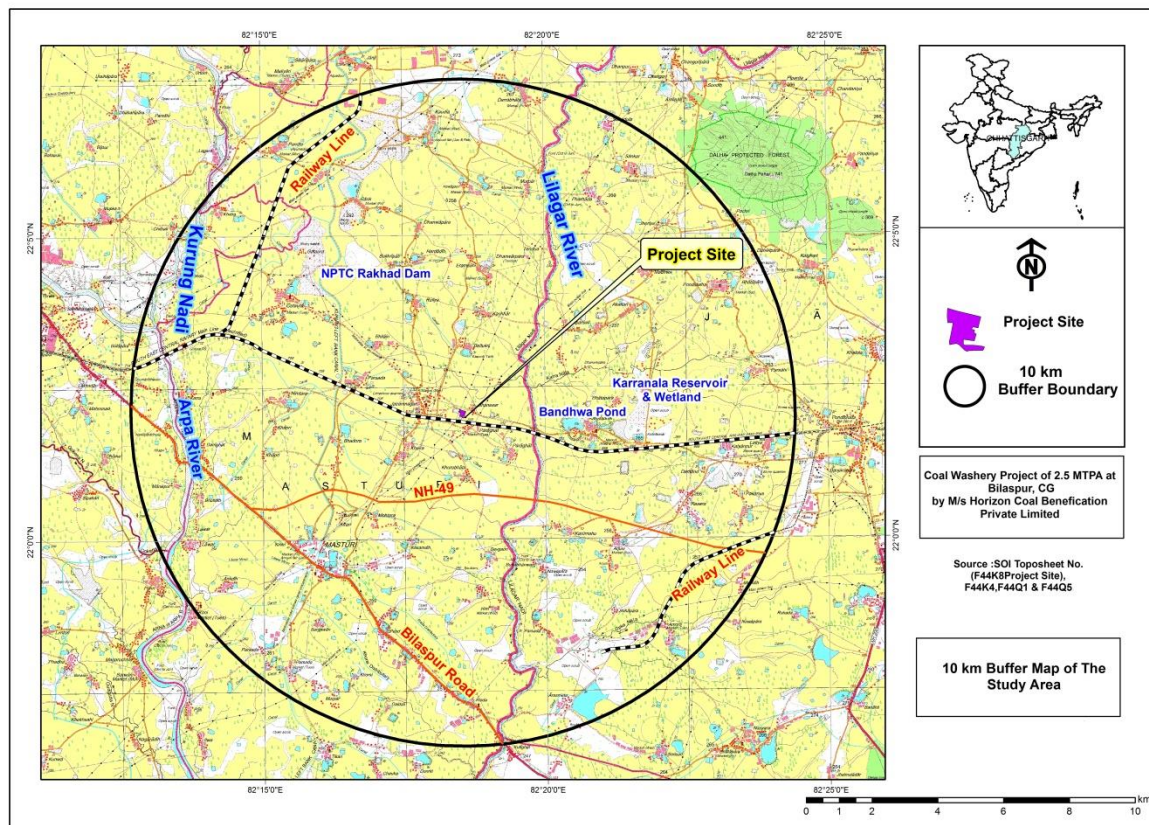


SUMMARY OF ENVIRONMENTAL IMPACT ASSESSMENT REPORT FOR PUBLIC HEARING

WET TYPE COAL WASHERY PROJECT CAPACITY = 2.5 Million Tons Per Annum

At
Village-Bhaneshar, Tehsil-Masturi, District -Bilaspur,
Chhattisgarh.



By
M/s Horizon Coal Benefication Private Limited

July-2022

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1.0 PROJECT DESCRIPTION

M/s Horizon Coal Beneficiation Private Limited, decided to install coal washery of capacity 2.5 MTPA. The project site is located at the distance of about 2.4 km towards South from NH-49 (Bilaspur-Champa-Raigarh). The nearest railway station is Jayramnagar which is located at about 1.1 km in West direction and nearest Air Port is Bilasa Devi Kevat Airport, Bilaspur, which is situated at about 20 km in WSW. Swami Vivekananda International Airport, Raipur is situated at about 113.0 km in SW. There is no streams or nalla inside the plant area. There is no village or human settlement inside the plant area. No National Park, wildlife sanctuary, tiger reserve, elephant reserve, migratory corridors of wild animals falls within 10 km of the plant area.

