

# **ENVIRONMENTAL STATEMENT**

**(Form – V)**

*Under Rule – 14 of Environment Protection Rules, 1986  
and Amendment, 1993  
of*

## **Orient Mine No. 1&2 Underground Mine**

**For the year 2022-23**



**Mahanadi Coalfields Ltd.**

**Post: Jagruti Vihar, Burla,  
Dist: Sambalpur, Orissa-768020**

**FORM-V**

**ENVIRONMENTAL STATEMENT**

**Environmental statement for the financial year ending 31st March, 2023**

**PART-A**

1.	Name of Address of the owner/occupier of the industry operation or process (Name of the Project Officer/Sub-Area Manager & Office Address to be given)	Sri Gangadhar Mahto Chief Manager /Sub Area Manager , Orient Sub-Area ,Mine no-1&2 Post: Orient Colliery , Brajrjnagar Dist: Jharsuguda , Odisha.
2.	Industry Category:	Primary (Coal Mining Operation)
3.	Production Capacity (Coal Production during: the year (2022-23)	0.247 MTPY
4.	Year of Establishment:	1971
5.	Date of the last Environmental Statement: submitted	05 <sup>Th</sup> August 2022

**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):**

Sl.No.	Industrial / Mining	Consumption in m <sup>3</sup> /Day
1.a	Haul Road Dust Suppression	30
b	Dust Suppression at CHP/ Surface bunker	10
c	Dust Suppression at Siding	0
d	Fire Fighting	15
e	Workshop	5
f	Others	60
2.	Domestic	-
3.	<b>Total in m<sup>3</sup>/Day</b>	<b>120</b>

Name of Product	Water Consumption per unit of product (l/t)	
	2021-22	2022-23
COAL	158.95	171.43

**(II) Raw Material Consumption (Per tonne of Coal):**

Name of Raw Material	Consumption of Raw Material (per tonne of coal produced)	
	2021-22	2022-23
H.S.Diesel (l/t)	0.507 (Departmental + Contractual)	0.171 (Departmental + Contractual)
Petrol (l/t)	0.001	0.001
Lubricants (l/t)	0.07	0.109
Electricity (KWh/t)	88.89	116.16
Explosives (kg/t)	0.47	0.48

**PART-C**

**Pollution Discharged to Environment / Unit of Output**

(Parameter as specified in the Consent issued)

<b>Pollutants</b>	<b>Quantity of pollutants discharged (mass/day)</b>	<b>Concentrations of pollutants in discharges(mass/Volume)</b>			<b>Percentage variation from prescribed standards with reason</b>
<b>Water (Annual Average)</b>					
		Mine effluent	OGT Outlet	STP Outlet	
TSS (mg/l)	Not possible to quantify	39.33	-	-	Within prescribed standards
BOD (mg/l)		-	-	-	
COD (mg/l)		30.92	-	-	
pH		7.6	-	-	
O & G (mg/l)		<4.0	-	-	
<b>Air (Ambient air quality of one station – annual average) :</b>					
<b>Orient Mine no. 2</b>					
SPM ( $\mu\text{g}/\text{m}^3$ )	Not possible to quantify	198.58			Within prescribed standards
PM <sub>10</sub> ( $\mu\text{g}/\text{m}^3$ )		105.66			
PM <sub>2.5</sub> ( $\mu\text{g}/\text{m}^3$ )		46.75			
SO <sub>2</sub> ( $\mu\text{g}/\text{m}^3$ )		13.54			
NO <sub>x</sub> ( $\mu\text{g}/\text{m}^3$ )		15.79			

**Part-D**

**Hazardous Wastes**

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

<b>Hazardous waste</b>	<b>Total Quantity (kg)</b>	
	<b>During the previous financial year 2021-22</b>	<b>During the financial year 2022-23</b>
<b>(a) From process :</b>		
i. Burnt Oil in Workshops	1.05 KL	1.05 KL
ii. Oil soaked filters	10 Nos.	10 Nos.
iii. Waste containing oil	0.01Te	0.01Te
iv. Empty oil barrels	05 nos. (210 Liter drum)	05 nos. (210 Liter drum)
<b>(b) From pollution control facilities:</b>		
i. Oil emulsion recovery from Oil & Grease Trap	Not applicable	Not applicable
ii. Oily sludge	Not applicable	Not applicable
iii. Chemical Waste(if any)	NIL	NIL

