CENTRAL COALFIELDS LIMITED

(A MINIRATNA CAT-1 COMPANY)

(GOVT. OF INDIA UNDERTAKING)

OFFICE OF THE PROJECT OFFICER
JARANGDIH COLLIERY, KATHARA AREA
PO:-KATHARA, BOKARO,JHARKHAND-829113

Ref: PO/JRD/925 Date:- 29/7/2022

To,

Registered Post

The Member Secretary
State Pollution Control Board
T.A. Bhawan, HEC Campus, Dhurwa,
Ranchi-834004, Jharkhand

Sub: Submission of Annual Environmental Statement Report for the year 2021-22 of Jarangdih Opencast Mine of Kathara Area, CCL.

Respected Sir,

Please find herewith the copy of Annual Environmental Statement Report which is prepared as per statutory requirement for the year 2021-22 of Jarangdih Opencast Mine, Kathara Area, CCL.

This is for your kind information.

Yours faithfully

29/7/22

Project Officer
Jarangdih Colliery

Copy for Kind Information-

1. The Regional Officer, JSPCB HIG-1, Sardar Patel Nagar, Dhanbad, 826001
2. The General Manager, Kathara Area
3. The S.O.(Env.), Kathara Area
4. The Office copy

ENVIRONMENTAL STATEMENT

OF

JARANGDIH OC

FOR

2021-22

CENTRAL COALFIELDS LIMITED

EXECUTIVE SUMMARY

E-1 This Environmental Statement Report has been prepared as per gazette notification no. G.S.R. 329 (E) dated 13th March 1992 laid down by Ministry of Environment& Forest. The Environmental Audit has been subsequently renamed to "Environmental Statement" vide MOEF gazette notification no. G.S.R. 386 (E) dated 22nd April 1993.

E-2 The Jarangdih OCP of Central Coalfields Limited is situated in the East Bokaro Coalfields in Bokaro dist. of Jharkhand State.

E-3 The Environmental Monitoring was carried out quarterly as per the guide line of Ministry of Environment &Forest (MOEF).

E-4 Ambient air quality was monitored to study the level of air pollution. The main air pollutant is Suspended Particulate Matter (SPM). It is difficult to quantify the amount of air pollutants generated due to mining. However, the results show that SPM,SOx,NOx values are generally below permissible limits prescribed by Ministry of Environment & Forest (MOEF).

E-5 Water is not directly used during mining for coal production.It percolates into working area during mining operation. However, water is consumed for other purposes, mainly for agriculture purpose and dust suppression.

E-6 The noise levels recorded are generally below permissible limits prescribed by Ministry of Environment & Forest (MOEF). There is no continuous high level sound frequency of impulsive nature.

E-7 Raw materials used in coal mining activities are explosives and POL for machines and automobiles. The consumption is detailed in part-B of Statement Form.

E-8 Hazardous waste is not being produced either from mining operations or from any pollution control facilities except for Over Burden in case of OCP.

E-9 Regular measures are being taken to control air, water & noise pollutions discussed in detail in parts-G, H & I of the Statement Form.

Also, measures will be taken for implementation of the Environmental Management Plan for the project after getting approval of project report.

E-10 This Annual Environmental Statement Report for the year 2021-22, has been prepared as per statutory requirement.

CHAPTER –1

PROJECT DESCRIPTION

1.1 INTRODUCTION

The Jarangdih OC of Central Coalfields limited is located in the East Bokaro district of Jharkhand state. The EC capacity of the project is 0.88 MTY. At present planned production capacity of Jarangdih OC is 0.364997 MTY.

1.2 LOCATION & COMMUNICATION :

Jarangdih colliery is situated in the East Bokaro Coalfield in the Bokaro District of Jharkhand State. Latitude: 23047'31" & 23047'53"N Longitude: 85054'14" & 85055'14" E Area of the Block-1.36Sqkm Strike-Strike of the formation is E-W to NE-SW Dip-The direction of dip is southerly and its amount varies from 5 degree to 45 degree. East Bokaro Coalfield is known to be the most important source of medium coking coal in the country. Even before the nationalisation of coal industry, the coalfield was under active exploitation by the then NCDC and the private owners. The Jarangdih block is located in the central part of the coalfield. This is one of the several blocks notified by the NCDC for detail exploration and exploitation in the East Bokaro Coalfield.

The Jarangdih opencast block is well connected by both rail and road. The Gomoh-Barkakana loop line of the Eastern railway passes along the northern bank of the Konar River adjoining Jarangdih Opencast Block. The Jarangdih Railway Station is located within 1km from the block. Another feeder line connecting Kathara from Jarangdih passes about 1km from the eastern and southern boundaries of the block. The block is well connected by black tar road to different areas of East Bokaro Coalfield and in turn to major cities around the block. The block is about 90kms from Hazaribagh and 120kms from Ranchi via Tenughat Dam. The nearest Air strip connected by the regular airlines is at Ranchi. Another private air strip belonging to IEL is located near Sawang colliery at about 15 km from block. The location of Jarangdih colliery and other surface features are given in ANNEXURE.

