

PUBLIC HEARING DOCUMENT

FOR

MOHANPUR (EXPANSION) PROJECT (1.0 MTY)

SALANPUR AREA

EASTERN COALFIELDS LTD.

PUBLIC HEARING DOCUMENT
FOR
MOHANPUR (EXPANSION) PROJECT (1.0 MTY)
SALANPUR AREA
EASTERN COALFIELDS LTD.

1 Introduction

Purpose of the report

This EIA/EMP report has been prepared with a view to obtaining Environmental clearance for the proposed Mohanpur (Expansion) Opencast Project of M/S Eastern Coalfields Ltd. as per provisions of EIA Notification, September, 2006 from Ministry of Environment & Forests, Govt. of India.

The proposal is for expansion in production from 0.41 MTY to 1 MTY and expansion in project area from 59.91 Ha to 109.91 Ha ie by an additional 50 Ha. The mine started in 1990. Life of the expansion project is 11 years. Out of the additional 50 Ha of land to be procured by the project, 28.4 Ha falls outside the mine lease area. This land, for which lease has to be obtained, will be required for mining 5 years from now. One village, namely, Pahargora with a population of 34 families will also require rehabilitation. Some portion of the land to be acquired is cultivable.

Identification of project & project proponent

The project under consideration, i.e. Mohanpur (Expansion) OCP is administratively under Salanpur Area of ECL headed by General Manager, Salanpur Area. The mailing address is as given under:

Name & Designation of the project proponent	Agent/ Deputy Chief Mining Engineer Mohanpur OCP, Salanpur Area, Eastern Coalfields Limited
Mailing Address	PO Lalganj, Dist Burdwan, West Bengal PIN- 713359
Telephone No.	0341- 2780342 (Office)

Location & Communication

It is located at a distance of 15 km northwards off G.T.Road from Burnpur road junction of Asansol town in Bardhaman district and is under administrative control of Salanpur Area of Eastern Coalfields Limited. The block is at a distance of about 9 km due east of Rupnarayanpur station of Eastern Railway main line (Howrah – New Delhi - Howrah) and about 11 km northwest of Asansol station of the same railway.

Description of importance to the country and region

Eastern Coalfields Limited is facing increasing demand of power grade coal because of superior grade, long flame and other consumer friendly characteristics. Continuing and augmentation of coal production from the mines of ECL will help to bridge the gap of demand and supply of superior power grade coal in India. To meet the growing demand of coal, especially in power sector, sponge iron sector and brick and other small scale sectors, ECL has planned to increase its production capacity by the end of XI plan (2011-12) from the present production level of 31.11 Mt. to 45 Mt.

The proposed expansion will also bring enhanced socio-economic benefits to the local population of the project area by way of direct and indirect employment, improvement in infrastructure and growth of ancillary facilities.

Scope of the study – details of regulatory scoping carried out

This refers to consideration of the aforesaid proposal in the EAC (T&C), Ministry of Environment & forests, Government of India during the meeting held on 19th December, 2007. Subsequent to this meeting, the EAC prescribed TOR (Terms of Reference) for preparation of this EIA/EMP vide letter No. J-11015/1128/2007-IA.II (M) dated 16.01.2008.

This document has been prepared as per the prescribed terms of reference.

2 Project Description

Nature and size of the project

This is an existing opencast coal mining project of 0.4 MTY capacity proposed to be expanded to 1.0 MTY

Project Area: 109.91 Hectares (additional 50 Ha)

Additional Capital Expenditure: Rs. 6035 Lakh.

Mine life: 11 Years (Year 2007-08 is the first year for the project).

Mode of coal transportation: Coal transportation by road from CHP to Bonjemehari Railway Siding 23 Km away. Further coal transportation to customers by Rail from Bonjemehari Railway Siding.

Technology and process description

The conventional shovel-dumper and dragline system in conjunction with drilling and blasting is proposed for coal extraction and O.B removal.

Three options have been considered in the present proposal i.e. Option-I, Option-II and Option-III

Option- I In this option all the activities involved in the OCP will be done departmentally.

Option-II In this option the Top overburden will be removed departmentally with the existing equipment and removal of the rest OB i.e the parting between the coal seams along with coal extraction will be done by outsourcing of HEMM.

Option-III In this option production of coal and overburden removal and all other allied activities related to the production will be outsourced.

