DRAFT ENVIRONMENTAL IMPACT ASSESSMENT REPORT
& ENVIRONMENT MANAGEMENT PLAN
of

M/s Tiwarta Cool Beneficiation Limited

at

Village- Limha, Tehsil & District- Bilaspur (C.G)

Area: 8.068 ha

at

Khasra no: - 62, 63, 65 (66/2, 67), 68, 69, 70/2, 38/2, 42/1, 42/2, 44/1, 49/3, 73/1, 73/2 ,75,79,74,76, 54,77, 87, 38/1, 78, 37/4, 37/8, 47/1, 47/2, 49/1, 50, 51, 52, 53, 55, 56/1, 56/2, 56/3 ke, 56/3kh, 56/4, 56/5, 57, 58, 59, 60, 61/3, 66/1, 71, 72 and 37/2,

Capacity –2.48 Million Tons per annum

Executive Summary – English

Applicant

Director- Shri Ashok Kumar
M/s Tiwarta Coal Beneficiation Limited

Consultant – P&M Solution

1st floor c-88, Sector -65 , Noida Uttar Pradesh -201301

EXECUTIVE SUMMARY

INTRODUCTION

Most of the reserves in India are of very low grade (F-G grade, very high ash up to 50%). On the other hand, the demand for clean coal is increasing due to higher demand of steel, power and cement sector. Therefore, M/s Tiwarta Coal Beneficiation Limited has planned this coal washery, which is near to coal mines, railway siding along main railway line already existing and probable clients are available.

Earlier the EC was taken for 0.96 MTPA by letter ref. no. 913/SEIAACG/coalwashery/Bilaspur-/311- Raipur dated 22/01/2018 for M/s Tiwarta Coal Beneficiation Limited.

M/s Tiwarta Coal Beneficiation Limited proposes to increase the Coal Washery Capacity from 0.96 MTPA to 2.48 MTPA at Vill: Limha Tehsil & Dist: Bilaspur will be delivered to the washery from various customers for washing. The clean coal will be given back to the customers. The customers will source raw coal from the numerous coal mines of South Eastern Coalfields Ltd (SECL), particularly located in the neighboring Korba district (Ghevra, Dipika, Kusmunda mines).

The Coal Washery project of 2.48 MTPA capacity falls under "Category-B" as per the EIA Notification dated 14-9-2006 amended vide Notification 1886 (E) dated 20-4-2022. Application was submitted for obtaining Terms of References (TOR) for conducting the Environment Impact Assessment (EIA) Study. State Level Expert Appraisal Committee-Chhattisgarh (SEAC) prescribed Standard TOR vide Letter No. 651/SEAC/CG/Washery/Bilaspur/2295 dated 22.06.2023. The draft EIA Report is prepared for conducting the public hearing. Final EIA report will be prepared after incorporating the outcome of public hearing and submitted to SEAC for appraisal and grant of Environmental Clearance (EC).

Expansion of Coal Washery from 0.96 MTPA to 2.48 MTPA at village Village: Limha Tehsil & Dist: Bilaspur (Chhattisgarh) By M/s Tiwarta Coal Beneficiation Limited

Location

Village: Limha, Tehsil & Dist.: Bilaspur, Chhattisgarh and Latitude: 22° 17'11.1"N Longitude: 82°17'53.9"E

Connectivity

The lease area is about Bilaspur -Katghora Road (0.30 km, SE), Chakarbhata Airport 36 km SW Bilaspur about 29 km in SW

Mailing/ Correspondence Address of Project Proponent:

