Environmental monitoring reports for the period of October 2017 to March 2018 is given below:

Compliance Status of conditions stipulated in Environmental Clearance for 0.96 MTPA Coal Washery of M/s Hind Energy & Coal Beneficiation (I) Ltd, (HECBIPL)

COMPLIANCE STATUS

Sr. No.	EC Conditions	Action Taken
1.	Land requirement shall be 10.0 Acres (Washery – 2.5 Acre, storage area – 2.45 Acre, internal roads – 1.75 Acres and green belt area – 3.30 Acre).	Complied. Washery established on the land area as stipulated in EC Letter.
2.	Project proponent shall ensure that annual throughput capacity of the coal washery shall be not exceed 0.96 million tonnes / annum.	Noted & Complied. Throughput capacity of the washery will not exceed 0.96 million tonnes/annum.
3.	No water bodies (including natural drainage system) in the area shall be disturbed due to activities associated with the setting up / operation of the washery.	Noted & Complied.
4.	Project proponent shall provide adequate facility for proper treatment of industrial and domestic effluent. Thikner followed by sedimentation ponds of adequate capacity shall be provided for treatment of industrial effluent. Domestic effluent shall be treated in septic tank and soak pits. Project proponent shall provide effluent treatment plant before commissioning of the plant. Treated / un-treated effluent collection pond shall be lined suitably to prevent seepage in to ground for avoiding ground water contamination. All the effluent treatment system shall be kept in good	Complied as per EC letter.

Sr. No.	EC Conditions	Action Taken
	running condition all the time and failure (if any), shall be immediately rectified without delay otherwise similar alternate arrangement shall be made. Project proponent shall ensure the treatment effluent quality within standard prescribed by Ministry of Environment & Forests, Government of India or Chhattisgarh Environment Conservation Board, Raipur (whichever is stringent).	
5.	Any liquid effluent what so ever generated from industrial activities shall not be discharged into the river or any surface water bodies under any circumstances, and it shall be reused wholly in the process / plantation within premises. All the industrial effluent generated shall be re-circulated / reused after proper treatment. The un-treated / treated domestic effluent shall not be discharge into the river or any surface water bodies. The treated domestic effluent shall be used for plantation purpose after proper disinfection. Project proponent shall make proper arrangements for suitable drains / pipe networks to ensure adequate flow for utilization of treated effluent inside the premises. The concept of zero discharge shall be maintained all the time except during monsoon. Arrangements shall be made that effluents and storm water do not get mixed.	Complied. No wastewater is discharged into drains / water resources as plant is operating on Zero Liquid Discharge (ZLD) facility.
6.	Project proponent shall provide adequate measuring arrangements for the measurement of water utilized in different categories and effluent generated before commissioning of the plant.	Noted and complied.
7.	Water consumption shall not exceed 495 cum / day (industrial use – 490 cum / day and domestic–5.0 cum/day). Water will be sourced from ground water as per approval of Central Ground Water Authority. Water requirement shall be optimized. Wet process based on closed water cycle system shall be adopted. Minimum water drawl for makeup purposes shall be ensured.	Complied. All conditions in CGWB letter are adhered.

Sr. No.	EC Conditions	Action Taken
8.	Project proponent shall provide adequate air pollution control arrangements such as bag filters at all points and non-points sources for the control of emissions from processes / operations and for the control of emissions during the handling & Transportation of raw coal / rejects etc. before commissioning of the plant and maintained in proper order during operation. Project proponent shall install suitable & effective air pollution control equipment at all transfer points, junction points etc. shall be covered. The particulate emissions from any point sources shall not exceed 50 mg / Nm^3 under any circumstances.	Coal crusher is equipped with dust extraction system (Bag filter) of adequate capacity to achieve particulate matter emission below 50 mg/ NM^3 as per stipulated norms. (Photograph of Bag Filter: **Annexure-II**) Water sprinkling system is installed at all the conveying system, transfer point, junction point, coal handling yard and transport roads to check dust emission due to handling raw coal and vehicle movement. The conveyors and transfer points are also covered. (Photograph of water sprinkling arrangements is enclosed in **Annexure- I** and covered conveyors is enclosed in **VII**) Adequate space has been provided for future retrofitting, if recommended.
9.	In case of transportation of raw coal / rejects by road, the project proponent shall maintain fugitive dust emissions to the minimum level in the areas of transportation routes to ensure compliance National Ambient Air Quality Standard prescribed including black topping / asphalting / concreting and maintenance with requisite water sprinkling arrangements. Vehicular emissions shall be kept under control and regularly monitored. Vehicles used for transporting the mineral shall be covered with tarpaulins and optimally loaded. The project authority shall obtain permission from competent authority of State Government for use of roads for transportation of raw coal, washed coal, reject / fines etc. through roads. The project authority shall ensure transportation of washed coal and middling / reject through railway as maximum as possible.	Fugitive dust emission is minimized during transportation by using covered conveyors, water spraying/ sprinkling.

Sr. No.	EC Conditions	Action Taken
10.	All air pollution control systems shall be kept in good running conditions all the time and failure (if any), shall be immediately rectified without delay otherwise, similar alternate arrangement shall be made. In the event of any failure of any pollution control system adopted by the industry, the respective production unit shall not be restarted until the control measures are rectified to achieve the desired efficiency.	Complied. Air pollution control equipments are installed
11.	Adequate number of permanent ambient air quality monitoring stations (not less than four) in the core zone as well as buffer zone for $PM_{2.5}$, PM_{10}, NO_x and SO_2 shall be set-up in the down wind direction as well as where maximum ground level concentrations are anticipated in consultation with the Chhattisgarh Environment Conservation Board. Monitoring network shall be designed taking into account the environmentally and ecologically sensitive targets, land use pattern, location of the stacks, meteorological conditions and topographic features including existing ambient air quality data. The data so collected shall be properly analyzed and submitted to the Chhattisgarh Environment Conservation Board, Raipur, Regional Office, Chhattisgarh Environment Conservation Board, Bilaspur SEIAA, Chhattisgarh and Regional Office, Ministry of Environment, Forest and Climate Change, Government of India, Bhopal in every six months.	Complied. Four nos. of ambient air quality monitoring stations have been established & are operational for monitoring ambient air data. Heavy metals (Hg, As, Ni, Cd & Cr) are monitored. Ambient air quality monitoring data for current monitoring period is enclosed along with Status report. Monitoring reports are enclosed with Environmental Status Report.
12.	Project proponent shall install separate electric metering arrangements with time totalizer and interlocking arrangement for the running of pollution control devices. These arrangements shall be made in such a fashion that any non-functioning of pollution control device / devices shall immediately stop the electric supply to the raw coal supply system and shall remain tripped till the pollution control device / devices are made functional again / rectified to achieve the desired efficiency.	Noted and being complied.
13.	The raw coal, washed coal and coal wastes	Noted and being complied.

Sr. No.	EC Conditions	Action Taken
	(rejects) shall be stacked properly at earmarked site (s) within stockyards fitted with wind brakers/ shields. Adequate measures shall be taken to ensure that the stored minerals do not catch fire.	
14.	Project proponent shall take effective steps for safe disposal of solid wastes and sludge. Project proponent shall obtain authorization from Board for Management and Handling of hazardous materials as per Hazardous Wastes (Management, Handling and Trans boundary Movement) Rules, 2008 (if required)	Washery rejects and dried sludge (Coal fines) of the slime pond is being sold to nearby power plants & sponge iron plants. MoUs are already signed with the end users. There is no generation of hazardous wastes from the operation of Coal washery.
15.	All the internal roads shall be made pucca before commissioning of the plant. The project proponent shall adopt good housekeeping practices. The roads shall be regularly cleaned. Avenue plantation shall be developed along the roads. Facilities for parking of vehicles/trucks carrying coal waste rejects shall be created within the unit premises. No public place shall be used for parking of vehicles/trucks.	Being complied. All internal roads are concrete & plantation has also been done along the road side wherever possible. Maintenance work is regularly carried out by HECB.
16.	Project proponent shall take proper action to control the noise pollution. Project proponent shall install appropriate noise barriers / control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation to control the noise. Earplugs / ear muffs etc. shall be provided to the employee working in the high noise areas. The noise level shall not exceed the limits 75 dB (A) during the day time and 70 dB (A) during the night time within the factory premises. Project proponent shall take adequate measures for control of noise level below 85 dB (A) in the work environment. Workers engaged in noisy areas shall be periodically examined to maintain audiometric recode and for treatment for any hearing loss including rotating them to non-noisy / less noisy areas.	Complied. Machines & equipment's producing noise are covered with sound absorbing material & ear plugs/muffs are being provided to the workers in noisy environment.
17.	Project proponent shall provide appropriate arrangements to avoid air pollution, water	Noted and complied.