However, all the major activities related to the establishment viz. acquisition of land, CHP construction, Pumping, rehabilitation of Pahargora village, diversion of power line, diversion of DB road and activities related to environmental management plan will be done departmentally in all the above three options.

3 Description of the Environment

Ambient Air Quality and Noise Level study

The Ambient Air Quality and noise level study was carried out in the study area. It has been found that-

Core zone

SPM and RPM values are ranging from 140 $\mu\text{g}/\text{m}^3$ to 175 $\mu\text{g}/\text{m}^3$ and 57 $\mu\text{g}/\text{m}^3$ to 72 $\mu\text{g}/\text{m}^3$ respectively. SO_2 and NO_x values are varying between <10 to 16 $\mu\text{g}/\text{m}^3$ and <10 to 20 $\mu\text{g}/\text{m}^3$ respectively in core zone.

Buffer zone

SPM and RPM values are ranging from 100 $\mu\text{g}/\text{m}^3$ to 140 $\mu\text{g}/\text{m}^3$ and 43 $\mu\text{g}/\text{m}^3$ to 60 $\mu\text{g}/\text{m}^3$ respectively. SO_2 are found to be < 10 to 13 $\mu\text{g}/\text{m}^3$ and NO_x values are found to < 10 to 16 $\mu\text{g}/\text{m}^3$ at all the locations in buffer zone.

Noise Level Data

Stn. No.	Location Name	Zone Type	Leq Noise Level, dB(A)			
			Day time	Night time	CPCB LIMITS	
					Day time	Night time
N1	Agent's Office	Core zone (Industrial)	61.5	50.7	75	70
N2	Salanpur Area General Manager's Office	Buffer zone (Residential)	48.5	38.7	55	45
N3	Itapara	Buffer zone (Residential)	48.7	40.8		
N4	Bolkunda	Buffer zone (Residential)	49.2	39.5		
N5	Gourangdih	Buffer zone (Residential)	48.6	38.2		
N6	Chayanpur	Buffer zone (Residential)	48.5	38.4		

Conclusion

The concentration level for SPM, RPM, SO_2 and NO_x recorded at stations representing industrial and residential areas are within the prescribed limits as per GSR 742 (E) Dated 25.09.2000 of MOEF and NAAQS respectively.

While comparing with noise level norms for acceptable outdoor noise levels in industrial and residential areas, the Leq values are found to be within the limits.

Water quality status

Water Sampling

One mine water discharge sample from existing mine, one drinking water supply sample, two samples of ground water from tube well and dugwell and two surface water samples from Nunia Nallah, 100 m upstream and downstream of confluence with mine discharge water respectively, were collected on 20th October'2006. These were monitored for all the parameters as per MoEF guidelines / Indian Standard. Mine discharge water samples were compared with GSR 422(E) standard, the drinking water samples were compared with IS: 10500 standard and surface water samples were compared with IS: 2296-1982 for Inland Surface water (Class C).

Mine water quality

While comparing with MOEF Scheduled - VI Norms for General discharge Standards for Effluents, all the values are well within the prescribed limits.

Ground / Drinking water quality

All the values were found to be well within the permissible limit of IS: 10500, 1991 norms.

Surface water quality

All the values were found to be well within the IS: 2296 class C norms.

Hydrogeological Study

The stage of ground water development in the study area comes to about 21.78%. The stage of ground water development in the project area and its buffer zone is classified as "Safe" category.

Soil Quality

The soil quality in the project area appears to be good and would support plantation after suitable reclamation measures. The available range of parameters observed in the study area is given below.

Flora and Fauna study

The flora and fauna was surveyed by Professors of Andhra University, Visakhapatnam. The Survey Report shows that there are no rare and endangered flora and fauna species in the Core Zone.

Socio-economic Study

Socio-economic study in core and buffer zone was carried out by M/S Projects & Development Ltd. (A Govt. of India Enterprise), Sindri, Dhanbad. The socio-economic data reveals that the socio-economic profile of the area is good.