1.3 SALIENT FEATURES :

At present planned production capacity of Jarangdih OC is 0.364997 MTY. The mine is operated with shovel-dumper mechanism.

CHAPTER – II

ENVIRONMENTAL STATEMENT FORM -V

Environmental Statement for the financial yearending March'2022

PART – A

(i) Name and Address of the mine.	:	JARANGDIH OCP Place : Jarangdih colliery Post : Jarangdih colliery Distt : Bokaro, JHARKHAND
(ii) Industry Category	:	Primary
(iii) Production Capacity	:	OC - 0.88MTY as per EC J-11015/502/2008-IA-II(M) dated 01.03.2012 for a capacity 0.88MTPA Production during year 2021-22 is 0.371628 MTPA
(iv) Date of last Env. Statement Report:		The last Env. Statement Report was submitted by for the year 2019-20

PART – B

WATER AND RAW MATERIAL CONSUMPTION

I. Water consumption (M^3/ day)

Mining		
a	Haul road dust suppression	236
b	Workshop	10
c	Fire fighting	Nil
d	Others (service, building, siding etc.)	980
Domestic		
a	Domestic including service and welfare building	1060

WATER CONSUMPTION PER UNIT OF PRODUCT

Name of Product	Water Consumption per Unit of Product	
	During financial year (2021-22)	During financial year (2020-21)
1. ROM Coal	2.215 cum/te	1.166 cum/te

II. RAW MATERIAL CONSUMPTION :

Sl.No.	Name of raw material	Name of products	Consumption of raw material (per unit of output)	
			During the financial year (2021-22)	During the financial year (2020-21)
	Nil	Nil	Nil	

PART - C
POLLUTION GENERATED
(PARAMETERS SPECIFIED IN THE CONSENT ISSUED)

Pollutions	Quantity of pollution generated	Percentage variation from prescribed standards with reasons
WATER	Water discharged from: (a)Mine-2257 cum /day (b)Workshop- 10 cum /day (c)Colony-1060 cum /day	The analysis results reveal that all of the parameters are below the limits prescribed by MOEF.
AIR	It is difficult to quantify the amount of air pollutants. The main air pollutant is suspended particulate matter (SPM).	Ambient air quality results show that SO2,NOx, & SPM level are well within prescribed standards.

PART - D
HAZARDOUS WASTES

(As specified under Hazardous Waste/Management and Handling Rules, 1989)

Hazardous Wastes	**Total quantity**	
	During the financial year (2021-22)	**During financial year (2020-21)**
a) From process	Used oil-13.25 KL Used Led Acid batteries-17Nos Filter used – 360Nos	Used oil-11.995KL Used Led Acid batteries-10 Nos Filter used - 448 Nos
b) From pollution control facilities	Nil	Nil

PART – E

SOLID WASTES

	Total Quantity (in M m^3)	
	During the previous financial year (2021-22)	During the financial year (2020-21)
a) **From process (Mining)**Overburden	0.249948 Mm3	0.348304Mm^3
b) **From pollution control facilities**	Nil	Nil
c) **Quantity recycledor reutilized**	The entire volume of O.B. material is being used for partly for back-filling and partly as external dump. .	The entire volume of O.B. material is being used for partly for back-filling and partly as external dump

PART – F

PLEASE SPECIFY THE CHARACTERISTICS (IN TERMS OF CONCENTRATION AND QUANTUM) OF HAZARDOUS AS WELL AS SOLID WASTES AND INDICATE THE DISPOSAL PRACTICE ADOPTED FOR BOTH THESE CATEGORIES OF WASTES

1.Landfill Site: OB used as a landfill site for burying of filters.
2.Regional Store: Burnt Oil and Batteries are transported to the Regional Store. Hazardous waste is not being produced either from mining operation or from any pollution control facilities.During opencast mining, overburden and top soil are produced as solid wastes temporarily as these materials are used for land reclamation.

The overburden material is more or less homogeneous comprising mainly sand, silt, clay and gravel. Overburden generated during 2021-22was0.249948 Million cubic meter.

PART – G

IMPACT OF POLLUTION CONTROL MEASURES ON CONSERVATION OF NATURAL RESOURCES AND CONSEQUENTLY ON COST OF PRODUCTION

In order to carry out mining in an eco-friendly manner, following pollution control measures have been implemented:-

1.0 AIR POLLUTION CONTROL MEASURES :

The following measures have been taken to control air pollution:

(i) Wind Barriers/Screen is installed along the periphery of railway siding.
(ii) Increase of massive 3-tier plantation is practised.

(iii) Vehicular emissions is kept under control and regularly monitored. Record of PUC certificates is maintained.

(iv) Vehicles used for transporting the mineral is covered with tarpaulins and optimally loaded.

(v) Tyre Washing facility is provided for all vehicles at the exit pointof the Opencast Mine.

(vi) Regularly sprinkling is being done by using Mobile water sprinkler.Fixed water sprinklers installed along the platform and theweighbridge.Overhead fixed sprinkles already installed at weighbridge.