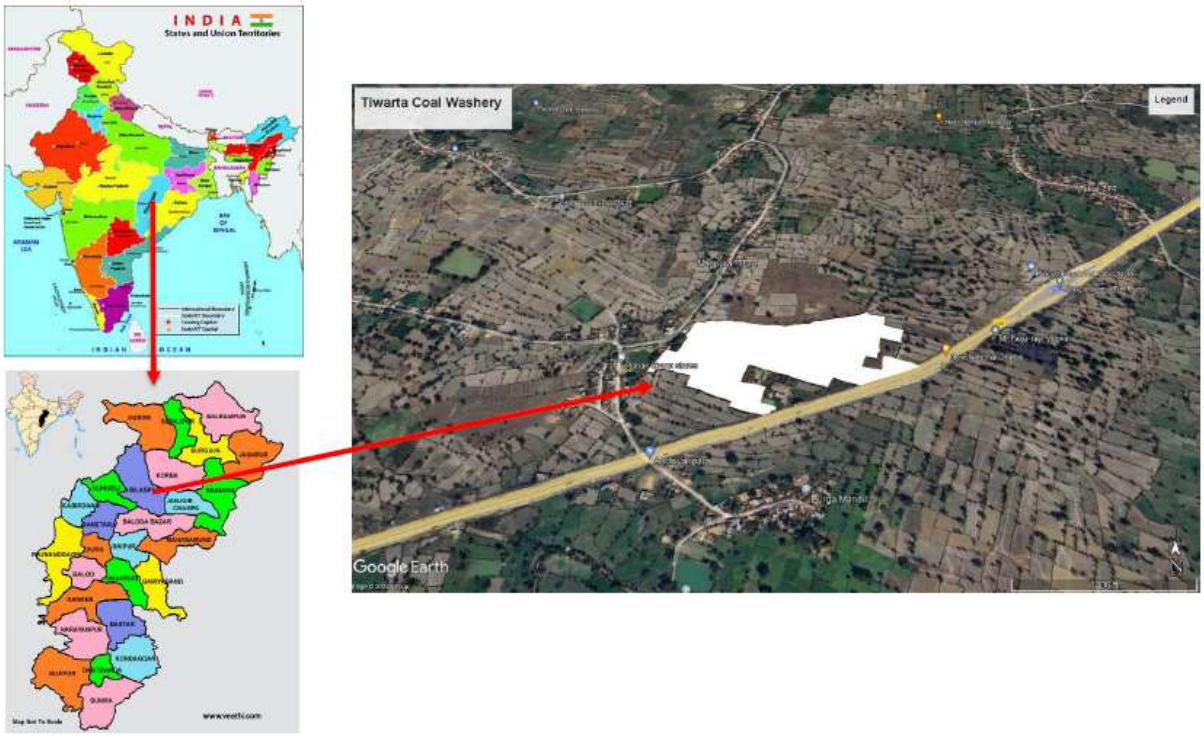
.M/s Tiwarta Coal Beneficiation Ltd

Village : Limha, Tehsil and dist : Bilaspur

Size of the Project

The capacity of the coal washery will be 2.48 MTPA. 75 workers will be directly employed in the project. About 25 workers will get indirect employment due to the project. Now company expansion from 0.96 to 2.48 mtpa.

Expansion of Coal Washery from 0.96 MTPA to 2.48 MTPA at village Village: Limha Tehsil & Dist: Bilaspur (Chhattisgarh) By M/s Tiwarta Coal Beneficiation Limited



Google Map of the Project

BENEFITS OF USING WASHED COAL

- Increased power generation efficiency, mainly due to the reduction in energy loss as inert material passes through the combustion process
- Improvement in plant utilization factor resulting in increased plant availability
- Reduced investment costs
- Reduced operation and maintenance (O&M) costs due to less wear and reduced costs for fuel and ash handling
- Energy conservation in the transportation sector and lower transportation costs
- Less impurities and improved coal quality thus reduction in fuel consumption
- Reduced smoke and dust emission thus reduction in load on the air pollution control system
- Reduction in the amount of solid waste that has to be disposed off due to low ash. Due to this there will be reduction in ash disposal area
- Reduction in auxiliary power consumption • Reduction /elimination in fuel oil support
- Reduction in furnace wall slagging, boiler tube leakage, clinker formation, abnormal erosion etc.
- Improvement in boiler efficiency and reduction in running maintenance of boiler and its auxiliaries
- Reduction in outage/down time in coal mills due to absence of foreign material.