Sr. No.	EC Conditions	Action Taken
	pollution, noise pollution etc. during construction phase and during transportation of plants/machineries/equipment/construction materials etc. to the propose site. For controlling fugitive dust during transportation and construction works, regular sprinkling of water in village roads and other vulnerable areas of the plant shall also be ensured. The emission from vehicles engaged for transportation of plants / machineries / equipment/construction materials etc. to be site shall be ensured within prescribed vehicle emission norms. First aid and sanitation arrangements shall be made for the drivers and other contract workers during construction phase.	
18.	The construction of effluents treatment plant and installation of air pollution control equipment shall be taken up simultaneously with other civil / mechanical works at the propose site. The progress of the activities related to the project shall be submitted periodically to Chhattisgarh Environment Conservation Board, Raipur, Regional Office, Chhattisgarh Environment Conservation Board Bilaspur, SEIAA, Chhattisgarh and Regional Office, Ministry of Environment, Forest and Climate Change, Government of India, Bhopal	Noted and complied.
19.	Project proponent shall provide adequate number of influent and effluent quality monitoring stations / points in consultation with Chhattisgarh Environment Conservation Board; Regular monitoring shall be carried out for relevant parameters. Regular monitoring of surface and ground water quality including heavy metals (Hg, Cr, As, Pb) shall be undertaken and the project area to ascertain the change in the water quality. If any, due to leaching of contaminants from disposal area / project area. Result and data collected shall be analyzed to ascertain the status of water quality and findings shall be carried out by establishing a network of existing wells and	Zero effluent discharge system is maintained in the plant. Industrial effluent i.e. water after coal washing is being treated in thickeners and the treated water is reused in coal washing process. Domestic effluent is discharged in septic tank and soak pit system. Monitoring report ground water quality for this monitoring period is enclosed below in status report section. The management has adopted zero effluent discharge system, i.e. recycling and reuse of the process

Sr. No.	EC Conditions	Action Taken
	constructing new piezometer at suitable locations at the proponent cost in and around project area in consultation with Regional Director, CGWB, Central Region, Bhopal.	effluent thereby reducing the fresh water consumption. Rainwater harvesting measures are also implemented in the plant premises to improve the ground water conditions of the area. (Rainwater Harvesting Structure schematic diagram and photograph: **Annexure V**) Photograph of Piezometer in enclosed in **Annexure VIII**.
20.	Adequate safety measures shall be provided in the plant area to check/minimize spontaneous fires in raw coal yard etc. especially during summer season. Copy of the these measures with full details along with location plant layout shall be submitted to Chhattisgarh Environment Conservation Board, Raipur, Regional Office, Chhattisgarh Environment Conservation Board, Bilaspur, SEIAA Chhattisgarh Environment and Regional Office, Ministry of Environment, Forest and Climate Change, Government of India, Bhopal.	Complied. Fixed water sprinklers are provided at the raw coal and washed coal stack yards. **(Annexure I)**. Fire hydrants are provided at strategic locations in the plant premises. Storage of coal for longer period is avoided. Also fire extinguishers of suitable types are provided at strategic locations in the plant premises to deal with emergency situations. List of trained manpower dealing with fire accidents is displayed at the washery office.
21.	At least 3.30 Acres (about one third of the total plant area) shall be used for green belt development. Width of green belt shall not be less than 15 meter all along the boundary of the plant premises. As far as possible maximum area of open spaces shall be utilized for plantation purposes. Industry shall ensure that at least three year old plants shall be planted for green belt development. Project proponent shall abide by the decisions taken by Ministry of Environment, Forest and Climate Change, Government of India / Central Government / Central Pollution Control Board from time to time in this regard. Three density of 1500-2000 trees per hectare with local broad leaf species should be maintained.	Noted and being complied. A total of 4404 nos. of trees have been planted to cover more than 33% of plant area. Photographs of green belt are given in **Annexure III.**
22.	Project proponent shall provide garland drains with appropriate check dams all along the raw	Garland drains all along the material handling areas have been

Sr. No.	EC Conditions	Action Taken
	coal, dust; washery rejects dump / storage areas etc. to avoid any possibility of erosion (wearing away) during rain. Garland drain (size, gradient & length) and sump capacity shall be designed keeping 50% safety margin over and above the peak sudden rainfall and maximum discharge in the area adjoining the project site. Sump capacity shall also provide adequate retention period to allow proper settling of silt material. Sedimentation pits shall be constructed at the corners of the garland drains. Project proponent shall provide adequate collection and treatment arrangement for proper management of storm water. The surface run-off shall be silted through a series of check dams and drains. The storm water shall be collected in storage tanks and used for industrial purpose, so as to reduce the ground water consumption.	constructed. Sedimentation pit has also been constructed. Network of drains to carry the storm water to sedimentation pit have been installed. The properly settled water is used in coal washing process and dust suppression and plantation. (Photographs of storm water drains are given in **Annexure VI**)
23.	The project proponent shall also comply with all environment protection measures and safeguard recommended in the EIA/EMP report. Further, the company must undertake socio-economic development activities in the surrounding village like community development programme, educational programmes drinking water supply and health care etc.	Noted for compliance.
24.	Project proponent shall adopt the code to practice for coal washeries issued by Central Pollution Control Board.	Noted and agreed.
25.	Project proponent shall adopt rainwater-harvesting technique in the project area and residential area (if any) for recharge of ground. The rainwater-harvesting technique shall be incorporated right from the design stage of all structures. Project proponent shall develop rainwater-harvesting structures to harvest the rainwater for utilization in the lean season as well as to recharge the ground water table. A detailed scheme for rainwater harvesting to recharge the ground water aquifer shall be prepared in consultation with Central Ground	Rainwater harvesting system is already implemented in the washery plant. Surface run-off from the washery premises is collected in a settling tank through a network of storm water drains and the properly settled water is used for dust suppression, plantation and coal washing purposes. Construction of roof top rain water harvesting structure is already

Sr. No.	EC Conditions	Action Taken
	Water Authority / State Ground Water Board. A copy of the same shall be submitted within three months to the Chhattisgarh Environment Conservation Board, Raipur, Regional Office, Chhattisgarh, Environmental Conservation Board, Bilaspur, SEIAA, Chhattisgarh and Regional Office, Ministry of Environment, Forest and Climate Change, Government of India, Bhopal.	constructed. (Rainwater Harvesting Structure schematic diagram and photograph: **Annexure V**).
26.	Project proponent shall establish an environmental management cell to carryout function relating to environment management under the supervision of senior executive who would directly report to the head of organization. A full-fledged laboratory with qualified technical / scientific staffs to monitor the influent, effluent, ground water, surface water, soil, stack emission and ambient air quality etc. shall be provided.	Noted and complied.
27.	To ensure the generation of employment in the local areas, recruitment shall be done by inviting applications first from the local residents of the Chhattisgarh State. In case of non-availability of suitable candidate for certain post in the first attempt, the project proponent may call the applications as second call not only from local residents of the Chhattisgarh State but also from the other State.	Noted and complied. First preference is given to local person. Approximate 80% employees are residents of the Chhattisgarh State
28.	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, crutch etc. The housing may be in the form of temporary structures to be removed after the completion of the project.	Noted & complied.
29.	Occupational Health Surveillance of the all workers shall be done on a regular basis i.e. at-least once in a year and records maintained as per the factories act.	Being complied. Pre-employment medical test has been conducted on all the employees of the plant. Every employee of the plant will be subjected to medical test

