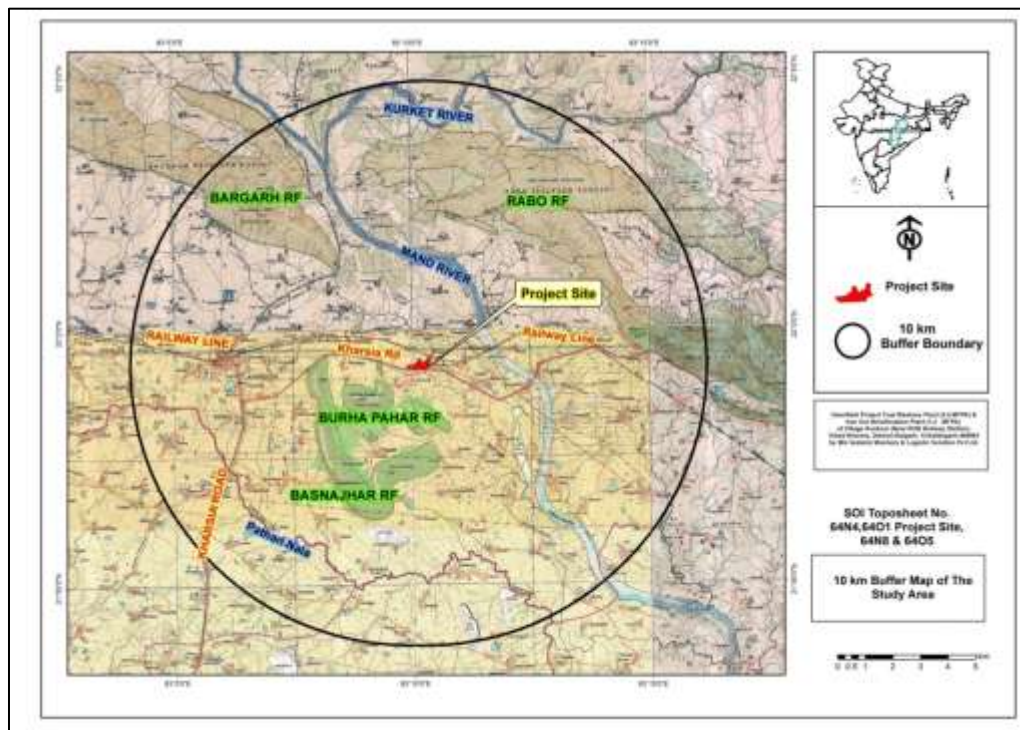


**SUMMARY OF ENVIRONMENTAL IMPACT ASSESSMENT REPORT
FOR PUBLIC HEARING**

**GREENFIELD PROJECT OF WET TYPE COAL WASHERY BASED ON
HEAVY MEDIA CYCLONE OF 2.6 MTPA & IRON ORE
BENEFICIATION PLANT OF 1.2 MTPA**

AT

**VILLAGE-KUNKUNI, TEHSIL- KHARSIA, DISTRICT- RAIGARH,
CHHATTISGARHAT**



By

**M/s Vedanta Washery & Logistic Solutions Private
Limited,**

June-2023

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1.0 PROJECT DESCRIPTION

M/s Vedanta Washery & Logistics Solutions Pvt. Ltd., proposed to install a coal washery of capacity 2.6 MTPA & Iron Ore Beneficiation Plant of 1.2 MTPA. The plant is located at Village- Kunkuni, Tehsil- Kharsia, District- Raigarh, Chhattisgarh. The project site is located adjacent to the Raigarh-Kharsia Road. Nearest city is Raigarh is at 22.74 km towards ESE. The nearest village is Kunkuni, which is located about 500 m towards SE direction. The nearest railway station is Robertson which is located at about 0.5 km in East direction and nearest Air Port is Veer Surendra Sai Airport, Jharsuguda, which is situated at about 90.5 km in East direction. The site and study area falls in the survey of India, Topo Sheet No- 64N4, 64O1 Project Site 64N8 & 64O5. Mand river is flowing about 2.8 km in East direction, and Kurket River is at distance of 8.6 km North East direction from the project boundary. There are no Wildlife sanctuaries & National Park within 10km radius.

