

FORM-V

ENVIRONMENTAL STATEMENT

Environmental statement for the financial year ending 31st Mar, 2022

Part – A

- i) Name & Address of the owner/ occupier of the industry operation or process (Name of the Project Officer/ Sub-Area Manager & Office address to be given) : Shri Raj Kumar Bajaj, Project Officer, Garjanbahal OCP, PO: Basundhara, Dist.: Sundargarh (Odisha), Pin: 770076.
- ii) Industry Category : Primary (Coal Mining Operation)
- iii) Production Capacity (Coal production during the year 2021-22) : 14 MTPA (13.553MTe)
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- iv) Year of establishment : 24.05.2018
- v) Date of the last Environmental Statement submitted : 23.09.2021

Part – B

Water & Raw Material Consumption

Note: Average Water Consumption (Cu-m/ day) for the whole year is given. Raw material consumption is given per unit of coal produced.

(I) Water Consumption (Cu-m/ day):

Ser No.	Industrial/ Mining	Consumption in Cu-m/ day
1. a	Haul Road Dust Suppression	2085
b	Dust Suppression at CHP	Not Applicable
c	Dust Suppression at Siding	0
d	Fire Fighting	50
e	Workshop	15
f	Others	0
2.	Domestic	5
3.	Total in kl/ day	2155 Kl/day

Name of the Product	Water Consumption per unit of product (l/ t)	
	2020-21	2021-22
Coal	84.19	58.04

(II) Raw Material Consumption (per tonne of coal):

Name of Raw Material	Consumption of Raw Material (per tonne of Coal produced)	
	2020-21(Dept. + Contr.)	2021-22(Dept. + Contr.)
H.S. Diesel (ℓ/ t)	1.07	1.424
Petrol (ℓ/ t)	Nil	Nil
Lubricants (ℓ/ t)	0.021	0.018
Electricity (Units/ t)	0.562	0.641
Explosives (kg/ t)	0.142	0.132

Part – C**Pollution Discharged to Environment/ Unit of Output**

(Parameter as specified in the 'Consent' issued)

Pollutants	Quantity of pollutants discharged (mass/ day)	Concentrations of pollutants in discharges (mass/ volume)			Percentage variation from prescribed standards with reasons
Point of examination : Mine Sump water					
		Mine Effluent	OGT Outlet	STP Outlet	The environmental parameters are within permissible limits.
TSS (mg/ℓ)	Not possible to quantify	54	-	-	
BOD mg/ℓ)		-	-	-	
COD (mg/ℓ)		40	-	-	
pH		7.43	-	-	
O & G (mg/ℓ)		<4.0	-	-	
Air (Ambient air quality of one station-annual average) station : Southwest of Coalface					
SPM (µg/m ³)	Not possible to quantify	196			The environmental parameters are within permissible limits.
PM ₁₀ (µg/m ³)		122			
SO ₂ (µg/m ³)		11.23			
NO _x (µg/m ³)		20.39			
PM _{2.5} (µg/m ³)		40			

Part – D**Hazardous Wastes**

As specified under Hazardous Wastes (Management & Handling) Rules, 1989.

Hazardous Waste	Total Quantity (kg)	
	During the current financial year (2020-21)	During the current financial year (2021-22)
(a) From process :		
i. Burnt Oil in Workshops	41400 Ltrs	37100 Ltrs
ii. Oil soaked filters	1510 Nos.	1503 Nos.
(b) From pollution control facilities:		
i. Oil/ Oil emulsion recovery from Oil & Grease Trap	Nil	Nil
ii. Oily sludge	Nil	Nil
iii. Chemical Waste(if any)	Nil	Nil

Part – E
Solid Wastes (other than hazardous)

Particulars	Total Quantity	
	During the current financial year (2020-21)	During the current financial year (2021-22)
(a) From process (Top soil and Over burden)	7.849 Mm ³	8.398 Mm ³
(b) From pollution control facilities (STP & Sed-Pond Sludge)	Nil	Nil
(c) 1- Quantity recycled or re-utilized (OB back-filled)	Nil	Nil
2- Sold	Nil	Nil
3- Disposed	Nil	Nil

Part – F

Please specify the characteristics (in terms of concentration & quantum) of hazardous as well as solid waste and indicate the disposal practice adopted for both these categories of wastes.