Sr. No.	EC Conditions	Action Taken
		at least once in a year. Records of the medical examination will be maintained properly as per the conditions stipulated.
30.	Project proponent shall also ensure the availability of adequate pasture land for cattle feed after acquisition of land. Project proponent shall also facilitate the respective Gram Panchyats for development of alternative pasture land for cattle feed in the villages as per demand of concerning Gram Panchayat(s).	Noted and agreed. An area of 1.6 Acre has been made available as pasture land for feeding cattle of the village. Whenever demanded by concerning Gram Panchayat additional land will be identified in the village in consultation with the Gram Panchayat and will be developed as pasture land.
31.	Adequate funds shall be allocated for undertaking CSR activities (apart from committed plantation) and in any case it shall not be less than 02% of the profit. Project authority must undertake socio-economic development programmes, educational programmes, drinking water supply and health care etc. Details of activities shall also be submitted to Chhattisgarh Environment Conservation Board, Raipur, Regional Office, Chhattisgarh Environment Conservation Board, Bilaspur SEIAA, Chhattisgarh and Regional Office, Ministry of Environment, Forest and Climate Change, Government of India, Bhopal. The funds earmarked for the environment protection measures shall not be diverted for other purpose and year-wise expenditure should be reported to the Chhattisgarh Environment Conservation Board, Raipur, Regional Office, Chhattisgarh Environment Conservation Board, Bilaspur, SEIAA, Chhattisgarh and Regional Office, Ministry of Environment, Forest and Climate Change, Government of India, Bhopal. Local laboures shall be given employment during construction and subsequently absorbed in the plant.	Agreed. HECB is committed to fulfill the statutory obligation of spending minimum 2 % of net profit for CSR activities as per the Companies act 2013. A total expenditure of Rs. 671971.00 /- has been carried out for CSR activities and Rs. 671972.00 has been incurred for environment protection measure in Birgahani.
32.	SEIAA, Chhattisgarh reserves the right to revoke the clearance if conditions stipulated are not implemented to the satisfaction. SEIAA	Noted and agreed.

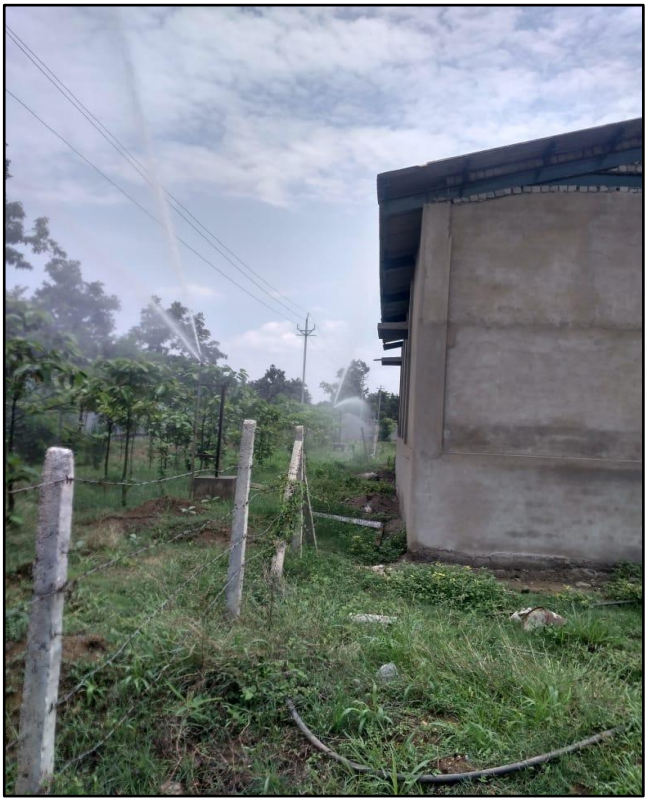
Sr. No.	EC Conditions	Action Taken
	Chhattisgarh reserves the right to amend / cancel any of the conditions and add new conditions and make further stringent the emission / effluent limit as and when deemed necessary in the interest of environment protection, change in the project profile or non-satisfactory implementation of the stipulated conditions etc.	
33.	The project proponent shall advertise in at least two local newspaper 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 environment clearance and copies of clearance letter are available with the Chhattisgarh Environment Conservation Board and may also seen at Website of the Ministry of Environment, Forests and Climate Change, Government of India at www.envfor.nic.in and website of SEIAA, Chhattisgarh at www.seiaacg.org	The advertisement of grant of environmental clearance was published in local widely circulated newspapers; “Dainik Bhaskar" dated 11/10/2015.
34.	A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, Zila Parishad / Municipal Corporation, urban local Body and the Local NGO, if any, from whom suggestions / representation, if any, received while processing the proposal. The clearance letter shall also be put on the website of the Company by the proponent.	Noted and complied
35.	Half yearly report on the status of implementation of the stipulated conditions and environment safeguards shall be submitted to the Chhattisgarh Environment Conservation Board, Raipur, Regional Office, Chhattisgarh Environment Conservation Board, Bilaspur, SEIAA, Chhattisgarh and Regional Office, Ministry of Environment, Forests and Climate Change, Government of India, Bhopal.	Noted and being complied.
36.	Regional Office of the Ministry of Environment and Forests at Bhopal will monitor the implementation of the stipulated conditions. A	Complied.

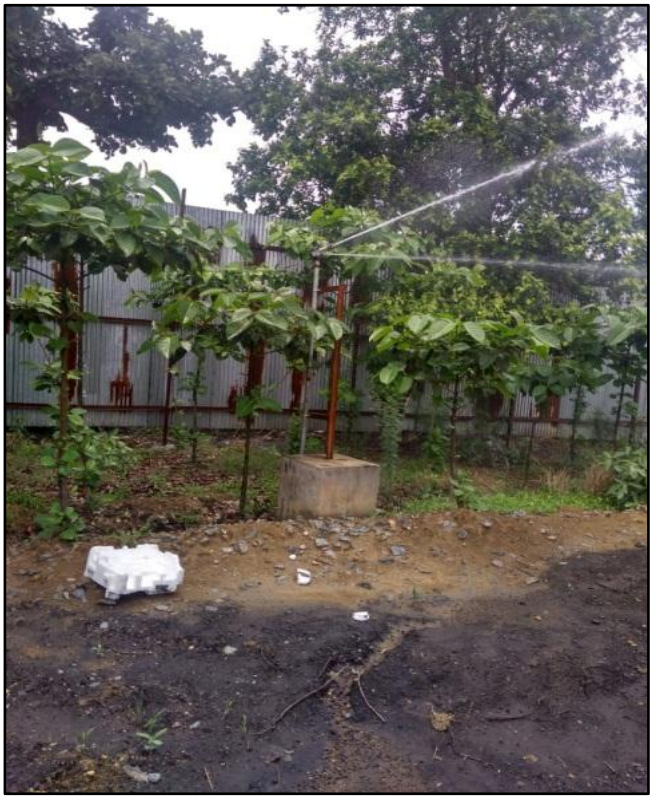
Sr. No.	EC Conditions	Action Taken
	complete set of documents including Environment Impact Assessment Report and Environment Management Plan along with the additional information submitted from time to time shall be forwarded to the Regional Office for their use during monitoring. Project proponent will up-load the compliance status in their website and up-date the same from time to time at least six monthly basis.	
37.	The project authority shall constitute a monitoring committee comprising of representatives of all stake holders i.e. Gram Panchayat, villagers, workers, transporters and management etc. This committee shall monitor the conditions stipulated in the environmental clearance, environmental protection measures adopted, socio-economic development activities / community development programmes undertaken etc. The committee shall monitor the above matters at least once in a month; during which, factual situation regarding above matters will be discussed. The proceedings of the committee shall be recorded in writing along with suggestions (if any). Project management shall take immediate action on the basis of observations / suggestions of the committee. A copy of the proceedings of the committee shall be submitted to Regional Officers, Chhattisgarh Environment Conservation Board, Bilaspur for information.	Noted and being complied.
38.	The project authorities shall inform the Regional Office as well as the SEIAA, Chhattisgarh 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.	Date of financial closure: 31 March Date of start of land development work : November 2016
39.	Full cooperation shall be extended to the Scientists/Officers from the SEIAA, Chhattisgarh, Ministry of Environment, Forest and Climate Change, Government of India / Regional Office, Ministry of Environment,	Noted