Application was submitted for TOR vide proposal no. IA/CG/CMIN/248029/2021 dated 28th December, 2021. The project was considered in Expert Appraisal Committee (EAC) of Coal Mining Projects, MOEF&CC, New Delhi in its 25th meeting held on 19th January, 2022. In the meeting EAC recommended Terms of Reference (TOR) for 2.5 MTPA Capacity Wet type coal washery project based on Heavy Media Cyclone in an area of 3.598 ha., vide File No. IA-J-11015/112/2021-IA-II(M) dated 14th February, 2022. Draft EIA report is prepared and is being submitted to CGPCB to conduct public hearing. Suggestions received during the public consultation process will be incorporated in the final EIA Report. Final EIA Report will be submitted to MOEF&CC for appraisal.

The proposed project activity falls under the category of "Coal Washeries" and categorized as "Category-A" under project activity 2 (a) of EIA Notification 2006 & its amendment till date.

The overall estimated project cost for the proposed unit is 2,500 Lakh and Total available land is 3.598ha.

There will be employment of 75 people during the operation phase of the project. Which include manager, supervisor, skilled and unskilled workers, etc.

Water required for the Washery will be for washing, dust suppression and domestic purpose. Coal washery will be done using a closed water circuit where water after washing will be treated and recycled for coal washing. Only make up water will be added in the

water circuit to compensate the water lost during washing. Water requirement is estimated to be 490 KLD.

2.5 MW electricity will be required for the plant; which will be supplied by Madhya Pradesh Power Generation Company Limited. 1 x 750 KVA DG set will be installed to meet the power requirement during emergency.

Coal washery comprises unloading of raw coal, storing, handling, crushing, screening and coal cleaning using water mixed with magnetite. The yield of clean coal will be 44%, middlings and fines will be 47% and rejects will be 9%. No wastewater will be discharged outside from the coal washery. Middlings and fines will be given to power plants located in nearby areas. Rejects will be disposed in abandoned coal mines. Dust from crusher and screens will be controlled using Bag Filters.

2.0 DESCRIPTION OF BASELINE ENVIRONMENT

Baseline data was generated during post monsoon season from 1st Oct. 2021 to 31st Dec., 2021. 10 km area around the site was considered as study area. Data was generated by following the standard/approved procedures of the Ministry of Environment Forests and Climate Change and the Central Pollution Control Board. Meteorological data on wind speed, wind direction, relative humidity and temperature was generated near the project site. Ambient air quality was generated at 8 locations. Noise levels were measured at 8 locations. Surface water quality was collected and analysed at 12 locations; Groundwater quality was analysed at 8 locations. Soil quality was analysed at 5 locations. Data on plants and animals present in the study area was collected from the District Forest Department. Data on landuse, demography, occupation pattern, cropping pattern, infrastructure facilities were collected from District Statistics Handbook and the Tehsil records.

During the study period minimum temperature was recorded 14°C and maximum temperature was recorded as 33°C, Humidity was recorded 44% and maximum Humidity was recorded as 66%. Dominant wind direction in the study period was from NE - SW during the study period. Average Wind Speed during study period is 2.4 m/s. During the study, wind blow was in the direction of NE-SW and wind speed range Calm to 6.48 m/s.

Based on the wind direction and wind speed it is interpreted that maximum dispersion of air pollutant will be in SW direction during the study period.

Summary of Ambient Air Quality

- $PM_{10} = 63.9 - 85.4 \mu\text{g}/\text{m}^3$
- $PM_{2.5} = 37.5-50.5 \mu\text{g}/\text{m}^3$
- $SO_2 = 10.2 -16.3 \mu\text{g}/\text{m}^3$
- $NO_2 = 16.3-27.6 \mu\text{g}/\text{m}^3$
- CO = of 470-1020 $\mu\text{g}/\text{m}^3$

The noise level study shows that the noise levels are meeting the acceptable norms. The noise levels in area varies from 52.6 to 68.2 dBA during day time and 39.5 to 62.6 dBA during the night day.