**Part-E**

**Solid Wastes (Other than hazardous)**

<b>Particulars</b>	<b>Total Quantity (kg)</b>	
	<b>During the previous financial year 2021-22</b>	<b>During the financial year 2022-23</b>
<b>(a) From process (Top Soil &amp; overburden)</b>	Not applicable	Not applicable
<b>(b) From pollution control facilities (STP &amp; Sed-Pond Sludge)</b>	Not applicable	Not applicable
<b>(c) 1 - Quantity recycled or re-utilized (OB back filled)</b>	Not applicable	Not applicable
2 - Sold	Not applicable	Not applicable
3- Disposed	Not applicable	Not applicable

**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 waste.**

**(I) Hazardous Waste:**

Name of Hazardous Waste	Quantity generated in the year 2022-23	Disposal Practices
Burnt Oil etc (l) (from workshop)	1.05 KL	Deposited at Regional Store, Orient Area, wherefrom it is to be auctioned to authorized parties.
Waste containing oil	0.01Te	Stored in impervious container under cover shed for future disposal.
Oil soaked filters (kg) (from workshop)	10 nos.	The filters are stored in impervious container under covered shed for future disposal.
Empty oil barrels	05 nos. (210 Litre drum)	Deposited at Regional Store, Orient Area, wherefrom it is to be auctioned to authorized parties.
Oil & Grease (kg) (from ETP/OGT)	Not Applicable	Not Applicable
Oily Sludge (tons) (from ETP/OGT)	Not Applicable	Not Applicable
Oil emulsion	Not Applicable	Not Applicable
Chemical waste if any (kg)	NIL	NA
Battery (Nos.)	NIL	NA

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

**(II) Solid Wastes:**

Solid Waste	Quantity generated in the year 2022-23	Disposal Practices
Top Soil (m <sup>3</sup> )	Not Applicable	Not Applicable
OB (m <sup>3</sup> )	Not Applicable	Not Applicable
STP & Sed-Pond Sludge	Not Applicable	Not Applicable

**Land Reclamation & OB disposal – Progressive till March, 2023:**

	Area (Ha.)	OB Volume / Nos. of Plants
1) External OB Dump	Not Applicable	Not Applicable
2) Excavated land	Not Applicable	Not Applicable
3) Land affected (1+2)	Not Applicable	Not Applicable
4) Backfilled (Out of 2)	Not Applicable	Not Applicable
5) Land physically reclaimed (out of 3)	Not Applicable	Not Applicable
6) Land biologically reclaimed (out of 3)	Not Applicable	Not Applicable

**Part-G**

**Impact of pollution control measures on conservation of natural resource 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**

<b>Sl. No.</b>	<b>EMP Provisions</b>	<b>Whether provided or not</b>	<b>Remarks</b>
<b>1</b>	Water sprinkling and grading of all roads to minimize air-borne dust from vehicles.	Provided	Water spraying is being done along all the coal transportation roads with water tanker. Grading is being done as per requirement.
<b>2</b>	Biological reclamation of land.	Not Applicable	U/G Mine
<b>3</b>	Green belt around mine & infrastructure.	Provided	-
<b>4</b>	Drills fitted with dust control devices.	Not Applicable	U/G Mine
<b>5</b>	Dust suppression / dust extraction system to be provided in CHP.	Provided	There is noCHP at Mine No. 1&2. However, water spraying arrangement functions at discharge point of belt conveyor. In addition , Fog canon is being used for dust suppression at coal stock.
<b>6</b>	Mechanized coal transportation system.	Provided	Coal is being transported by Truck/Tipper of 18tonne capacity.