Sr. No.	EC Conditions	Action Taken
	Forest and Climate Change, Government of India, Bhopal/the CPCB/the Chhattisgarh Environment Conservation Board, who would be monitoring the compliance of environment status.	
40.	In case of any deviation or alteration in the proposed project from those submitted to this SEIAA, Chhattisgarh for clearance, a fresh reference should be made to the SEIAA, Chhattisgarh to assess the adequacy of the condition (s) imposed and to add additional environment protection measures required. If any. No further expansion or modifications in the plant should be carried out without prior approval of the Ministry of Environment, Forests and Climate Change, Government of India / SEIAA, Chhattisgarh.	Noted.
41.	Concealing factual data or submission of false / fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of Environment (Protection) Act, 1986.	Noted
42.	The project authorities must strictly adhere to the stipulations made by the Chhattisgarh Environment Conservation Board (CECB) and the State Government.	Noted
43.	The above stipulations would be enforced among others under the Water (Prevention and Control of Pollution) Act, 1974, the Air (Prevention and Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986 and rules there under, Hazardous Materials (Management, Handling and Trans Boundary Movement) Rules, 2008 (as amended up to date) and its amendments, the Public Liability Insurance Act, 1991 and its amendments. The proponent shall ensure to provide for the costs incurred for taking up remedial measures in case of soil contamination, contamination of groundwater and surface water, and occupational and other disease due to the	Noted.

Sr. No.	EC Conditions	Action Taken
	washery operations.	
44.	The issuance of this environmental clearance does not convey any property rights in either real or personal property, or any exclusive privileges, nor does not authorize any injury to private property or any invasion of personal rights, nor nay infringement of Central, State or Local Laws or regulations.	Noted
45.	Any appeal against this environmental clearance shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under section 16 of the National Green Tribunal Act, 2010.	Noted.

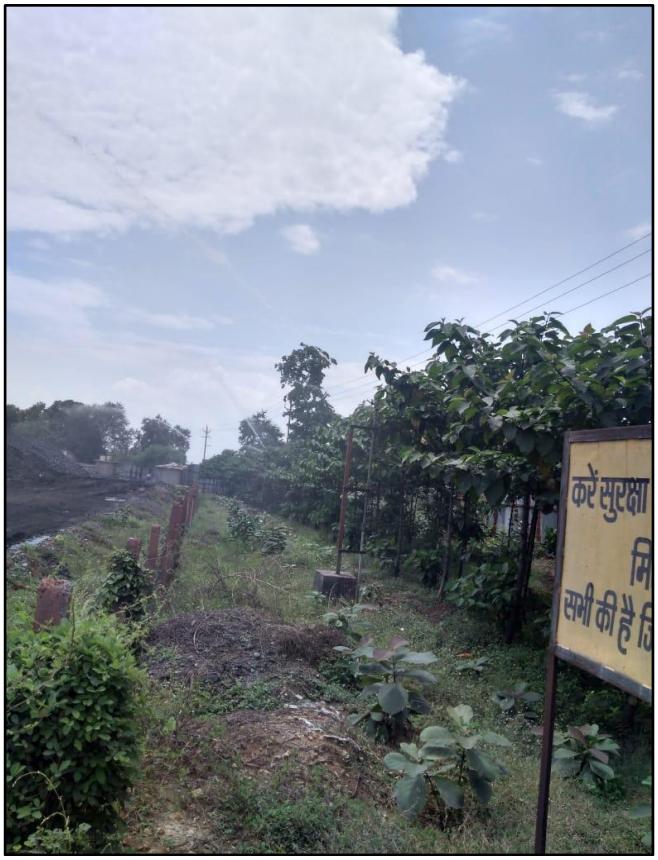
Annexure I: Boundary Walls and Sprinklers

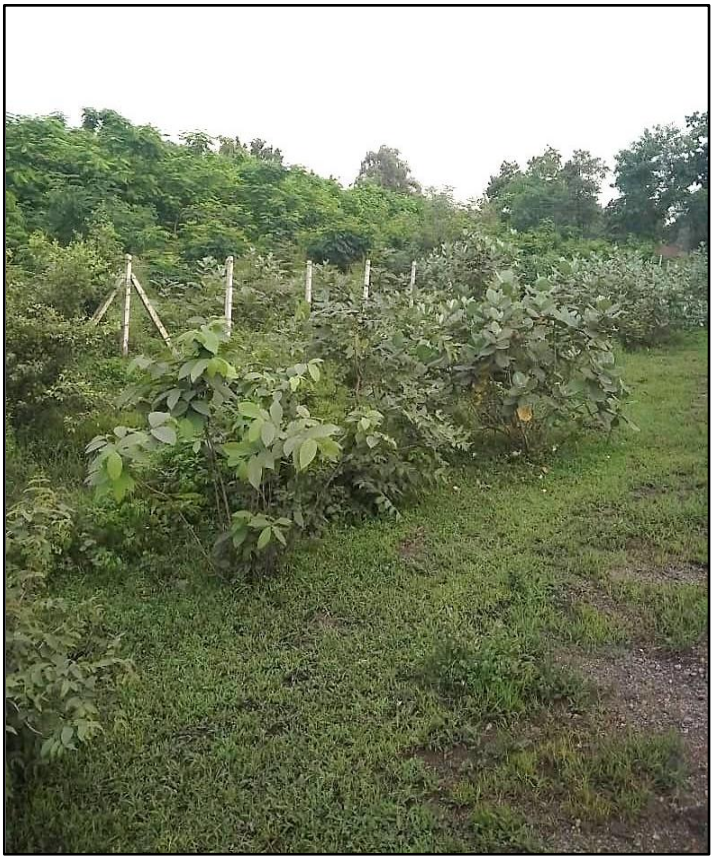




Annexure II: Bag Filters

Annexure III: Plantation





Annexure VI: Paper Advertisement of Environmental Clearance by MOEF

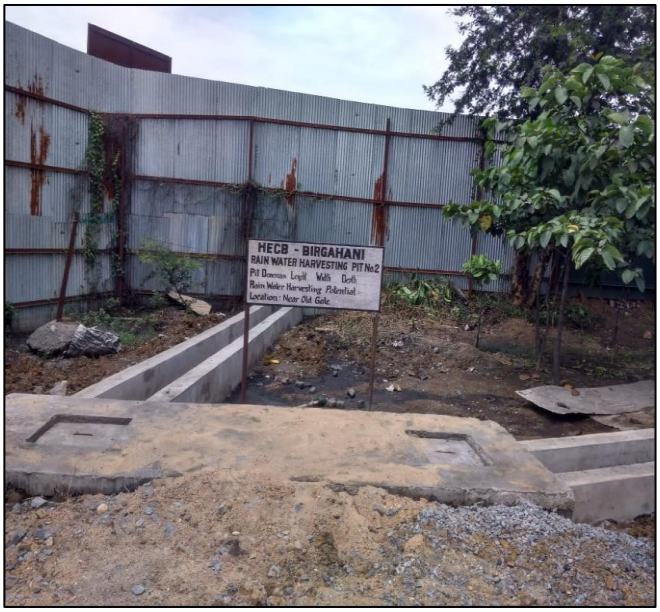
सूचना

सर्वसाधारण को सूचित किया जाता है कि मे. हिन्द एनर्जी एण्ड कोल बेनिफिकेशन (इंडिया) लिमिटेड उनके द्वारा ग्राम–बिरगहनी, तहसील–बलौदा, जिला–जांजगीर–चांपा में प्रस्तावित 1 x 0.96 मिलियन टन प्रति वर्ष (थ्रुपुट ऑफ कोल) क्षमता वाली कोलवॉशरी का लगाया जाना प्रस्तावित है। इस परियोजना हेतु स्टेटलेवल इन्वायरमेंट इम्पैक्ट एसेसमेंट अथॉरिटी (छ.ग.), पर्यावरण एवं वन मंत्रालय, भारत शासन के पत्र क्र. 2985/एस.ई.आई.ए.ए./ई.सी./कोलवाशरी/जांज–चांपा/244 रायपुर दिनॉक 05/10/2015 द्वारा पर्यावरणीय स्वीकृति प्रदान की गई है। जिसका अवलोकन स्टेट लेवल इन्वायरमेंट इम्पैक्ट एसेसमेंट अथॉरिटी कि वेबसाईट www.seiaacg.org पर किया जा सकता है एवं छत्तीसगढ़ पर्यावरण संरक्षण मंडल के मुख्य कार्यालय, व्यवसायिक परिसर, हाउसिंग बोर्ड कॉलोनी, कबीरनगर, रायपुर तथा छत्तीसगढ़ पर्यावरण संरक्षण मंडल के कार्यालय, व्यापार विहार, दीनदयाल उपाध्याय उद्यान के सामने, बिलासपुर में भी उपलब्ध है।