  From the above it can be seen that washing of coal helps in achieving operational efficiency and better performance of thermal plants thus plays a vital role in national as well as regional interest.

DESCRIPTION OF PROJECT

The Coal Washery shall be environment friendly with close circuit water system comprising classifying cyclone, high frequency screen, thickener, multi roll belt press filter. The washery shall be State-Of-The-Art with modern instrumentation and PLC Controls. The capacity of the Coal Washing Plant shall be 2.48 Million Tons Per Annum of raw coal throughput having the following parameters:

Capacity : 500 TPH.

No. of operating days in a year : 310 days.

No. of operating hours : 20 hours (in 02½ shift operation)

Plant utilization : 80%.

Annual throughput : 500 tons x 20 hours x 310 days x 0.8=
24, 80,000 TPA

The washing plant shall be one stage separation (two products).

Raw Coal - Ash 45%

Washed Coal - Ash-34%, Moisture-11%, FC-34%,
VM-27%
Yield 80%, GCV- 4350 Kcal/Kg.

Reject Coal - Ash 65%, FC 21% VM 19% Moisture – 8%,
GCV - 1950 Kcal / Kg.

Yield figures indicated are tentative and are meant for estimation purposes only. Actual yield figures vis-à-vis product qualities can be predicted only after conducting full scale wash ability on ROM coal.

MATERIAL BALANCE

Name	**Yield In %**	**Ash Content %**	**Quantity, MTPA**
Rom Coal (Input)	-	40	2.48
Washed Coal, (Product)	80	34	1.984
Reject, (By Product)	20	65	0.496
Total			**2.48 MTPA**

DESCRIPTION OF BASELINE-ENVIRONMENT

This section contains the description of baseline studies of the 10 km radius of the area. The data collected has been used to understand the existing environment scenario around

The proposed mining project against which the potential impacts of the project can be assessed. Environmental data has been collected in relation to propose mining for:-

(a) Land
(b) Water
(c) Air
(d) Noise
(e) Biological
(f) Socio-economic

(a) Land Use: The land-use is divided into agriculture land, settlement, and river and forest area as shown in the map. The area is fertile and dominated by the proportion of agriculture land.

There is no National Park, Biosphere reserve, Migratory routes of fauna and National Monument within 10km periphery of the lease area as per secondary data available. There is no habitation within lease area.

ANALYSIS RESULTS O F BASELINE ENVIRONMENT

(a) SOIL ENVIRONMENT

Physical characteristics of soil were characterized through specific parameters viz bulk density, porosity, water holding capacity, pH, electrical conductivity and texture. Soil pH plays an important role in the availability of nutrients. Soil microbial activity as well as solubility of metal ions is also dependent on pH. In the study area, variations in the pH of the soil were found to be slightly acidic to alkaline (7.24 to 7.83). Electrical conductivity (EC) is a measure of the soluble salts and ionic activity in the soil. In the collected soil samples the conductivity ranged from 351 to 452µmhos/cm.

The soils with low bulk density have favorable physical condition where as those with high bulk density exhibit poor physical conditions for agriculture crops.

(b) **WATER ENVIRONMENT**

Ground water Observation:

- The pH limit fixed for drinking water samples as per IS-10500 Standards is 6.5 to 8.5 beyond this range the water will affect the mucus membrane or water supply system. During the study period, the pH was varying for ground waters from 7.06 to 7.41. The pH values for all the samples collected in the study area during study period were found to be within the limits.
- The desirable limit for total dissolved solids as per IS-10500 Standards is 500 mg/l whereas the permissible limit in absence of alternate source is 2000mg/l.

Surface water Observation:

- The analysis results indicate that the pH ranges between 7.02 and 7.91.
- The chlorides was found to be in the range of 54 to 71 mg/l

Based on the results it is evident that most of the parameters of the samples comply with 'Category 'C' standards of CPCB (Table 3.5) are indicating their suitability for only Drinking water source after conventional treatment and disinfections.

