

SUMMARY ON ENVIRONMENTAL IMPACT ASSESSMENT REPORT

OF

Phil Coal Beneficiation Pvt. Ltd.

[Proposed Change in Technology Cum Expansion of Existing 0.96 MTPA (DRY Type) Coal Washery
to 2.5 MTPA (Wet type) in existing plant premises]

at

Khasra Nos. 261/7 Ga, 261/8, 261/9, 261/22, 306/1 Ka, 306/1 Kha, 306/1 Ga, 306/2, 306/3,
306/4, 306/5, 306/6

Tenda Nawapara Village, Gharghoda Tehsil
Raigarh District, Chhattisgarh.

Submitted to

CHHATTISGARH ENVIRONMENT CONSERVATION BOARD
Raipur, Chhattisgarh

1.0 PROJECT DESCRIPTION

Phil Coal Beneficiation Pvt. Ltd. is an existing 0.96 MTPA Dry type Coal Washery located at Tenda Nawapara Village, Gharghoda Tehsil, Raigarh District, Chhattisgarh. Existing plant has obtained Environment Clearance from SEIAA – CG vide letter no. 1092/SEIAA-CG/EC/Coal Wash/RGH/80/09 Raipur Dt. 7th August 2014. Accordingly obtained Consent to Establishment (CTE) from Chhattisgarh Environment Conservation Board (CECB) vide no. 4255/TS/CECB/2014 Raipur dt. 20th October 2014. Subsequently obtained Consent to Operate (CTO) from CECB and same is valid till 31st October 2024.

Now company proposes for change in technology & expansion of existing 0.96 MTPA Dry type Coal Washery to 2.5 MTPA (Wet type) Heavy Media Cyclone type Coal Washery) in the existing plant premises in Khasra numbers 261/7 Ga, 261/8, 261/9, 261/22, 306/1 Ka, 306/1 Kha, 306/1 Ga, 306/2, 306/3, 306/4, 306/5, 306/6 in Tenda Nawapara Village, Gharghoda Tehsil Raigarh District, Chhattisgarh.

Total land available for the existing plant is 10.06 Ha Ha. (24.856 acres). Total land is in possession of the management. Proposed expansion will be taken up in the Existing plant premises only. No additional Land envisaged for expansion. The project cost envisaged for the proposed expansion project is Rs. 20.0 Crores.

As per the Ministry of Environment, Forest & Climate Change, New Delhi notification, dated 14th September, 2006 and its subsequent amendments, coal washery above 1 MTPA capacity has been classified under Category 'A'. The Ministry of Environment, Forest & Climate Change (MOEF&CC), New Delhi has accorded Terms of Reference (TOR) for the proposed expansion project vide File no.IA. J-11015 / 74/2021 – IA-II (M), dated 01st November 2021. The Draft EIA Report has been prepared by incorporating the TOR stipulated by MOEF&CC.

Pioneer Enviro Laboratories & Consultants Private Limited, Hyderabad, which is accredited by NABET, Quality Council of India, vide certificate No. NABET/ EIA/ 1922/ RA 0149, for preparing EIA report for coal washery, have prepared Environmental Impact Assessment (EIA) report for the proposed expansion project by incorporating the TOR approved by Ministry of Environment, Forest & Climate Change, New Delhi. The report contains detailed description of the following:

- Characterization of status of environment with in an area of 10 km radius from the plant for major environmental components including air, water, noise, soil, flora, fauna and socio-economic environment.