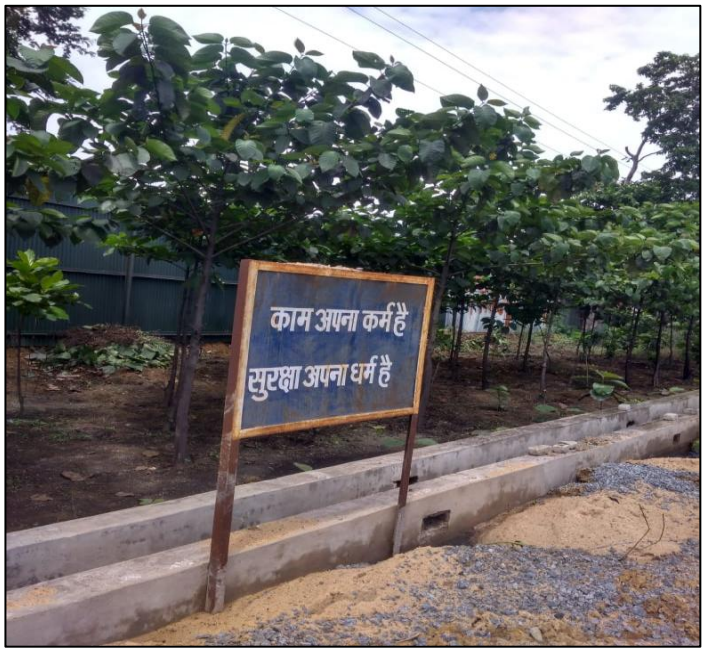
कृते
मे. हिन्द एनर्जी एण्ड कोल बेनिफिकेशन
(इंडिया) लिमिटेड

Dainik Bhaskar (11/10/15)