Land Use Pattern

I Pre-mining land use pattern of present project area of 59.91 Ha is as follows:-

SI.No.	Landuse Type	Area (Ha)
1	Agricultural land	35.0
2	Quarry	4.0
3	Barren Land	20.91
Total		59.91

II The present land use of project area of 109.91 Ha inclusive of area to be acquired is as follows:-

SI No	Landuse Type	Area (Ha)
1	Excavated area including haul-road	11.0
	External OB Dump (Active)	10.0
	Internal OB Dump (Active)	16.0
	Top-soil Dump	1.0
2	Undisturbed area	
	i. Cultivable	17.10
	ii. Barren waste land	43.11
	Total	60.21
3	Colliery Infrastructure/Built-up	2.5
5	Coal depot	1.0
6	Road	0.5
7	Village	7.70
Total		109.91

The present land use of additional area of 50 Ha needed for expansion is as follows:-

SI No	Landuse Type	Area (Ha)
1	Cultivable	17.10
3	Village	7.70
3	Barren Land	25.20
Total		50.00

28.4 Ha of the additional 50 Ha land to be acquired for expansion of Mohanpur OCP lies outside the mine lease area and contains the Pahargora Village. Acquisition of the lease is in process.

III Current land-use/ cover Map of buffer zone based on Indian Remote Sensing Satellite Data:

Current land-use/ cover Map based on IRS-P6/LISS-III data has been prepared during 2006 covering an area of 10 km all around the periphery of the core zone. The particulars of current land use pattern based on satellite imagery are given below:

SI No.	Class of Land	Particulars	Area	
			Ha	%
1	Settlement	Urban settlement	1298	3.66
		Rural settlement	510	1.44
		Industrial	501	1.41
3	Vegetation Cover	Dense forest	1	0.0
		Open forest	110	0.31
		Scrub land	5131	12.98
		Plantation under Social forestry	1340	3.78
		Plantation on OB Dump	176	0.5
		Orchard	258	0.73
4	Agricultural Land	Crop Land	2125	6.00
		Fallow Land	21249	59.96
5	Waste land	Waste land	1189	3.36
6	Mining	Quarry	81	0.23
		OB Dump	498	1.41
7	Water Body	Surface water body	447	1.26
8	Sand Body	Sand body	527	1.49
Total			35441.0	98.52

4 Detail of Anticipated Environmental impacts & Mitigation Measures

Sources of air pollution

The main sources of air pollution are identified as-

- 1) Mining activities inside the OCP viz. Drilling, Blasting, OB removal, transport and dumping, both externally and internally and finally extraction and loading of coal.
- 2) Coal handling activities at CHP and Railway Siding.
- 3) Transport of coal from mine to CHP and Railway Siding.

Predicted Concentrations of TSP by ISCST3 Model

Zone Category	Station	Location	Present 95 th percentile Ambient air quality ($\mu\text{g}/\text{m}^3$)	Maximum Incremental value estimated by ISCST3 Modeling (24 hourly concentration) ($\mu\text{g}/\text{m}^3$)	Resultant air quality ($\mu\text{g}/\text{m}^3$) (SPM)
Core/ Industrial	Agent's Office A ₁	Active Mining Area	175	138.86	313.86
	Bonjemehari Railway Siding* A ₇	Inside active workzone	325.0	59.66	384.66
Buffer/ Residential	Salanpur G.M. Office A ₂	Along transport route	140	16.54	156.54
	Itapara A ₃	Along transport route	140	17.58	157.58
	Bolkunda A ₄	Along transport route	140	14.44	154.44
	Gourangdih A ₅	Control station	140	0.0	140.00
	Chayanpur A ₆	Control station	140	0.0	140.00

Observations

On the basis of the above prediction, we find that there will be a significant increase in SPM inside the core zone and at the Railway siding and a marginal increase at 3 locations in the buffer zone. However, the predicted level of SPM is likely to remain below the limits prescribed by NAAQS both for industrial and residential locations. The model was also run for assessing the concentrations of SO₂ & NO_x and the predicted impact was found to be negligible.

Water requirement for the project

Residential & related	215 m ³ /day	The water requirement will be met from mine water pumping @ 1300 m ³ /day (max).
Mining (Dust suppression, fire-fighting, Maintenance)	315 m ³ /day	

Water Quality Management :

Water quality may be affected due to the following activities:

Mine water discharge into surface water source.

Workshop effluent discharge due to washing of dumper, dozer, grader and floor washing.

Release of domestic wastewater.

The domestic waste water discharge @160 m³/day will be treated in domestic effluent treatment plant before final discharge to local nallah. The industrial wastewater @90 m³/day will be treated in O&G trap and settling tanks before final discharge @ 1020 m³/day (1300-530+160+90) on land surface for agriculture use if required or into local (Nunia) nallah.