**Table- 1.2**  
**Water Pollution Control Measures**

<b>Sl. No.</b>	<b>EMP Provisions/Additional precautions</b>	<b>Whether provided or not</b>	<b>Remarks</b>
<b>1</b>	Mine Water is to be collected in central sump on dip side of pit. This will act as sedimentation lagoon.	Not Applicable at Surface.	U/G Mine
<b>2</b>	Run-off around reclamation area will be controlled by providing catch drains and sedimentation lagoon combination.	Not Applicable.	U/G Mine
<b>3</b>	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-utilized.	Not Applicable.	U/G Mine
<b>4</b>	Domestic waste water will be treated in screens,	Provided.	Septic Tank & Soak

	oxidation pond/ aerated lagoon. Sanitary waste to be disposed off into septic tank and soak -pit.		Pit has been provided.
5	Workshop effluents will be treated in Oil & Grease trap & sedimentation tank.	Not Applicable.	U/G Mine
6	Zero discharge from mine shall be maintained	-	U/G Mine
7	Piezometers shall be installed for measurement of under-ground water depth and its quality.	Provided	Piezometer MIP 03 installed beside IB Valley GM House.

**Table- 1.3**  
**Land Reclamation**

Sl. No.	EMP Provisions	Whether provided or not	Remarks
1	<b>Top Soil Management:</b> Proper stripping, storage and relocation of top soil.	Not Applicable	U/G Mine
2	<b>Physical Reclamation of OB dump:</b> Proper reshaping and regarding of top surface, providing drainage arrangements and top soil spreading for external and internal dumps.	Not Applicable	U/GMine
3	<b>Biological Reclamation:</b> Plantation of suitable species of herbs, shrubs & indigenous trees over technically reclaimed dumps.	Not Applicable	U/GMine

**IMPACT OF POLLUTION CONTROL MEASURES ON COST OF PRODUCTION**

Cost of environmental management during the year 2022-23 was Rs21.19 per tonne of Coal (Approx.)

**Part-H**

**Additional measures/ investment proposal for environment protection including abatement of pollution, prevention of pollution.**

Head	Amount Rs. (Approx.)
CMPDIL Bill Payment	20,00,000.00
Consent to Operate fee	3,48,000.00
CGWA	22,73,037.50
Others (Water Spraying and Plantation etc)	6,00,000.00
Total	52,21,037.5

**Part-I**

**Any other particular in respect of environmental protection and abatement of pollution.**






**Note: Please attach 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. & Environment Monitoring Stations.**





  
**Signature of the Project Officer,**  
(with seal)

Chief Manager (Mining)/S.A.M.  
Orient Sub- Area (Orient Area)



INDEX:-

- 01. SPRAYING PIPE LINE SHOWN THUS: 
- 02. PLANTATION SHOWN THUS: 
- 03. ROAD SHOWN THUS:- 
- 04. ENVIRONMENT MONITORING STATION:- 
- 05. ORIENT COLLIERY RLY SIDING, 

-  ← DIGITAL DISPLAY BOARD
-  ← FOG CANNON
-  ← AMBIENT AIR
-  ← NOISE MONITORING STATION

VIP GUEST HOUSE

WATER MONITORING STATION

BOUNDARY WALL

DIGITAL DISPLAY BOARD

REST SHELTER

WORK SHED

MINING GATE

AMBIENT AIR

NOISE MONITORING STATION

SECURITY ROOM

TRIP

POINTY STN

TIPPLER

PIPELINE

COAL STOCK NO-3

5TH INCLINE

SETTLING TANK

SUB STATION

PIT

7TH INCLINE

COAL STOCK NO-1

Belt CONVEYOR

COAL STOCK NO-2

M.C.L.  
 OA, OSA  
 ORIENT COLLIERY, 182 MDS  
 ENVIRONMENTAL PLAN  
 NOT TO SCALE

Recd. 17-8-23  
 COLLIERY SURVEYOR  
 OC 182 MINE

John 17/8/23  
 COLLIERY MANAGER  
 OC 182 MINE

ORIENT COLLIERY RLY SIDING

SECURITY ROOM

SURFACE DISCHARGE

HAULING MOBILE

TO BRTN STA.