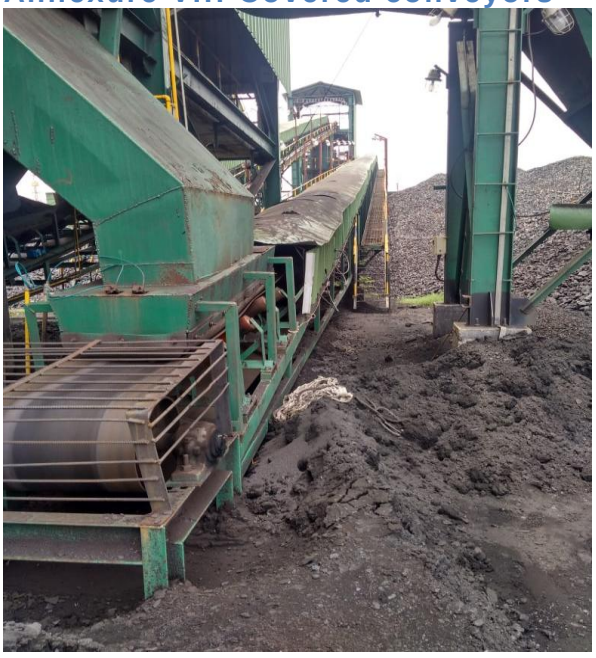
Annexure V: Rainwater Harvesting



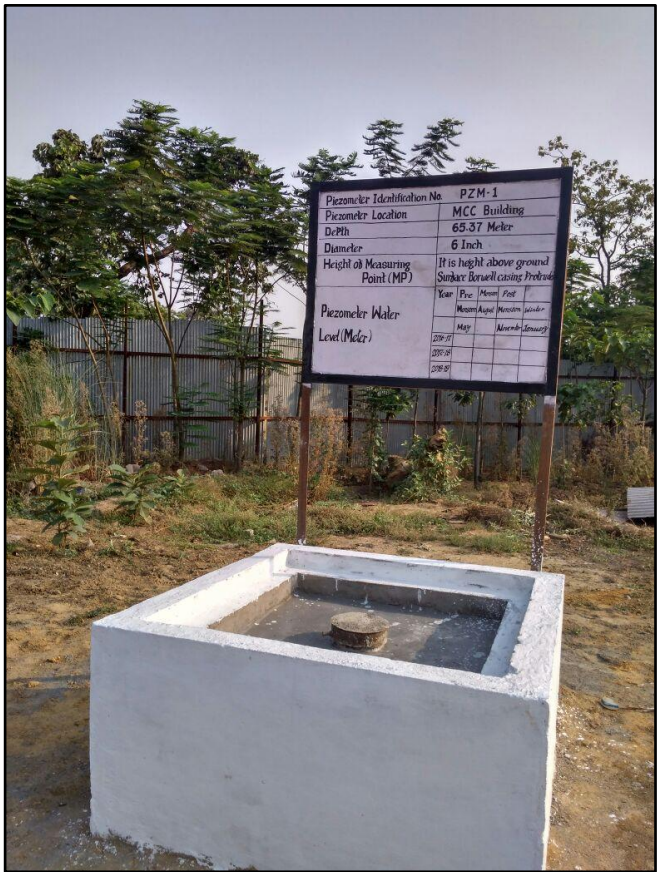
Annexure VI: Storm Water Drain

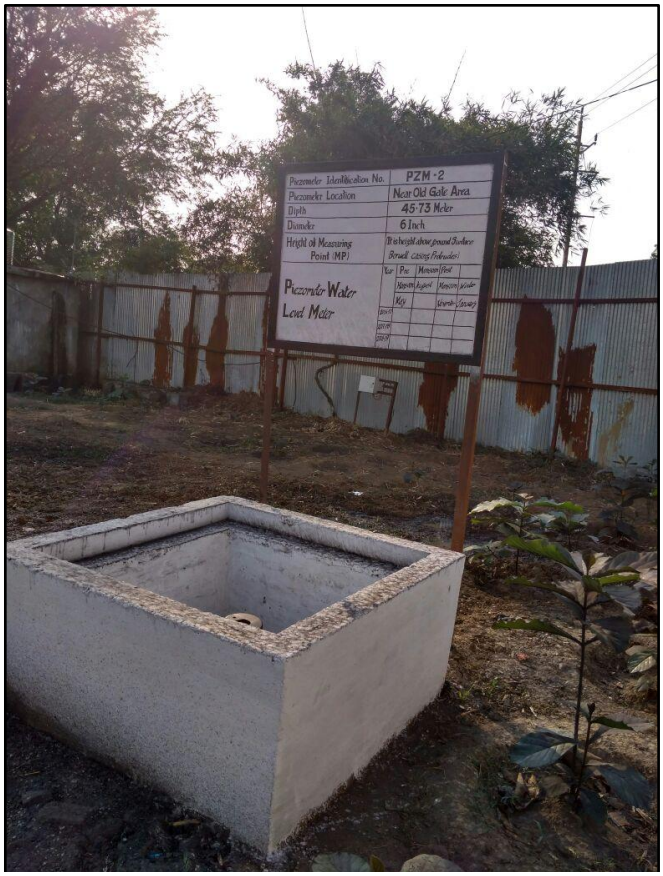


Annexure VII: Covered conveyors

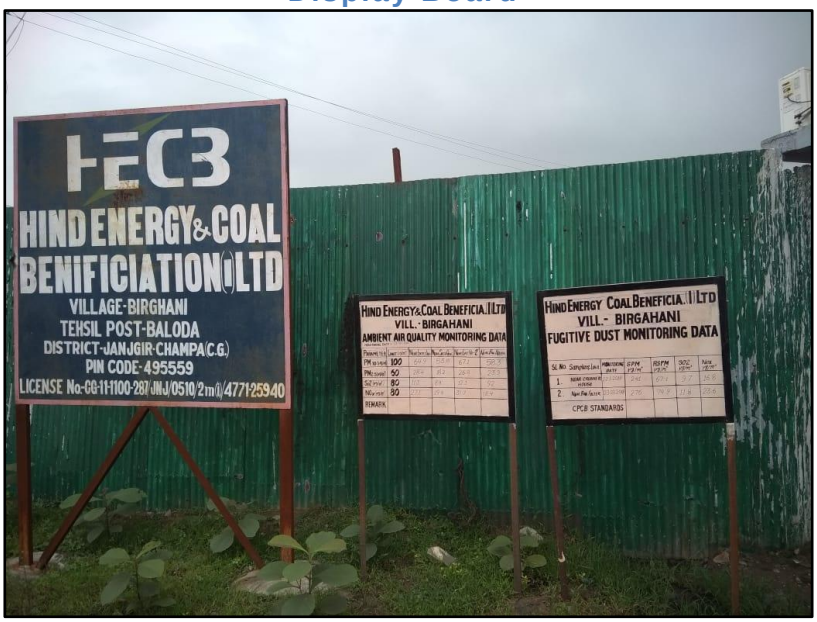


Annexure VIII: Piezometer





Display Board



ENVIRONMENTAL STATUS REPORT

Air Quality Monitoring

Regular monitoring of environmental parameters is of immense importance to assess the status of environment. With the knowledge of baseline conditions, the monitoring program will serve as an indicator for any deterioration in environmental conditions due to mining operation. Suitable mitigation steps will be taken in time to safeguard the environment, based on monitoring reports. Monitoring is important in the control of pollution since the efficiency of control measures can only be determined by monitoring.

In order to find out the impact of plant activity on sensitive receptors, it is necessary to monitor Environmental Quality to know the level of concentrations of pollutants within and around the plant area. Accordingly Hind Energy & Coal Beneficiation (India) Ltd. monitoring air, quality on monthly basis.

Ambient Air Quality Monitoring

Ambient Air Quality was monitored at four locations within plant premises and four locations in nearby villages. Fugitive emissions were monitored at two locations in the plant premises.

The sampling stations are selected at the above mentioned locations, in downwind and upwind directions of the Industry. ALPL is carrying out regular monitoring for, SPM, RPM, SO_2, NOx and heavy metals at above Ambient Air Quality Monitoring (AAQM) locations. Monitoring of fugitive emissions include parameters SPM, PM_{10}, SO_2 & NOx.

Frequency of Sampling

Ambient air quality monitoring was carried out on 24 hourly on quarterly basis (once in a quarter) for the monitoring period.

Duration of Sampling

The duration of sampling for PM_{10}, $PM_{2.5}$, SO_2, NO_x and heavy metals is twenty-four hourly. Data is compared with the standards mentioned in the Gazette Notification of the Central Pollution Control Board (CPCB) Notification 16th Nov. 2009.

Methods and Instruments used for Sampling

The air samples were analyzed as per methods specified by Central Pollution Control Board (CPCB).

The levels of Suspended Particulate Matter, Respirable Particulate Matter, Sulphur Dioxide (SO_2), Oxides of Nitrogen (NO_X) & heavy metals were monitored for identifying the impact on surrounding area. PM_{10} and $PM_{2.5}$ were collected with the help of Respirable particulate sampler and Fine particulate sampler operating 24 hours and is computed by gravimetric

method. Due to the high flow rate of air, the vacuum is formed into the hopper region of sampler which is tapped by providing a nozzle in the hopper which sucks the ambient air for sampling SO_2 and NO_X. The gases were measured by wet chemical method and were analyzed by colorimetrical. The measurement techniques used for various pollutants and other details are given in **(Table 4)**.

Table 1: Measurement Techniques for Various Pollutants

Sr. No.	Parameter	Method	Technical Protocol	Minimum Detection limit (µg/m^3)
1.	Suspended Particulate Matter, SPM	Respirable Dust Sampler (Gravimetric Method)	IS-5182 (Part – IV)	5
2.	Respirable Particulate Matter, PM_{10}	Respirable Dust Sampler (Gravimetric Method)	IS-5182 (Part – IV)	5
3.	Fine Particulate Matter, $PM_{2.5}$	Fine Particulate Sampler (Gravimetric Method)	IS-5182 (Part-IV)	-
4.	Sulphur Dioxide	Improved West and Geake Method	IS-5182 (Part – II)	4
5.	Oxide of Nitrogen	Jacob & Hochheiser Modified Method	IS-5182 (Part – VI)	4
6.	Heavy Metals	Acid digestion	CPCB Guideline (Vol. 1)	0.0001

Ambient Air Quality

The ambient air quality monitoring was carried out at 4 locations in the Plant premises and 4 locations in the nearby villages in upwind, downwind and crosswind directions of the coal washery project. The air quality monitoring was conducted for PM_{10}, $PM_{2.5}$, SO_2, NO_x and heavy meals during this monitoring period.

Fugitive emission monitoring was carried out at two locations within the washery premises during this period for the parameters which includes SPM, PM_{10}, SO_2 & NOx.

The results of ambient air quality monitoring during this monitoring period are given in **Table 2** and the results of fugitive emission monitoring are given in **Table 3** below:

Overall the ambient air concentrations of PM_{10}, $PM_{2.5}$, SO_2, NO_x and heavy meals were observed to be well within the limits of concentrations promulgated by CPCB, New Delhi.

National Ambient Air Quality Standard:
PM_{10} (RPM): 100 µg/m^3,
$PM_{2.5}$: 60 µg/m^3
SO_2: 80 µg/m^3 and
NO_x: 80 µg/m^3

Table 2: Ambient Air Quality Monitoring Results for this Monitoring Period

[Report For The Month of October-November-December-2017 (Qtrly)]

(24 hrs Sampling)

SL No.	Sampling Location	Sampling Date	PM_{10} µg /m^3	$PM_{2.5}$ µg /m^3	SO_2 µg /m^3	NO_x µg /m^3
Core Zone						
1.	**Near Entry Gate**	07.11.2017	65.8	31.2	13.5	29.1
2.	**Near Security Quarter**	07.11.2017	60.1	22.4	9.6	21.3
3.	**Near Gate No.2**	07.11.2017	69.3	25.8	15.7	34.1
4.	**Near Bag House**	07.11.2017	65.3	26.6	10.8	22.5
CPCB Standards			**100 (24hrs)**	**60 (24hrs)**	**80 (24hrs)**	**80 (24hrs)**

SL No.	Sampling Location	Sampling Date	Pb µg /m^3	As ng/m^3	Ni ng/m^3	Cd µg /m^3	Cr µg /m^3
Core Zone							
1.	**Near Entry Gate**	07.11.2017	0.041	ND	0.067	ND	ND
2.	**Near Security Quarter**	07.11.2017	0.033	ND	0.056	ND	ND
3.	**Near Gate No.2**	07.11.2017	0.051	ND	0.063	ND	ND
4.	**Near Bag House**	07.11.2017	0.032	ND	0.059	ND	ND
CPCB Standards			**1.0 (24 hrs)**	**6.0 (annual)**	**20.0 (annual)**	**---**	**---**

(24 Hrs Sampling)

SL No.	Sampling Location	Sampling Date	PM_{10} µg /m^3	$PM_{2.5}$ µg /m^3	SO_2 µg /m^3	NO_x µg /m^3
Buffer Zone						
1.	**Biraghani Village**	08.11.2017	57.5	20.3	10.7	30.6
2.	**Balod Village**	08.11.2017	51.4	18.7	11.4	26.8
3.	**Chotiyabhatha Village**	08.11.2017	61.5	26.6	9.1	27.8
4.	**Thadgabara Village**	08.11.2017	62.3	21.3	7.9	19.6
CPCB Standards			**100** (24hrs)	**60 (24hrs)**	**80 (24hrs)**	**80 (24hrs)**