(I) Hazardous Wastes:

Name of Hazardous Wastes	Quantity generated in the year 2021-22	Disposal Practices
Burnt Oil, etc. (ℓ) (from W/Shop)	37100Ltrs	Transferred to regional store from where it is auctioned to authorized agency.
Oil soaked filters(kg) (from W/Shop)	1503Nos.	Stored in impervious pit
Oil & Grease (kg) (from ETP/OGT)	Nil	N.A.
Oily Sludge (te.) (from ETP/OGT)	Nil	N.A.
Oil imulsion	Nil	N.A.
Chemical Waste if any (kg)	Nil	N.A.
Battery (nos.)	12 Nos.	Transferred to regional store from where it is auctioned to authorized agency.

Note: A detailed note on disposal practices of the above should be given separately.

(II) Solid Wastes:

Solid Waste	Quantity generated in the year 2021-22	Disposal Practices
Top Soil (m ³)	0.108 Mm ³	Kept in separate top soil dump for future use.
OB (m ³)	8.290 Mm ³	Dumped in internal as well as external OB dump.
STP & Sed-Pond Sludge	Nil	N.A.

Land Reclamation & OB disposal – progressive till March, 2022:

	Area (ha.)	OB Volume/ Nos. of Plants
1) External OB dump	47.09 Ha	14.605 Mm ³ /Nil
2) Excavated land	104.33 Ha	20.910 Mm ³ /Nil
3) Land affected (1+2)	151.42 Ha	Nil
4) Backfilled (out of 2)	32.94 Ha	6.305 Mm ³ /Nil
5) Land physically reclaimed (out of 3)	Nil	Nil
6) Land biologically reclaimed (out of 3)	Nil	Nil

Note: In the year 2020-21, progressive OB was 12.495 Mm³ but it was inadvertently entered as 12.163 Mm³. The quantity of internal dump in the year 2020-21 was 2.122 Mm³ but it was inadvertently entered as 1.812 Mm³. In this year, both the figures have been corrected.

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, a detailed Environmental Management Plan (EMP) was prepared by Regional Institute-VII of CMPDIL. The main pollution control measures suggested in EMP along with the measures implemented so far have been summarized in the Table-1.1 to 1.3.

Table – 1.1
Air Pollution Control Measures

Sl. No.	EMP Provisions	Whether provided or not	Remarks
1	Water sprinkling and grading of all roads to minimize air-borne dust from vehicles.	Provided	
2	Biological reclamation of land.	Provided	
3	Green belt around mine & infrastructures.	Provided	Greenbelt will be developed all along the mine lease area in a phased manner and the details regarding the same will be conveyed to the MoEF & CC and its Regional Office from time to time.
4	Drills fitted with dust control devices.	Provided	
5	Dust suppression/ dust extraction system to be provided in CHP.	NA	CHP does not exist.
6	Improved maintenance of plant & machinery.	Provided	
7	Mechanized coal transportation system.	Provided	

Table – 1.2
Water Pollution Control Measures

Sl. No.	EMP Provisions/ Additional precautions	Whether provided or not	Remarks
1	Mine water is to be collected in central sump on dip side of pit. This will act as sedimentation lagoon.	Provided	
2	Run-off around reclamation area will be controlled by providing catch drains and sedimentation lagoon combination.	Provided	Drains constructed.
3	Surface run-off from external dump would be collected through a series of contour drains which would be connected to a water retention pond. The clear water from this pond will be re-utilised	Provided	
4	Domestic waste water will be treated in screens, oxidation pond/ aerated lagoon. Sanitary waste to be disposed off into septic tank & soak-pit.	-	-
5	Workshop effluents will be treated in oil & grease trap & sedimentation tank.	Under Process	Presently, washing is done in workshop of Kulda OCP. A vehicle washing facility with settling tank is provided near Site office for present infrastructure. However, proposal has been initiated for construction of ETP & OGT included under HEMM workshop.
6	Zero discharge from mine shall be maintained.	Maintained	
7	Piezometers shall be installed for measurement of under-ground water depth and its quality.	Provided	1.MIP 01: Garjanbahal primary school, Garjanbahal 2.MIP 11: Primary school, Karlikachar village