Summary of Ground Water Quality

- pH = 7.11 – 7.46
- Total dissolved solid = 541 to 631 mg/L
- Total hardness = 242-350 mg/L
- Total Alkalinity = 230-330 mg/L
- Iron = 0.5-0.8 mg/L
- Total coliform was not found in any samples

The groundwater quality meets the specification prescribed by BIS for drinking (IS:10500:2012)

Summary of Surface Water Quality

- pH = 7.42-7.89.
- TDS = 340-419 mg/L.
- DO = 5.4 – 6.5 mg/L.
- COD = 22-36 mg/L.
- BOD = 7.3-10.6 mg/L.

The pH value of the soil suspension varied from 7.11 to 7.46. In terms of soil pH the characteristic of the soil is moderately alkaline pH in nature. The Electrical conductivity

varied from 266 to 285 $\mu\text{Mohs/cm}$. The sodium absorption ratio of soil varied from 0.41 to 0.49. The Cation exchange capacity varied from 10 to 12.8 meq/100 gm. The loss on ignition in terms of organic matter varied from 0.70 to 0.81 %, it indicates that soils are medium in organic carbon status. The major nutrient such as Nitrogen, Phosphorus and Potassium level were varied from 54kg/ha to 66 kg/ha., 11 to 13kg/ha and 232.4 to 251.2 kg/ha respectively. The micronutrients such as copper, zinc, boron and iron are minimum and sufficient for plantation.

Flora and Fauna: No national park or wildlife sanctuary or biosphere reserve is present in the study area. No endangered species of flora and fauna is found in the study area. No migratory corridor of wild animals is present in the study area.

According to 2011 Population Census the study area has a total population of 160056 of which 50.7 percent are male and the remaining 49.3 percent are female.

The overall sex ratio in the study area has been worked out to 972 females per 1000 males. In the rural area it is 972 females per 1000 males and in urban area it is 973 females per 1000 males. This is much less when compared with the figure of 1001 in rural area but higher when compared with the figure of 956 in urban area for the State of Chhattisgarh.

3.0 ANTICIPATED ENVIRONMENTAL IMPACT & MITIGATION MEASURES

Coal Dust is the main pollutant generated during coal handling and crushing cum screening process. Water sprinklers will be used to reduce dust generation during coal handling. Wet dust suppression system will be installed to reduce the dust generation during coal crushing and screening. The crusher unit will be provided with dust extraction system and Bag Filter. All belt conveyors will be covered. Internal roads shall be concreted. Industrial vacuum cleaners will be used in workshops and other work areas. Mechanical road sweeping machines will be deployed for daily cleaning of all internal roads.

100% wastewater generated during coal washing will be treated in Effluent Treatment Plant. The water after treatment will be recycled for coal washing. Domestic sewage will be treated in Sewage Treatment Plant. Treated water will be used for horticulture development.

Low noise emitting plant and machinery will be selected. 33% land area will be developed as greenbelt. The noise level at plant boundary will be maintained below 70 dBA.

Coal washing will produce middlings, fines and rejects which will be sold to power plants in nearby districts.

The existing truck movement pattern will not undergo any significant change due to this coal washery. Fraction of the coal which is already transported by road from the coal mines of the region will be intercepted by the coal washery for washing. Appropriate traffic management plan will be implemented in consultation with the transport authorities.