Noise Level Management:

No workforce shall be allowed during blasting time so that the workers are not exposed to impulsive noise level. The noise generating points will be enclosed to minimize the propagation of high noise intensity. The workforce working at the coalface, where high noise level is expected, will be provided with protective device for occupational safety. Apart from above, green belt development will also muffle the noise to a great extent.

Flora &-Fauna Conservation :

Plantation will be done as per the norms and guidelines of forest department. This will help in enriching the flora and fauna of project area.

Socio-Economic Condition:

The project is likely to give a boost to the economy of the area and providing secondary and tertiary employment to local people. The infra-structural facilities provided by the project will benefit local villagers also.

Land Resource Requirement & Management

Stage-wise land-use is given as under-

SI No	Landuse Type	Present	At the end of 6 years	At the end of 11 years	Final Closure
1	Excavated area including haul-road	11.0	10.0	27.0	Will be backfilled upto a depth of 10-12m
2	Backfilled Area (Active)	16.0	32.0	42.0	Covered by plantation
3	External OB Dump (Active)	10.0	10.0	10.0	-do-
4	Undisturbed area				
	iii. Cultivable	17.10	17.1	-	
	iv. Barren waste land	<u>38.11</u>	<u>24.31</u>	<u>10.41</u>	
	Total	55.21	41.41	10.41	-do-
5	Colliery Infrastructure/Built-up	2.5	5.3	5.3	5.3
6	Rehabilitation Site	-	0.6	0.6	0.6
7	Topsoil Dump	1.0	1.0	1.0	Covered by plantation
8	Coal depot	1.0	-	-	-
9	Road	0.5	1.6	1.6	1.6
10	Village	7.70	-	-	-
11	Plantation/ Greenbelt/Safety Zone	5.0	8.0	12.0	75.41
12	Lagoon	-	-	-	27.0
Total		109.91	109.91	109.91	109.91

Post-mining land use of core zone with environment management

S No.	Description	Land-use (Ha)				Total
		Plantation	Water Body	Public use	Undisturbed	
1	External Waste Dump	10.0				10.0
2	Excavation	-	27.0			27.0
3	Road			1.6		1.6
4	Infrastructure/Built-up			5.9		5.9
5	Internal Dump	42.0				42.0
6	Afforestation	12.0				12.0
7	Topsoil Dump	1.0				1.0
8	Undisturbed	10.41				10.41
Total		75.41	27.0	7.5		109.91

Resettlement & Rehabilitation of PAPs

Pahargora village needs to be shifted for the expansion of the quarry. There are a total no. of 34 families residing in the village who shall be shifted to rehabilitation site with developed infrastructure. Location of the site will be decided mutually. Jobs in ECL to landlosers will also be provided as per eligibility. The Coal India R & R package shall be followed. The compensation package is outlined below in brief.

Compensation Package

Salient features of R&R plan for land oustees

- i. One Employment per 2 acres to land losers
- ii. Compensation for land as per land acquisition rate.
- iii. Compensation for building as per valuation.
- iv. 100 sq.m land with infrastructural facilities for each family to be resettled at Rehabilitation site.
- v. Shifting allowance @ Rs 8500.
- vi. House constructed by ECL where valuation is upto Rs.70,000.
- vii. Subsistence allowance as per approved package.

Following facilities are provided at rehabilitation site :

- i) Roads
- ii) Drains
Lighting infrastructure only, the power supply is provided by State Electricity Board on payment basis
- iii) Well for drinking water
- iv) Community center
- v) Places of worship
- vi) Burial ground, play ground & ponds
Any other infrastructure that was existing in original village like School, Post Office etc.
- vii) Medical facility is provided at project hospital
- viii) Children's Park
- ix) Co-operative Stores
- x) Shopping Centre

Funds earmarked for compensation package

For land acquired under LA Act, compensation amount is deposited with State Govt. for disbursement. Fund ear-marked for rehabilitation is 60.0 lakh.

Community Development

Several basic and civic amenities under community development programme have been extended to adjoining villages. An amount of Rs.1.0 per tonne of coal produced has been provided for community development in adjoining villages. This amount will be Rs. 10 lakh/annum.