Table – 1.3
Land Reclamation

Sl. No.	EMP Provisions	Whether provided or not	Remarks
1	Top soil Management: Proper stripping, Storage, and Relocation of top soil.	Proposed	Provided.

2	Physical Reclamation of OB Dump: Proper reshaping and regrading of top surface, Providing drainage arrangements and top soil spreading on external and internal dumps.	Under progress	All OB dumps are still active
3	Biological Reclamation: Plantation of suitable species of herbs, shrubs & indigenous trees over technically reclaimed dumps.	Provided	

IMPACT OF POLLUTION CONTROL MEASURES ON COST OF PRODUCTION

COST OF ENVIRONMENTAL MANAGEMENT DURING 2021-22 was Rs.4.54 per Tonne of Coal.

Part – H

Additional measures/ investment proposal for environmental protection including abatement of pollution, prevention of pollution


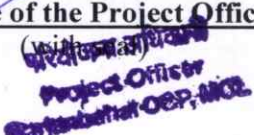
Head	Amount Rs. (approx)
Wheel Washing System	1,00,10,000.00
Vertical Greenery System	30,93,415.00
Mechanical Road Sweeper	14,592,178.66
Fog Canon	53,10,000.00
ETP & OGT construction	100,00,000.00
Dust suppression (Contractual + Departmental)	37,00,000.00
Garland drains & check dams	2,00,000.00
Consent (SPCB) & NOC (CGWB)	52,01,000.00
Others i.e. up keeping works for aesthetic view	7,00,000.00
Departmental water tankers (Maintenance, POL cost, etc.)	12,00,000.00
Fire tender (Maintenance, POL cost, etc.)	4,00,000.00
Plantation	2,57,25,410.00
Rain water harvesting structure	5,00,000.00
Construction and maintenance of transport roads	1,00,00,000.00
Wind barrier	3,00,00,000.00
Total	12,06,32,003.66

Part – I

Any other particulars for improving the quality of the environment.