- Assessment of air emissions, liquid waste and solid waste from the proposed expansion project along with the noise level assessment.
- Environmental Management Plan comprising of emission control measures proposed to be adopted in the proposed project, solid waste management, Greenbelt development, etc.
- Post Project Environmental Monitoring & Budget for Environmental Protection Measures

1.1 ENVIRONMENTAL SETTING WITHIN 10 Km. RADIUS OF THE PLANT SITE

The following is the environmental setting within the 10 Km. radius of the plant site:

Table No. 1.1: Environment Setting within 10 Km. radius of the site

S.No.	Salient Features / Environmental features	Distance w.r.t. site / Remarks
1.	Type of Land	Existing Plant 10.06 Ha Ha. (24.856 acres). is being used for Industrial purpose
2.	National Park/ Wild life sanctuary / Biosphere reserve / Tiger Reserve / Elephant Corridor / migratory routes for Birds	There are no National Park/ Wild life sanctuary / Biosphere reserve / Tiger Reserve / migratory routes for Birds Movement of Elephants is observed within 10 Kms. radius of the plant, as per the secondary source.
3.	Historical places / Places of Tourist importance / Archeological sites	Nil within 10 Km radius
4.	Industrial areas / cluster (MoEF&CC Office Memorandum dated 13th January 2010) and its subsequent amendments	Nil within 10 Km radius
5.	Defence Installations	Nil within 10 Km radius
6.	Nearest village	Tenda Nawapara – 0.6 Km. (SW)
7.	No. of Villages in the Study Area	42 nos.
8.	Forests	Marpahar RF, Bojia RF, Dhumapahar RF, Lamikhair RF, Lotan RF, Suhai RF, Rabo Dongri RF, Suhai RF, Mar Pahar RF, Katangdi PF, Chhindpani PF, Nawagarh PF are present within

S.No.	Salient Features / Environmental features	Distance w.r.t. site / Remarks
		10 Km. radius of the project site.
9.	Water body	Kurket River – 3.6 Kms. Barkha Nallah – 1.7 Kms. Tenda Nallah – 2.5 Kms.
10.	Nearest Highway	Gharghoda to Chhal Road (Major District Road – 0.15 Kms. State Highway (Ambikapur – Gharghoda) – 8.5 Kms.
11.	Nearest Railway Station	Nil with 10 Km radius
12.	Nearest Port facility	Nil with 10 Km radius
13.	Nearest Airport /Airstrip	Nil with 10 Km radius
14.	Nearest Interstate Boundary	Nil within 10 Km. radius
15.	R & R	There are no habitations in the total land. Envisaged for the project. Hence, no rehabilitation and resettlement is involved.
16.	Litigation / court case is pending against the proposed project / proposed site and or any direction passed by the court of law against the project	Nil

1.2 PLANT CONFIGURATION AND PRODUCTION CAPACITY

Phil Coal Beneficiation Pvt. Ltd has proposed coal washery with the following capacity.

Table No.1.2: EXISTING & PROPOSED UNITS, PRODUCTS & THEIR PRODUCTION CAPACITIES

S.No.	Unit	Existing Plant	Present Proposal	After Present Proposal
1	Coal Washery	0.96 MTPA (Dry type)	Change in technology cum expansion of existing 0.96 MTPA (Dry type) to 2.5 MTPA (Wet type)	2.5 MTPA (Wet type) Heavy Media Cyclone Coal Washery

Note: Present proposal involves removal of existing 0.96 MTPA Dry type Coal Washery and establishing 2.5 MTPA (Wet Type) Heavy Media Cyclone type Coal Washery in the existing plant premises by utilizing the facilities of existing plant.

1.3 RAW MATERIAL REQUIRMENT

The following will be the raw material requirement for the existing and proposed expansion project along with its source is given as below:

S.No.	Raw Material	Quantity (MTPA)	Source
1.	Raw Coal	2.5	Coal will be sourced from SECL mines Dipka, Gevra, Kusmunda and other mines of South Eastern Coalfield Limited (SECL).

1.2 Manufacturing Process

Coal washery comprises of coal crushing & screening and washing of coal to produce clean coal with ash content less than 34%. Wet type of coal washery is proposed as it will have lesser environmental problems compared to the dry type of washery and to suit to client's specific requirement of lower ash content. Closed loop water system is proposed in the process. Zero effluent discharge will be maintained in the proposed project.

The process consists of crushing of the ROM coal in a single toothed roll crusher. The crushed coal is then washed in Zig to produce clean coal and middling with the help of water stream and air pressure.