Application was submitted for TOR vide proposal no. IA/CG/CMIN/416623/2023 dated 1st Feb, 2023. The project was considered in Expert Appraisal Committee (EAC) of Coal Mining Projects, MOEF&CC, New Delhi in its 40th meeting held on 17th February, 2023. In the meeting EAC recommended for issue of Terms of Reference (TOR) for 2.6 MTPA Capacity Wet type coal washery project based on Heavy Media Cyclone & for 1.2 MTPA Iron Ore Beneficiation Plant in an area of 19.865 ha (including Railway siding), vide File No. J-11015/117/2014-IA-II (M) dated 15th March, 2023.

Draft EIA/EMP has been prepared and is being submitted to Chhattisgarh Environment Conservation Board (CECB) to conduct public hearing as per the norms.

The proposed project falls under Category 'A' of Schedule 2 (a) and 2 (b) as per EIA Notification 2006 & its amendment till date

The total land available is 19.865 ha (including 4 ha Railway Siding). 15.630 ha land has been given on lease by Chhattisgarh State Industrial Development Corporation Limited and 4.235 ha land has been taken on lease basis from private owners.

A total number of 275 manpower will be needed for the proposed plant which includes manager, supervisor, skilled and unskilled workers, etc.

Water required for the Washery & Iron Ore plant will be for washing, dust suppression and domestic purpose. Closed water circuit will be followed and used water from washery will

be treated and recycled for use in process. Only make up water will be added in the water circuit to compensate the water lost during washing.

The estimated water requirement for the proposed plant is 1473KLD out of which 450 KLD for Coal Washery process and 1023 KLD for Iron Ore Beneficiation plant will be required. The source of water requirement will be approximately 70% from ground water and 30% from rain water harvesting pond of capacity 51000 KL.

Total power requirement for the project will be 5 MW will be source from Chhattisgarh State Electricity Board. During power failure, 500 kVA DG set will be operated for the emergency use.

Coal washery comprises unloading of raw coal, storing, handling, crushing, screening and coal cleaning using water mixed with magnetite.

Fugitive dust emissions are mainly generated from the Loading and unloading of raw iron ore and coal, materials storage, belt conveyor, transfer points, screening and vehicles movement.

Washed coal & beneficiated iron ore from the plant will be transported by road in covered trucks directly to the customer (or) by railway through using the facility of own operational railway siding.

PP also has operational private railway siding which can be used during the operation phase of the project for transportation of the finished product and raw material

No wastewater will be discharged outside from the premises. Rejects will be supplied to power plants located in nearby areas. Dust from crusher and screens will be controlled using Bag Filters with adequate stack height.

2.0 DESCRIPTION OF BASELINE ENVIRONMENT

Baseline data was generated during winter season from 1st December, 2022 to 28th February 2023. 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 analyzed at 8 locations; Groundwater quality was analyzed at 8 locations. Soil quality was analyzed 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 22°C and maximum temperature was recorded as 47°C, during the study period minimum Humidity was recorded 10% and maximum Humidity was recorded as 25%. wind blow was in the direction of ENE and wind speed during study period was found to be 2.14 m/s. Based on the wind direction and wind speed it is interpreted that maximum dispersion of air pollutant will be in WSW direction during the study period.

Summary of Ambient Air Quality

- $PM_{10} = 49.4-85.1 \mu\text{g}/\text{m}^3$
- $PM_{2.5} = 23.1-52.1 \mu\text{g}/\text{m}^3$
- $SO_2 = 4.8-18.7 \mu\text{g}/\text{m}^3$
- $NO_2 = 10.5-51.6 \mu\text{g}/\text{m}^3$
- $CO = 360-980 \mu\text{g}/\text{m}^3$

The noise level study shows that the noise levels are meeting the acceptable norms. The noise level in area varies from 45.2 to 73.4 dBA during day time and 33.8 to 65.4 dBA during the night time.

Summary of Ground Water Quality

- pH = 7.28-7.65
- Total dissolved solid = 305 to 580 mg/L
- Total hardness = 175-220 mg/L
- Total Alkalinity = 167-210 mg/L
- Iron = 0.15-0.26 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 = 7.22-7.82.
- TDS = 275-670 mg/L.
- DO = 3.2- 6.5 mg/L.
- COD = 10-52 mg/L.
- BOD = 2.8-12 mg/L.