4.0 ENVIRONMENTAL MONITORING PROGRAM

Environmental Management Cell (EMC) will be set up to undertake routine environmental monitoring. Monitoring will be done to ensure compliance with the prescribed laws and standards. The Head of EMC will report to the Plant Head. Qualified staff will be recruited in EMC. Environmental monitoring of ambient air, stack emission, fugitive dust emission, noise levels, groundwater quality, surface water quality and soils will be carried out as per norms. EMC will be responsible for the following functions:-

Regular monitoring of:-

- Measuring fugitive emissions, measuring PM_{2.5} and PM₁₀ in work environment and report any abnormalities for initiating corrective and preventive actions.
- Measuring the ambient air quality at upwind and downwind direction of crusher, at plant boundary (3 locations, 120 degree to each other).
- Checking the wastewater quality (inlet and outlet water wastewater treatment plant).
- Checking the ground water quality near the coal storage area, and surrounding villages.
- Noise monitoring at plant boundary, nearest habitation, near highway, and work areas.
- Development and maintenance of greenbelt and greenery within the plant boundary.

5.0 ADDITIONAL STUDIES

Adequate fire mitigation measures will be ensured for handling fire in coal yard. Disaster Management Plan has been prepared to take care of public health and safety during any accident.

CER activities and public hearing commitment will be over three year period. This amount will be spent for making classrooms in local schools, providing teaching aids, making community centres, develop drinking water facility in nearby villages, making rainwater harvesting structures like anicuts and check dams in the area, developing infrastructure facilities and equipment in primary health centres and as per public hearing.

6.0 PROJECT BENEFITS

Coal washing improves the quality of poor grade coal to higher grade coal. During washing, the waste materials like muck present in poor grade coal is removed. High grade coal is required for steel making and cement making. Use of high grade coal in thermal power plants improves the plant efficiency.

The demand for coal washery is growing due to following reasons:

- Depletion of good quality coal mines in India.
- Mechanised mining increases impurities in raw coal.
- Higher transportation cost makes it uneconomical to transport high ash coal.
- Meeting strict environmental requirement in regard to pollution prevention and control (by steel plants, power plants and cement plants).

About 100 people on daily wages basis will get employment during the construction stage. 100 persons will be employed during operational phase, in the skilled, semi-skilled and unskilled category. The preference will be given to local population for employment in the semi-skilled and unskilled category.

7.0 ENVIRONMENTAL MANAGEMENT PLAN

Environmental Management Plan for effective management of environmental impacts and ensuring overall protection of the environment through appropriate management

procedures has been developed. In order to implement the recommended mitigation measures and institutionalize the EMP, budgetary provision of Rs.310 capital expenditure has been made. Recurring annual expenditure will be Rs 91 lakhs of the capital expenditure.

Environment Management Cell (EMC) will ensure that all air pollution control device, effluent treatment plants and water re-circulating systems function effectively. EMC will also supervise disposal of spent oil and lubricants and used batteries to the authorized vendors. Plantation will be started during the construction phase by following the guidelines issued by the Central Pollution Control Board. Schemes for resource conservation (raw materials, water, etc), rainwater harvesting and social forestry development will be taken up by EMC. Regular environmental awareness programs for the employees will be conducted.

Workers will be periodically subjected to health check-up. EMC will ensure cleanliness and industrial hygiene in the plant. EMC in association with the safety department will undertake full review of the potential hazard scenarios during plant commissioning. The review will ensure enforcement of the proposed safeguards for pollution abatement, resource conservation, accident prevention and waste minimization. The implementation of EMP would ensure that all elements of project comply with relevant environmental legislation throughout its life cycle.

8.0 CONSULTANTS

The consultant engaged for the preparation of the EIA/EMP of Wet Type Coal Washery based on Heavy Media Cyclone is M/s GRC India Pvt Ltd. GRC India is an ISO 9001:2015, 14001:2015 & ISO 45000:2018 certified pioneer environmental consultancy in India. It has been accredited by National Accreditation Board of Education & Training (NABET), Quality Council of India (QCI), which is the highest accreditation authority in India. The GRC India Pvt Ltd established a modern R&D Laboratory, which is compliant to IS/ISO 9001:2015, IS/ISO 14001:2015 and IS/ISO 45001:2018. All the project sampling and analysis with various studies are done by the GRC labs. Laboratory received accreditation from NABL which has been renewed as per procedure (current certificate no. TC-7501 valid till

25.04.2023) and is recognized by MoEF&CC (Gazette Notification No. S.O. 388 (E) dated 10.02.2017).