1.3 Water Requirement

Water required for existing plant is 33 KLD mainly for domestic purpose and greenbelt development and same is sourced form Ground Water source. Water required for proposed expansion will be 465 KLD, which consists of mainly for process, dust supression, greenbelt and domestic purpose and will be sourced form Kurket River. But total water requirement after recycling of water will be 425 KLD for expansion. NOC will be obtained from Central Ground Water

Authority for drawl of water from Kurket River. The following is the break-up of the water requirement for proposed project.

WATER REQUIREMENT

S.No	REQUIREMENT	QUANTITY (KLD)
1.	For Coal washery process	400
2.	For Dust Suppression	20
3.	For Greenbelt	40*
4.	For Domestic purpose	5
	Total	425
* -Recycled Water from process will be used for greenbelt, hence net water requite will be 425 KLD		

1.4 Waste Water Generation

No wastewater is being generated from the existing plant process, as there is no water utilisation for process. Only wastewater generation from existing plant sanitary waste water and same is being treated in the septic tank followed by soak pit.

Closed circuit water system will be adopted in the proposed expansion of coal washery also, hence no wastewater will be discharged outside the plant. Only wastewater generation will be sanitary wastewater and same will be treated in Septic tank following soak pit. Total sanitary generated after proposed expansion will be 4 KLD. The quantity of sanitary waste water expected will be 4 cum/day.

WASTE WATER GENERATION

S.No.	SOURCE	QUANTITY (KLD)
1	Sanitary wastewater	4
	Total	4

Wastewater Characteristics

The characteristics of sanitary waste water (untreated) will be as following:

PARAMETER	CONCENTRATION
pH	7.0 – 8.5
BOD	200 – 250 mg/l

COD	300 – 400 mg/l
TDS	800 – 900 mg/l

2.0 DESCRIPTION OF ENVIRONMENT

Base line data has been collected on ambient air quality, water quality, noise levels, flora and fauna and socio-economic details of people within 10 km radius of the plant.

2.1 Ambient air quality

Ambient air quality was monitored for PM_{2.5}, PM₁₀, SO₂, NO_x, CO, Arsenic, Lead and Silica at 8 stations including plant site during **15th October 2021 to 15th January 2022**. The following are the concentrations of various parameters at the monitoring stations:

Ambient Air Quality Summary

S.No.	Parameter		Concentration
1.	PM _{2.5}	:	21.5 to 38.2 µg/m ³
2.	PM ₁₀	:	35.9 to 63.7 µg/m ³
3.	SO ₂	:	7.8 to 15.9 µg/m ³
4.	NO _x	:	8.7 to 21.7 µg/m ³
5.	CO	:	604 to 1256 µg/m ³
6.	Pb	:	0.003 – 0.001 µg/m ³
7.	As	:	Less than 1.84 ng/m ³

2.2 Water Quality

2.2.1 Surface Water Quality

Kurket River (3.6 Kms.) & Barkha Nallah (1.7 Kms.) & Tenda Nallah (2.5 Kms.) are flowing at from the plant site. 2 samples from Kurket River & 1 (one) sample from Barkha Nallah & 1 (one) sample from Tenda Nallah has been collected. No other samples have been collected as there is no availability of water in the seasonal streams. Surface water samples have been collected and analyzed for various physico-chemical parameters. The analysis of samples shows that all the parameters are in accordance with BIS-2296 specifications.

2.2.2 Ground Water Quality

8 No. of ground water samples from open wells / bore wells were collected from the nearby villages to assess ground water quality impacts and analyzed for various Physico-Chemical parameters. The analysis of samples shows that all the parameters are in accordance with BIS: 10500 specifications.

2.3 Noise Levels

Noise levels were measured at 8 locations during day time & Night time. The noise levels at the monitoring stations are ranging from 41.35 dBA to 68.35 dBA.

3.0 ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

3.1 Prediction of impacts on air quality

The likely emissions from the proposed project are PM₁₀, SO₂, NO_x & CO. The predictions of Ground level concentrations have been carried out using Industrial Source Complex (ISC-3) model. Meteorological data such as wind direction, wind speed, max. and min. temperatures collected at the site have been used as input data to run the model.