SL No.	Sampling Location	Sampling Date	Pb µg /m^3	As ng/m^3	Ni ng/m^3	Cd µg /m^3	Cr µg /m^3
Buffer Zone							
1.	**Birgahani Village**	08.11.2017	ND	ND	ND	ND	ND
2.	**Balod Village**	08.11.2017	ND	ND	ND	ND	ND
3.	**Chotiyabhatha Village**	08.11.2017	ND	ND	ND	ND	ND
4.	**Thadgabara Village**	08.11.2017	ND	ND	ND	ND	ND
CPCB Standards			**1.0 (24 hrs)**	**6.0 (annual)**	**20.0 (annual)**	**---**	**---**

[Report For The Month of January-February-March-2018 (Qtrly)]

(24 hrs Sampling)

SL No.	Sampling Location	Sampling Date	PM_{10} µg /m^3	$PM_{2.5}$ µg /m^3	SO_2 µg /m^3	NO_x µg /m^3
Core Zone						
1.	**Near Entry Gate**	22.03.2018	64.9	28.4	11.3	27.1
2.	**Near Security Quarter**	22.03.2018	53.8	18.2	8.4	19.6
3.	**Near Gate No.2**	22.03.2018	67.1	26.8	12.1	31.7
4.	**Near Bag House**	22.03.2018	58.3	23.9	9.2	18.4
CPCB Standards			**100 (24hrs)**	**60 (24hrs)**	**80 (24hrs)**	**80 (24hrs)**

SL No.	Sampling Location	Sampling Date	Pb µg /m^3	As ng/m^3	Ni ng/m^3	Cd µg /m^3	Cr µg /m^3
Core Zone							
1.	**Near Entry Gate**	22.03.2018	0.034	ND	0.062	ND	ND
2.	**Near Security Quarter**	22.03.2018	0.026	ND	0.049	ND	ND
3.	**Near Gate No.2**	22.03.2018	0.047	ND	0.068	ND	ND
4.	**Near Bag House**	22.03.2018	0.024	ND	0.052	ND	ND
CPCB Standards			**1.0 (24 hrs)**	**6.0 (annual)**	**20.0 (annual)**	**---**	**---**

(24 Hrs Sampling)

SL No.	Sampling Location	Sampling Date	PM_{10} µg /m^3	$PM_{2.5}$ µg /m^3	SO_2 µg /m^3	NO_x µg /m^3
Buffer Zone						
1.	**Biraghani Village**	23.03.2018	53.8	17.2	8.2	27.4
2.	**Balod Village**	23.03.2018	47.3	16.9	7.4	21.7
3.	**Chotiyabhatha Village**	23.03.2018	57.1	23.8	8.7	26.9
4.	**Thadgabara Village**	23.03.2018	51.7	17.1	6.1	18.3
CPCB Standards			**100 (24hrs)**	**60 (24hrs)**	**80 (24hrs)**	**80 (24hrs)**

SL No.	Sampling Location	Sampling Date	Pb µg /m^3	As ng/m^3	Ni ng/m^3	Cd µg /m^3	Cr µg /m^3
Buffer Zone							
1.	**Birgahani Village**	23.03.2018	ND	ND	ND	ND	ND
2.	**Balod Village**	23.03.2018	ND	ND	ND	ND	ND
3.	**Chotiyabhatha Village**	23.03.2018	ND	ND	ND	ND	ND
4.	**Thadgabara Village**	23.03.2018	ND	ND	ND	ND	ND
CPCB Standards			**1.0 (24 hrs)**	**6.0 (annual)**	**20.0 (annual)**	**---**	**---**

Table 3: Fugitive Dust Emission Monitoring Result

[Report For The Month of October-November-December-2017 (Qtrly)]

SL. NO.	Sampling Location	Sampling Date	SPM µg /m³	RSPM µg /m³	SO2 µg /m³	NOx µg /m³
1.	Near Rotary Breaker	07.11.2017	258	69.7	11.4	18.7
2.	Near Bag Filter	08.11.2017	287	80.1	13.6	25.8
CPCB Standards			---	---	---	---

[Report For The Month of January-February-March-2018 (Qtrly)]

SL. NO.	Sampling Location	Sampling Date	SPM µg /m³	RSPM µg /m³	SO2 µg /m³	NOx µg /m³
1.	Near Rotary Breaker	22.03.2018	241	67.1	9.7	16.8
2.	Near Bag Filter	23.03.2018	276	74.9	11.8	23.6
CPCB Standards			---	---	---	---

TEST RESULTS

[Report For The Month of October-November-December- 2017 (Qtrly)] (Near Main Gate)

Sr. No	Test Parameter	Measurement Unit	Test Method	As per IS 10500 : 2012 (Drinking Water - Specification)		Test Result
				Acceptable Limit	*Permissible Limit	
1.	pH value	-	IS 3025 (Part 11)	6.5 to 8.5	No relaxation	7.62 at 25^0C
2.	Electrical Conductivity at 25^0C	µs/cm	IS 3025 (Part 14)	-	-	518.9
3.	Turbidity	NTU	IS 3025 (Part 10)	1	5	0.6
4.	Apparent colour	Hazen units	IS 3025 (Part 4)	5	15	1
5.	Odour	-	IS 3025 (Part 5)	Agreeable	Agreeable	Agreeable
6.	Taste	-	IS 3025 (Part 8)	Agreeable	Agreeable	Agreeable
7.	Iron (as Fe)	mg / l	IS 3025 (Part 2)	1.0	No relaxation	0.17
8.	Total dissolved solids (TDS)	mg / l	IS 3025 (Part 16)	500	2000	292
9.	Fluoride (as F)	mg / l	IS 3025 (Part 60)	1.0	1.5	0.23
10.	Cyanide (as CN)	mg / l	IS 3025 (Part 27)	0.05	No relaxation	< 0.005
11.	Chlorides (as Cl)	mg / l	IS 3025 (Part 32)	250	1000	36.22
12.	Residual chlorine	mg/l	IS 3025 (Part 26)	0.2	1	< 0.1
13.	Total alkalinity (as $CaCO_3$)	mg / l	IS 3025 (Part 23)	200	600	121.96
14.	Total hardness (as $CaCO_3$)	mg / l	IS 3025 (Part 21)	200	600	136.76
15.	Calcium (as Ca)	mg / l	IS 3025 (Part 40)	75	200	43.01
16.	Magnesium (as Mg)	mg / l	IS 3025 (Part 46)	30	100	7.12
17.	Sulphate (as SO_4)	mg / l	IS 3025 (Part 24)	200	400	18.64
18.	Nitrates (as NO_3)	mg / l	APHA Method	45	No relaxation	< 2
19.	Copper (as Cu)	mg / l	IS 3025 (Part 2)	0.05	1.5	< 0.03
20.	Manganese (as Mn)	mg / l	IS 3025 (Part 2)	0.1	0.3	< 0.05
21.	Mercury (as Hg)	mg / l	IS 3025 (Part 2)	0.001	No relaxation	< 0.0005
22.	Cadmium (as Cd)	mg / l	IS 3025 (Part 2)	0.003	No relaxation	< 0.001
23.	Selenium (as Se)	mg / l	IS 3025 (Part 2)	0.01	No relaxation	< 0.001
24.	Arsenic (as As)	mg / l	IS 3025 (Part 2)	0.01	0.05	< 0.01
25.	Aluminium (as Al)	mg / l	IS 3025 (Part 2)	0.03	0.2	< 0.005
26.	Lead (as Pb)	mg / l	IS 3025 (Part 2)	0.01	No relaxation	< 0.005
27.	Zinc (as Zn)	mg / l	IS 3025 (Part 2)	5	15	< 0.1
28.	Total Chromium (as Cr)	mg / l	IS 3025 (Part 2)	0.05	No relaxation	< 0.03
29.	Boron (as B)	mg / l	IS 3025 (Part 2)	0.5	1.0	< 0.1
30.	Mineral Oil	mg / l	IS 3025 (Part 39)	0.5	No relaxation	< 0.001
31.	Phenolic compounds (as C_6H_5OH)	mg / l	IS 3025 (Part 43)	0.001	0.002	< 0.01
32.	Anionic detergents	mg / l	IS 13428 (Annex K)	0.2	1.0	< 0.001
33.	Polyneuclear aromatic hydrocarbon (PAH)	µg/l	USEPA : 550	0.1	No relaxation	< 0.03
34.	Total coliform	MPN/100 ml	IS 1622	---	---	Absent