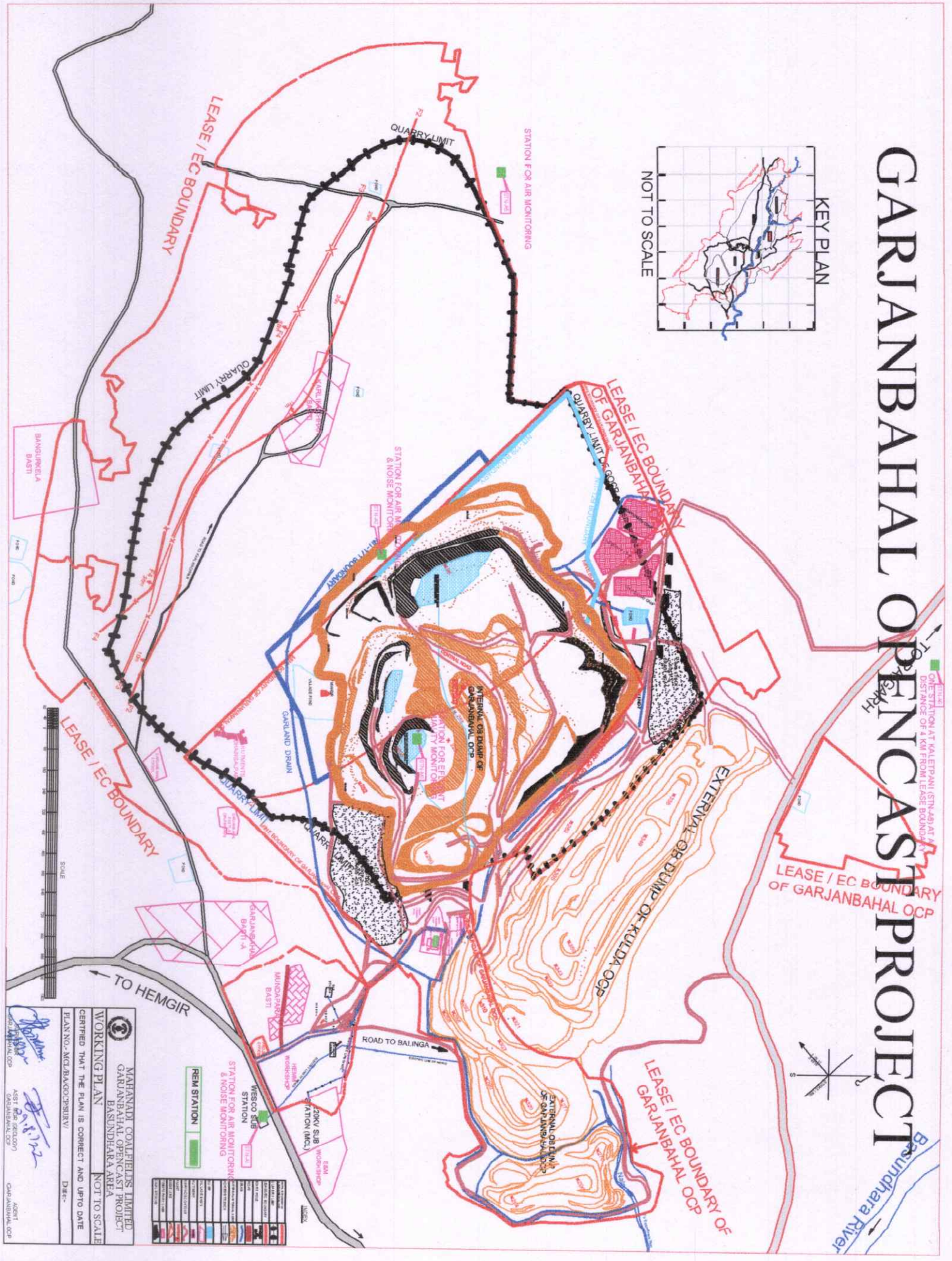
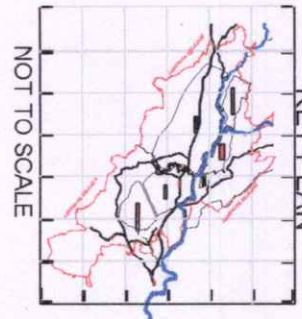
Note: Please attach a plan showing the relevant features like Present Working/ Quarry, External Dump, Back-filling, Plantation, Sedimentation Pond/ MDTP, Oil & Grease Trap/ ETP, Workshop, CHP, STP, etc. and Environmental Monitoring Stations.

Signature of the Project Officer.


 4.8.2022


GARJANBAHAL OPENCAST PROJECT

KEY PLAN



STATION AT KALEPANI (STN-45) AT A DISTANCE OF 1 KM FROM LEASE BOUNDARY OF GARJANBAHAL OCP



MAHANADI COALFIELDS LIMITED
GARJANBAHAL OPENCAST PROJECT
BASUNDHARA AREA

WORKING PLAN
 NOT TO SCALE

CERTIFIED THAT THE PLAN IS CORRECT AND UPTO DATE

PLAN NO. MCB/BAOP/2019/01/1
 DATE: 15/05/2019
 DRAWN BY: [Signature]
 CHECKED BY: [Signature]
 APPROVED BY: [Signature]

NO.	DESCRIPTION	DATE	BY
1	ISSUED FOR TENDERS	15/05/2019	[Signature]
2	ISSUED FOR WORK	15/05/2019	[Signature]
3	ISSUED FOR CORRECTION	15/05/2019	[Signature]
4	ISSUED FOR FINAL	15/05/2019	[Signature]