.**(c) AMBIENT AIR QUALITY**

Air Quality monitoring is essential for evaluation of the effectiveness of abatement programmers and to develop appropriate control measures. The minimum and maximum level of $PM_{2.5}$ recorded within the study area was in the range of 23.21 µg/m^3 to 46.25 µg/m^3 .

The minimum and maximum level of PM_{10} recorded within the study area was in the range of 49.64 to 79.21 **µg/**.

The minimum and maximum concentration of SO_2 recorded within the study area was 6.08 to

18.61 µg/m^3.

The minimum and maximum level of NO2 recorded within the study area was in the range of was 14.32 µg/m^3 to 28.20µg/m^3

(d)NOISE ENVIRONMENT

The values of noise observed in some of the areas are primarily owing to vehicular traffic. Assessment of hourly night time Leq (Ln) varies from 41.9 to 49.2 dB (A) and the hourly daytime Leq (Ln) varies from 55.5 to 63.9 dB (A) within the study area. The status of noise quality within the 10 km zone of the study area is, therefore, within the MoEF standards.

ENVIRONMENT MANAGEMENT PLAN (EMP)

Introduction

Standards are stipulated by various regulatory agencies to limit the emission of pollutants in air and water. Similarly, a mandatory practice is recommended for preparing an Environment Statement each year in order to encourage the industries to allow efficient use of resources in their production processes and reduce the quantities of wastes per unit of product. This in itself is not sufficient since this does not provide an assurance that its environmental performance not only meets, will continue to meet, legislative and policy requirements. Hence, Environmental Management Systems (EMS) are suggested at the industry level for ensuring that the activities, products and services of the region conform to the carrying capacity (supportive and assimilative capacity) based issues. Since this is more in line with the quality systems, it is recommended that the proposed

plant develop one as outlined in the following sub sections. The EMS-its set-up, role and responsibilities is given subsequently.

Formation of an Environmental Management System

The environmental management system to be formed by each industry will enable it to maximize its beneficial effects and minimize its adverse effects with emphasis on prevention. It should:

- Identify and evaluate the environmental effects arising from the industry's proposed activities, products and services to determine those of significance; and
- Identify and evaluate the environmental effects arising from incidents, accidents and potential emergency situations.

Implementation of an Environmental Management System

It is essential that the top management of the industry is committed to development of its activities in an environmentally sound manner and supports all efforts in achieving this objective. An industry with no formal environmental management system first establishes its current position with regards to environment through a preparatory environmental review.

The industry's management should actively initiate, develop and support the environmental policy, which is relevant to its activities, products and services and their environmental effects.

- ***Environmental Management Program***

The establishment of an environmental management program is the key to compliance with the industries environmental policy and achievement of the environmental objectives and targets. It should designate the responsibility for achieving the targets at each level and the means thereof. It should deal with the actions required for the consequences of the industries past activities as well as address the life cycle of developments of new products so as to effectively control adverse impacts.