(vii) Water Jet spray system installed at crusher and fully closed to control fugitive emission.

(viii) Blasting operations are carried out under congenial weather condition, i.e. Avoiding temperature inversion,etc.

(ix) Plantation along the haul road and in other vacant spaces.

(x) Water sprinkling on coal stock.

(xi) All drills are wet operated.

(xii) All necessary precautions are taken during drilling, blasting, loading and transporting operations.

2.0 WATER POLLUTION CONTROL MEASURES :

The following measures have been taken to control water pollution from the mine:

(i) The mine water is discharged on wasteland after passing through a tank which acts as a settling pond.Finally; mine water reaches to Konar River flowing in the project area.Construction of Siltation pond is also at execution phase. Major portion of mine water is used dust suppression in mines and transportation roads.

(ii) A system of open drain exists within the leasehold area to collect the storm runoff from paved area, road, roof top,etc.& lead them to natural drains directly.

(iii) Garland drain is provided around the quarry to collect the surface run-off .This also prevents storm water to enter into the quarry area.

(iv) The catch drains have been constructed around the foot of the O.B. dumps in order to collect surface run-off water from the dumps and convey them to settling ponds.

(v) Colony and other service buildings are provided with septic tank and soak pit. Also, water is supplied after filtration and disinfection for domestic use.

(vi) Proposal for construction of STP is in tendering process.

(vii) Construction of ETP is at execution phasefor workshop wastewater.

3.0 NOISE POLLUTION CONTROL MEASURES:

(i) Plantation barriers have been developed around residential locations & are proposed around other noise prone area.

(ii) Efforts are being made to keep HEMMs properly maintained so as to produce least noise.

(iii) Control blasting with the use of electronic detonatorsis carried out between 2 PM to 4.00 PM.
(iv) Use of HEMMs with sound proof cabin.
(v) Ear plugs/muffs are provided to workers engaged in blasting and drilling operations etc. as per requirement.

4.0. MEASURES FOR RECLAMATION OF LAND

(i) After the back-filling and external dump reaches its final stage, it is proposed to starttechnical and biological reclamation of the external dumps.At the end of mining operation, somede-coaled area will remain empty, which would be used for storing rain water.
(ii) The presence of such a water body will help in increasing the moisture content of soil of adjacent area and ultimately it would promote the growth of vegetation.

PART – H

ADDITIONAL INVESTMENT PROPOSAL FOR ENVIRONMENTAL PROTECTION INCLUDING ABATEMENT OF POLLUTION

The following are the additional investment proposal for environmental protection:

i. The environmental monitoring of the project will be continued quarterly as per guidelines of MOEF.
ii. All residential quarters constructed for the Project has been provided with septic latrines and effluents are disposed off in soak pits. The capital investment for this purpose has not been assessed separately. Proposal for construction of STP in colonies is in tendering process
iii. The air and water consent is taken from Jharkhand State Pollution Control Board, Ranchi each year.
iv. Environmental statement report is prepared for each financial year ending 31'st March.
v. Rain water harvesting system will be installed in Excavation and E&M Workshop.

Item wise expenditure on Environment protection measure for Jarangdih Project

Sl. No.	Item		Expenditure (lakh) 2021-22	2020-21	2019-20	2018-19
1.	Seed Ball				2.065	
2.	Controlled Blasting	1. Wire Net		1.06	1.06	2.85
		2. Sake/Jute bag			0.61	2.43
3.	Water sprinkler on public road			2.67		13.86
4.	Fixed Sprinklers at Siding along the weighbridge			5		
5.	Tyre washing platform at Exit point of Mine			4.14		

6.	Wind Breaking Mesh along the railway siding	35	16.36		
7.	Distribution of Saplings to the Employees		0.90		
8.	Earth Cutting and dressing for covering of Fly Ash/coal dust		2.77		
9.	Peizometer	2.50			
10.	Siltation pond	2.96			
11.	Construction of 2 nos. silt settling tank with drain for drainage of Railway siding.	11.77			
12.	Installation of PM10 analyzer	9			
13.	Toe wall 100m at dump	7.30			
14.	Bamboo and other plantation	10			
	Total	**78.53**	**32.90**	**3.735**	**19.14**

Capital budget of Jarangdih Project in 2022-23.

Sl. No.	Item	Expenditure(lakh)	Remarks
1.	ETP at workshop	25	At execution phase
2.	STP at Colony	20	Approval phase
3.	Mist Fogger Machine to control dust	20	Tendering process
	Total	**65**	

PART - I

ANY OTHER PARTICULARS IN RESPECT OF ENVIRONMENTAL PROTECTION AND ABATEMENT OF POLLUTION

1. The Environmental monitoring is carried out quarterly for the project by CMPDI as per the guide lines of the Ministry of Environment & Forest(MOEF). Ambient air quality, quality of effluent discharged from the mine and noise level all conform to the prescribed limits.

2. The Environmental Statement for the project is prepared yearly.

Project Officer
Jarangdih Colliery