TEST RESULTS

[Report For The Month of October-November-December- 2017 (Qtrly)]
(Near Security Quarter)

Sr. No.	Test Parameter	Measurement Unit	Test Method	As per IS 10500 : 2012 (Drinking Water - Specification)		Test Result
				Acceptable Limit	*Permissible Limit	
1.	pH value	-	IS 3025 (Part 11)	6.5 to 8.5	No relaxation	7.21at 25^{O}C
2.	Electrical Conductivity at 25^{0}C	µs/cm	IS 3025 (Part 14)	-	-	417.24
3.	Turbidity	NTU	IS 3025 (Part 10)	1	5	0.6
4.	Total dissolved solids (TDS)	mg / l	IS 3025 (Part 16)	500	2000	234
5.	Magnesium (as Mg)	mg / l	IS 3025 (Part 46)	30	100	7.02
6.	Total hardness (as $CaCO_3$)	mg / l	IS 3025 (Part 21)	200	600	167.34
7.	Total alkalinity (as $CaCO_3$)	mg / l	IS 3025 (Part 23)	200	600	116.49
8.	Calcium (as Ca)	mg / l	IS 3025 (Part 40)	75	200	55.41
9.	Chlorides (as Cl)	mg / l	IS 3025 (Part 32)	250	1000	104.56
10.	Sulphate (as SO_4)	mg / l	IS 3025 (Part 24)	200	400	17.42
11.	Fluoride (as F)	mg / l	IS 3025 (Part 60)	1.0	1.5	0.14
12.	Iron (as Fe)	mg / l	IS 3025 (Part 2)	1.0	No relaxation	0.18
13.	Nitrates (as NO_3)	mg / l	APHA Method	45	No relaxation	< 2
14.	Total coliform	MPN/100 ml	IS 1622	---	---	< 2

TEST RESULTS

[Report For The Month of January-February-March-2018 (Qtrly)] (Near Main Gate)

Sr. No	Test Parameter	Measurement Unit	Test Method	As per IS 10500 : 2012 (Drinking Water - Specification)		Test Result
				Acceptable Limit	*Permissible Limit	
1.	pH value	-	IS 3025 (Part 11)	6.5 to 8.5	No relaxation	7.61 at 25^{0}C
2.	Electrical Conductivity at 25^{0}C	µs/cm	IS 3025 (Part 14)	-	-	518.3
3.	Turbidity	NTU	IS 3025 (Part 10)	1	5	0.7
4.	Apparent colour	Hazen units	IS 3025 (Part 4)	5	15	1
5.	Odour	-	IS 3025 (Part 5)	Agreeable	Agreeable	Agreeable
6.	Taste	-	IS 3025 (Part 8)	Agreeable	Agreeable	Agreeable
7.	Iron (as Fe)	mg / l	IS 3025 (Part 2)	1.0	No relaxation	0.17
8.	Total dissolved solids (TDS)	mg / l	IS 3025 (Part 16)	500	2000	290
9.	Fluoride (as F)	mg / l	IS 3025 (Part 60)	1.0	1.5	0.21
10.	Cyanide (as CN)	mg / l	IS 3025 (Part 27)	0.05	No relaxation	< 0.005
11.	Chlorides (as Cl)	mg / l	IS 3025 (Part 32)	250	1000	36.94
12.	Residual chlorine	mg/l	IS 3025 (Part 26)	0.2	1	< 0.1
13.	Total alkalinity (as $CaCO_3$)	mg / l	IS 3025 (Part 23)	200	600	121.58
14.	Total hardness (as $CaCO_3$)	mg / l	IS 3025 (Part 21)	200	600	138.17

15.	Calcium (as Ca)	mg / l	IS 3025 (Part 40)	75	200	43.82
16.	Magnesium (as Mg)	mg / l	IS 3025 (Part 46)	30	100	6.97
17.	Sulphate (as SO_4)	mg / l	IS 3025 (Part 24)	200	400	18.24
18.	Nitrates (as NO_3)	mg / l	APHA Method	45	No relaxation	< 2
19.	Copper (as Cu)	mg / l	IS 3025 (Part 2)	0.05	1.5	< 0.03
20.	Manganese (as Mn)	mg / l	IS 3025 (Part 2)	0.1	0.3	< 0.05
21.	Mercury (as Hg)	mg / l	IS 3025 (Part 2)	0.001	No relaxation	< 0.0005
22.	Cadmium (as Cd)	mg / l	IS 3025 (Part 2)	0.003	No relaxation	< 0.001
23.	Selenium (as Se)	mg / l	IS 3025 (Part 2)	0.01	No relaxation	< 0.001
24.	Arsenic (as As)	mg / l	IS 3025 (Part 2)	0.01	0.05	< 0.01
25.	Aluminium (as Al)	mg / l	IS 3025 (Part 2)	0.03	0.2	< 0.005
26.	Lead (as Pb)	mg / l	IS 3025 (Part 2)	0.01	No relaxation	< 0.005
27.	Zinc (as Zn)	mg / l	IS 3025 (Part 2)	5	15	< 0.1
28.	Total Chromium (as Cr)	mg / l	IS 3025 (Part 2)	0.05	No relaxation	< 0.03
29.	Boron (as B)	mg / l	IS 3025 (Part 2)	0.5	1.0	< 0.1
30.	Mineral Oil	mg / l	IS 3025 (Part 39)	0.5	No relaxation	< 0.001
31.	Phenolic compounds (as C_6H_5OH)	mg / l	IS 3025 (Part 43)	0.001	0.002	< 0.001
32.	Anionic detergents	mg / l	IS 13428 (Annex K)	0.2	1.0	< 0.001
33.	Polyneuclear aromatic hydrocarbon (PAH)	µg/l	USEPA : 550	0.1	No relaxation	< 0.03
34.	Total coliform	MPN/100 ml	IS 1622	---	---	Absent

TEST RESULTS

[Report For The Month of January-February-March-2018 (Qtrly)] (Near Security Quarter)

Sr. No.	Test Parameter	Measurement Unit	Test Method	As per IS 10500 : 2012 (Drinking Water - Specification)		Test Result
				Acceptable Limit	*Permissible Limit	
1.	pH value	-	IS 3025 (Part 11)	6.5 to 8.5	No relaxation	7.26 at 25^{0}C
2.	Electrical Conductivity at 25^{0}C	µs/cm	IS 3025 (Part 14)	-	-	416.28
3.	Turbidity	NTU	IS 3025 (Part 10)	1	5	0.4
4.	Total dissolved solids (TDS)	mg / l	IS 3025 (Part 16)	500	2000	233
5.	Magnesium (as Mg)	mg / l	IS 3025 (Part 46)	30	100	6.84
6.	Total hardness (as $CaCO_3$)	mg / l	IS 3025 (Part 21)	200	600	170.44
7.	Total alkalinity (as $CaCO_3$)	mg / l	IS 3025 (Part 23)	200	600	116.52
8.	Calcium (as Ca)	mg / l	IS 3025 (Part 40)	75	200	56.94
9.	Chlorides (as Cl)	mg / l	IS 3025 (Part 32)	250	1000	102.26
10.	Sulphate (as SO_4)	mg / l	IS 3025 (Part 24)	200	400	16.59
11.	Fluoride (as F)	mg / l	IS 3025 (Part 60)	1.0	1.5	0.18
12.	Iron (as Fe)	mg / l	IS 3025 (Part 2)	1.0	No relaxation	0.14
13.	Nitrates (as NO_3)	mg / l	APHA Method	45	No relaxation	< 2
14.	Total coliform	MPN/100 ml	IS 1622	---	---	< 2