Environmental Management Reviews

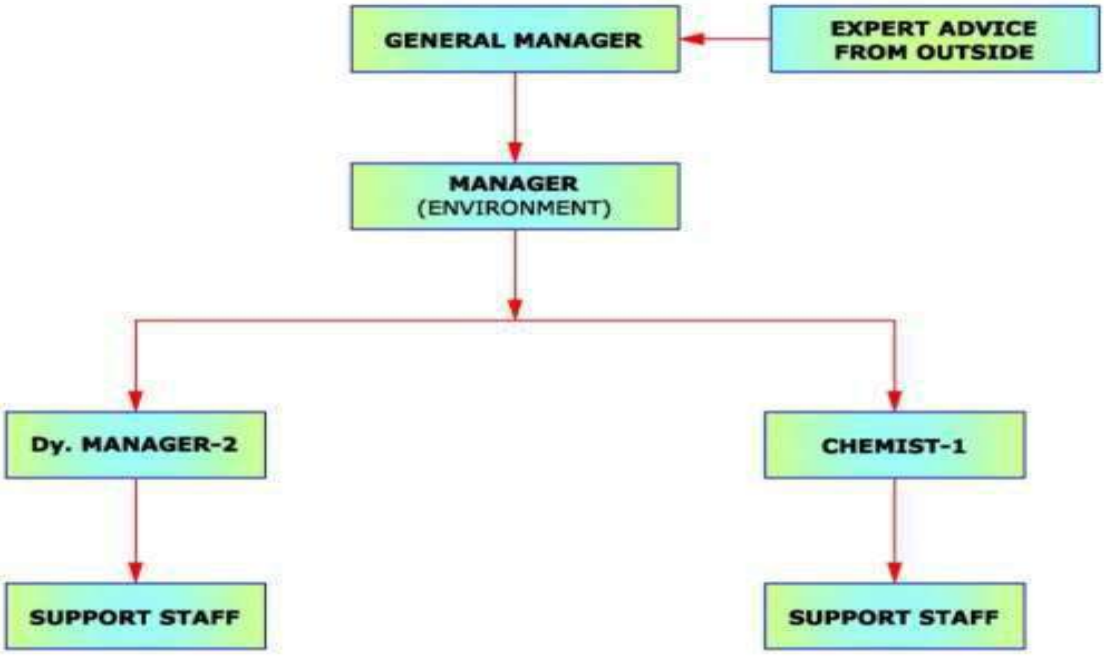
The senior management should periodically review the Environmental Management Systems to ensure its suitability and effectiveness. The need for possible changes in the environmental policy and objectives for continuous improvement should be ascertained and revisions made accordingly. EMS based on the above objectives should be formulated and implemented at the industry level.

Institutional Arrangements for Environment Protection and Conservation

The coal washery will be supervised and controlled by the Unit Head, supported by General Manager (plant operations). Environment Management Cell will be headed by the Manager

(Environment), Environmental Engineer, Chemists and Support staff. The Organizational Structure of Environment Management is presented in **Figure-10.1.** The Environmental Engineer will be responsible for Environment management activities in the plant. As conscious of this, Inspire Industries Private Limited will create a department consisting of officers from various disciplines to co-ordinate the activities concerned with the management and implementation of the environmental control measures. Basically, this department will supervise the monitoring of environmental pollution levels viz. ambient air quality, water and wastewater quality, noise level either departmentally or by appointing external agencies. Besides, the Cell will deal with the collection of statistics of health of workers and population of the region, afforestation and greenbelt development.

The Department should be the nodal agency to co-ordinate and provide necessary services on environmental issues during construction and operation of the project. This group is responsible for implementation of environmental management plan, interaction with the environmental regulatory agencies, reviewing draft policy and planning. This Department will interact with State Environmental Department, Chhattisgarh Environment Conservation Board (CECB) and other environment regulatory agencies. In case the monitored results of environmental pollution are found to exceed the allowable limits, the Environmental Management Cell will suggest remedial action and get these suggestions implemented through the concerned authorities.



ORGANIZATION STRUCTURE FOR ENVIRONMENT MANAGEMENT

ENVIRONMENT MANAGEMENT PLAN

Particulars	**Capital Cost**	**Recurring Cost/ year in Rs.**
Environmental Protection		
Dust Suppression & Pollution Control	55,00,000	40,00,000
Tarpaulin and cover for stack of ore	4,00,000	3,00,000
Green Belt along with fencing	30,00,000	5,00,000
Total	89,00,000	48,00,000
Road Maintenance	21,00,000	10,00,000

CONCLUSION

As discussed, it is safe to say that the proposed facilities are not likely to cause any significant impact to the ecology of the area, as adequate preventive measures will be Adopted to keep the various pollutants within the permissible limits. Green belt development around the area will also be taken up as an effective pollution mitigative technique, as well as to serve as biological indicators for the pollutants released from the premises of Tiwarta coal and Beneficiation Limited