5 Analysis of Alternatives

It is proposed to exploit coal from Mohanpur (Expansion) OCP within the proposed leasehold area considering the geo-mining and techno-economic reasons. The present technology of conventional shovel-dumper system is proposed to be continued for coal extraction and O.B removal in future also as this a proven technology and is being followed the world over.

6 Environmental Monitoring Program

For effective implementation, a time bound action plan for environmental management including all aspects shall be followed by the project.

Samples for study of air quality, water quality and noise level shall be collected and tested quarterly at strategic places representing all the categories of location. The Implementing Authority will be guided and advised by feed back data obtained from these tests.

Parameters to be monitored

Environmental Parameters

Ambient air quality, water quality (mine discharge and drinking water samples), ground water level and noise level will be monitored for standard parameters. This is already being implemented. Plant growth, its maintenance and survival rate will be monitored. This is being implemented through Forest Department.

Health

Health of the employees will be examined for identifying occupational diseases etc. to initiate remedial measures in time. This is already being implemented by ECL in other running projects by way of Periodic Medical Examination as per DGMS guidelines.

R & R Activities, specially Compensation to land losers

R & R Activities, especially Compensation to land losers will be monitored as per R&R Policy of CIL through Area Manager (Planning, Construction & Development) in consultation with State Government.

7 Risk assessment

Special care will be taken to follow all aspects related to safe mining practices as stipulated by DGMS.

8 Project Benefits

The opening of the Mohanpur (Expansion) OCP will enhance the socio-economic activities in the adjoining areas. This will result in following benefits

- Employment Generation
- Meet Energy needs of Nation
- Improvements in Physical Infrastructure
- Improvements in Social Infrastructure
- Increase in Employment Potential
- Contribution to the Exchequer
- Prevention of Illegal Mining
- Post-mining Enhancement of Green Cover

9 Environmental Management Cell

Eastern Coalfields Limited, the owner of this project has already set-up an Environmental Cell headed by a General Manager at its HQs. The cell provides necessary support that is required for Environmental Management of various projects and mines under the jurisdiction of the company.

The responsibility for implementing Environmental Management Plan rests with the Chief General Manager of the Salanpur Area, who gets proper assistance by a team of qualified and trained personnel. The Environmental Cell at the Project and Corporate level looks after the following functions for implementation and monitoring of pollution control measures and for overall environmental management. The responsibility for implementing environmental management plan would rest with the project officer of the project, who would be properly assisted by team of qualified and trained personnel. Organisation for environmental management in SP Mines Area Office will carry out the task and responsibility connected therewith.

- Generation of environmental data bank.
- Evolving micro environmental management plan for the project in collaboration with other agencies and consultants.
- Monitoring project implementation along with environmental control measures.
- Co-ordinate with other project activities to ensure timely implementation of the project.

Co-ordination with Ministry of Environment & Forest, Central /State Pollution Control Board for prevention and control of pollution.

Fund Provision

Provision of capital expenditure of Rs 130.0 Lakh has been made for different environmental control measures and R&R action plan. Apart from this, provision of Rs.25.65 per tonne of coal produced has been kept from revenue account for environmental control measures.

10 Disclosure of Consultants

Sl. No.	Nature of Study	Name of the Agency
1	Geological Report	CMPDI, a subsidiary of Coal India Ltd., is a premier consultancy organization engaged in mineral exploration, land resource management through remote sensing survey, coal petrography, mine planning, coal preparation & utilization, design of coal handling plants, environmental management of coal projects etc.
2	Project report	
3	Land-use study	
4	Hydro-geological Study	
5	Mineralogical analysis of dust	
6	Seasonal Ambient Air Quality Study	The environmental laboratory of CMPDI is recognised by Central Pollution Control Board, Ministry of Environment & Forests, Government of India and accredited with ISO-9001 certification. It undertakes baseline environmental data generation, EIA, EMP and monitoring various factors related environment.
7	Ambient Noise Level Study	
8	Soil Quality study	
9	Water Quality study	
10	Socio- Economic Study	VRDS Consultants, Chennai
11	Flora & Fauna study	PDIL, Dhanbad . a premier design engineering and consultancy PSU organization having ISO 9001:2000 certification, committed towards technological excellence and self-reliance in the growth of the core sector.
		Dr. PS Raja Sekhar, Associate Professor, Department of Environmental Science & Dr. M Venkaiha, Associate Professor, Department of Botany, Andhra University, Visakhapatnam