The pH value of the soil suspension varied from 7.13 to 8.03. In terms of soil pH the characteristic of the soil is moderately alkaline pH in nature. The Electrical conductivity varied from 220 to 228 μ Mohs/cm. The sodium absorption ratio of soil varied from 0.30 to 0.35. The Cation exchange capacity varied from 13.4 to 15.6 meq/100 gm. The loss on ignition in terms of organic matter varied from 0.62 to 0.79 %, it indicates that soils are medium in organic carbon status. The major nutrient such as Nitrogen, Phosphorus and Potassium level were varied from 138.72 kg/ha to 178.92 kg/ha., 45.26 to 55.27 kg/ha and 189.70 to 217.22 kg/ha respectively. The micronutrients such as copper, zinc, boron and iron are minimum and sufficient for plantation.

Flora and Fauna:

The study area has five reserve forest viz. Rabo Forest at 5.2km (N), Endu Forest at 8.65 (NNW), Bargarh Forest at 4.5km (NW), Burhapahar Forest at 0.95km (SW) and Basnajhar Forest at 2.85 (W). Major river flowing in the study area are Mand & Kurket River which are at distance of 2.8 km & 8.6 km in East and NE direction respectively. The Rabo Forest is larger in all four RF situated in north wrt project site. The dominant tree species in these forest is Sal (*Shorea robusta*).

Total 16 species of mammals, 11 species of reptiles, 57 species of birds 11 species of butterflies have been observed during the primary survey. No any sighted species falls under schedule -I of Wildlife Protection Act 1972.

According to 2011 Population Census the study area has a total population of 60856. Gender wise it is more or less equally distributed. Since there is no urban area in the study

area all the habitations located in the study area are villages and people living therein are villagers. The overall sex ratio in the study area has been worked out to 999 females per 1000 males.

3.0 ANTICIPATED ENVIRONMENTAL IMPACT & MITIGATION MEASURES

Anticipated impact and Mitigation Measures of Ambient Air Quality w.r.t Coal Washery:

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.

Anticipated impact and Mitigation Measures of Ambient Air Quality w.r.t Iron Ore beneficiation:

The source of air pollution from the proposed plant will be the fugitive dust emissions. The proposed Iron Ore Beneficiation unit will generate PM from the raw iron transportation, storage & handling and processing operations. The emissions of particulate matter from the Iron Ore Beneficiation will be controlled by effective dust extraction and/or dust suppression system. Dusty air from various material transfer points will be controlled with proper dust suppression

100% wastewater generated during process will be treated in clarifier and after chemical treatment will be re-used in process. Domestic sewage will be treated in Sewage Treatment Plant. Treated water from STP 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 washed coal and rejects. Rejects will be sold to power plants in nearby areas and washed coal will be given to nearby cement plants and steel plant. MoU is executed.

The existing truck movement pattern will not undergo any significant change due to proposed project. There is operational rail sliding for transportation of Iron Ore materials and Fraction of the coal. 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.

Corporate Environmental Responsibility is about managing the use natural resources in the most effective and efficient manner in order to reduce environmental impacts and financial costs. With an aim of better infrastructure, proper drainage facility, solar power system, Upgradation of medical facility. Amount of INR 1 Cr is earmarked under CER activity and will be updated as per the MoEF&CC Office Memorandum dated 30/09/2020 and suggestion during public hearing.

6.0 PROJECT BENEFITS

During construction phase, the proposed project will benefit on following heads:

- Employment Generation of 50-60 persons for approximately 24 months.
- Community Services by providing necessary facilities like water supply, sewerage, and medical facility etc. for catering to the needs of the project personnel.
- Demographic and socio-economic by providing opportunities for employment.

During Operation phase, the proposed project will benefit on following heads:

- Direct employment of 275 including Chief Executive, Managers, Engineers, Supervisors, Skilled Technicians. Skilled, semi-skilled& un-skilled persons.
- Improvement in infrastructure by Maintaining Road transport, full filing market demand, market for consumer goods, creation of community assets(infrastructure), and opportunity for indirect employment.
- The project will have positive impact on the level of education of the people.
- Direct Revenue Earning to the National And State Exchequer
- Meeting emission limits by thermal power plants

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. 636 Lakh capital expenditure has been made. Recurring annual expenditure will be Rs. 154.5 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 for Greenfield Project of Wet Type Coal Washery Based on Heavy Media Cyclone of 2.6 MTPA & Iron Ore Beneficiation Plant of 1.2 MTPA 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 25.05.23) and is recognized by MoEF&CC (Gazette Notification No. S.O. 388 (E) dated 10.02.2017).