The predicted max. Incremental rise in PM concentration (24 hourly) will be 0.17 µg/m³ at a distance of 500 m from the origin stack in the down wind direction over the baseline concentrations.

The predicted incremental rise in PM concentration due to the Vehicular emission will be 0.57 µg/m³.

Hence the total predicted incremental rise due to the emission from coal washery plant and due the vehicular emission will be $0.17 \mu\text{g}/\text{m}^3 + 0.57 \mu\text{g}/\text{m}^3 = 0.74 \mu\text{g}/\text{m}^3$

The predicted incremental rise in NO_x concentration due to the Vehicular emission will be 4.30 µg/m³.

The predicted incremental rise in CO concentration due to the Vehicular emission will be 2.72 µg/m³.

NET RESULTANT MAXIMUM CONCENTRATIONS DUE TO THE PROPOSED EXPANSION PROJECT

Item	PM	SO ₂	NO _x	CO
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	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)
Maximum average baseline conc. in the study area	63.7	15.9	21.7	1256
Maximum predicted incremental rise in concentration due to the proposed project	0.17	--	--	--
Maximum predicted incremental rise in concentration due to proposed project (Vehicular emissions)	0.57	--	4.30	2.72
Net resultant concentrations during operation of the plant	64.44	15.9	26.0	1258.72
National Ambient Air Quality Standards	100	80	80	2000

The predicted results show that the net resultant concentration (max. baseline conc. + max. incremental rise in conc.) of PM₁₀, SO₂, NO_x and CO will be well within the National Ambient Air Quality Standards after commissioning of proposed project. Hence there will not be any adverse impact on air environment due to the proposed project.

3.2 Prediction of impacts on noise quality

The major sources of noise generation in the proposed expansion project will be DG set & Crusher. The ambient noise levels will be within the standards prescribed by MoEF&CC vide notification dated 14-02-2000 under the Noise Pollution (Regulation & Control), Rules 2000 i.e. the noise levels will be less than 75 dBA during day time and less than 70 dBA during night time. Greenbelt will be developed to further attenuate the noise levels. Hence there will not be any adverse impact due to noise on population in surrounding areas due to the proposed project.

3.3 Prediction of impacts on Water Environment

There will be no effluent generation in the coal washery unit, as closed loop water system will be adopted. Sanitary waste water will be treated in septic tank followed by soak pit. The water required for the proposed project will be met from surface water source. Application has been submitted to CGWA for Water drawl permission from surface Water. Hence there will not be any adverse impact on environment due to the proposed project.

3.4 Prediction of Impacts on Land Environment

All the required air pollution control systems will be provided to comply with CPCB / CECB norms. All solid wastes will be disposed / utilized as per CPCB / CECB norms. Greenbelt will be developed

as per guidelines. Hence there will not be any adverse impact on land environment due to the proposed project.

3.5 Socio - Economic Environment

There will be further upliftment in Socio Economic status of the people in the area. Hence, there will be further development of the area due to the proposed expansion project. Due to this the economic conditions, the educational and medical standards of the people living in the study area will certainly move upwards which will result in overall economic development, improvement in general aesthetic environment and increase in business opportunities.

4.0 ENVIRONMENTAL MONITORING PROGRAMME

Post project monitoring will be conducted as per the guidelines of CECB and MoEF&CC are tabulated below:

MONITORING SCHEDULE FOR ENVIRONMENTAL PARAMETERS

S.No.	Particulars	Frequency of Monitoring	Duration of sampling	Parameters required to be monitored
1. Water & Waste water quality				
A.	Water quality in the area	Once in a month	Grab sampling	As per IS: 10500
2. Air Quality				
A.	Stack Monitoring	CEMS (all Stacks) Once in a month	--	PM PM, SO ₂ & NO _x
B.	Ambient Air quality	CAAQMS Quarterly in a Month	Continuously 24 hours	PM PM _{2.5} , PM ₁₀ , SO ₂ , NO _x & CO
C.	Fugitive emissions	Quarterly in a Month	8 hours	PM
3. Meteorological Data				
	Meteorological data to be monitored at	Daily	Continuous monitoring	Temperature, Relative Humidity, rainfall,

S.No.	Particulars	Frequency of Monitoring	Duration of sampling	Parameters required to be monitored
	the plant.			wind direction & wind speed.
4. Noise level monitoring				
	Ambient Noise levels	Once in a month (Hourly)	Continuous for 24 hours with 1-hour interval	Noise levels

5.0 ADDITIONAL STUDIES

Existing plant is located at Tenda Nawapara Village, Gharghoda Tehsil, Raigarh District, Chhattisgarh. Total land available with company is 10.06 Ha Ha. (24.856 acres). The proposed expansion project will be taken in the existing plant premises. No Rehabilitation and Resettlement is involved in the proposed expansion project. Hence, no R & R study has been carried out.

6.0 PROJECT BENEFITS

With the establishment of the proposed expansion project employment potential will increase. Land prices in the area will increase. The economic status of the people in the area will improve due to the proposed expansion project. Periodic medical checkups will be carried out. Top priority will be given to locals in employment. A separate budget will be allocated for Social welfare measures after completion of Public Hearing.

7.0 ENVIRONMENT MANAGEMENT PLAN

7.1 Air Environment

The following are air emission control systems proposed in the proposed expansion project:

S.No.	Stack attached	Control Equipment	PM emission
1.	Coal Crusher	Dust Extraction systems with Bag filters	< 50 mg/Nm ³

The main sources of dust pollution are raw material unloading areas, crushing operations of raw materials and their transfer points. Fugitive dust emissions are likely in the unloading areas, material transfer point, screening area etc. Fugitive emission in the material unloading area will be avoided by providing dust suppression system. Fugitive emission from material unloading

operations, material transfer points will be controlled fully with total enclosure and all the transfer emission will be connected with extractor inlet point and will pass through a high efficiency Bag Filter before discharging into the atmosphere. Fugitive emissions will be regularly monitored in the plant area and CPCB stipulations regarding fugitive emission control and monitoring will be strictly followed.

7.2 Water Environment

There will not be any process waste water from the coal washery unit as closed loop water system will be adopted. The only waste water generation will be sanitary waste water of 4.0 cum/day and will be treated in septic tank followed by soak pit. Zero effluent discharge will be maintained in the proposed project.

7.3 Noise Environment

The major sources of noise in the proposed project will be DG set & crusher. All the machinery will be manufactured in accordance with MoEF&CC norms on Noise levels. The employees working near the noise generating sources will be provided with earplugs. The extensive greenbelt development proposed within the plant premises will help in attenuating the noise levels further. Noise barriers in the form of trees are recommended to be grown around administrative block and other utility units.

7.4 Land Environment

There will not be any process waste water from the coal washery unit as closed loop water system will be adopted. All the required Air emission control systems will be installed and operated to comply with CECB norms. Washery rejects will be given to reject based power plants. Extensive greenbelt will be developed in the plant premises. Desirable beautification and landscaping practices will be followed. Hence there will not be any impact due to the proposed project.

Solid waste generation and disposal

S. NO.	TYPE OF SOLID WASTE	Existing (MTPA)	Proposed Expansion (MTPA)	After Proposed change in technology (IN MTPA)	DISPOSAL PROPOSED
1	Washery rejects	0.096	0.5	0.5 MTPA	Will be given to reject based power plant of M/s. Prakash

					Industries Ltd. , Champa
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7.5 Greenbelt Development

Greenbelt has been developed in the existing plant. Out of total 24.856 acres of land, 8.253 acres (more than 1/3rd of total) of land was developed with greenbelt.

7.6 Cost for Environment Protection

Capital Cost for Environment Protection for proposed expansion project : Rs. 160.0 Lakhs

Recurring Cost per annum for Environmental protection for expansion project : Rs. 18.0 Lakhs

7.7 Implementation of CREP Recommendations

All the CREP recommendations will be strictly followed in the proposed coal washery plant.
