



**Odisha  
Coal and  
Power  
Limited**

**Odisha Coal and Power Limited**  
(A Government of Odisha Company)  
CIN U10100OR2015SGC018623  
Website: www.ocpl.org.in

**Letter No:** OCPL/757

**Date:** 30/09/2020

To  
The Member Secretary,  
State Pollution Control Board, Odisha  
Paribesh Bhawan, A/118  
Nilakantha Nagar, Unit-VIII  
Bhubaneswar-751012

**Sub:** Submission of Annual Environmental Statement in Form –V for the year 2019-2020 of Odisha Coal & Power Ltd. for Manoharpur Coal Mine Project

**Ref:** (i) Environmental Clearance Letter No. J-11015/139.2008-IA.II(M) dated 21.02.2014

(ii) Environment Clearance transferred in favour of OCPL vide Letter No: J-11015/139/2008-IA-II(M) dated.30.12.2015.

(iii) Amendment in EC by MoEF&CC vide letter dated 06.11.2019

(iv) SPCB Consent to Operate Order No. 2851 vide letter No.2208/IND-I-CON-6454 dated 28.02.2018

Sir,

In reference to the letters cited above, please find enclosed the annual Environmental Statement in Form –V for the financial year 2019-2020 for Manoharpur Coal Mine Project of Odisha Coal & Power Ltd. situated at Village Manoharpur, Tehsil: Hemgir, IB Valley Coal Field in Sundargarh District, Odisha.

This is for your kind perusal.

Thanking you.

Yours faithfully,

Authorized Signatory

(AGM-Mech.)

**Encl:** As above.

**Copy to:** i. The Joint Director (s), Regional Office, Eastern Region  
Ministry of Environment & Forest and Climate Change (MoEF&CC)  
A-3, Chandrasekharpur, Bhubaneswar, Odisha.  
ii. The Regional Officer, State Pollution Control Board, Jharsuguda, Odisha.

**ENVIRONMENTAL STATEMENT  
IN FORM-V**

(Under Rule-14, Environmental protection Rules, 1986)

**(2019-2020)**

**FOR**

**Manoharpur Opencast Coal Mine Project of  
Odisha Coal & Power Limited**



Odisha Coal and Power Limited,  
Zone-A, Ground Floor, Fortune Tower,  
Chandrasekharpur, Bhubaneswar-751023, Odisha

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## EXECUTIVE SUMMARY

- E-1 Odisha Coal and Power Limited (OCPL) is a company incorporated under the Companies Act 2013, India. OCPL is a Government company as defined by Section 2(45) of the Companies Act, 2013, which was formed as a joint venture Company of Odisha Power Generation Corporation Limited (OPGC) and Odisha Hydro Power Corporation Limited (OHPC), with a shareholding pattern of 51% and 49% respectively. OCPL has been allocated with two coal blocks, namely Manoharpur and Dip-side of Manoharpur by Ministry of Coal, Government of India. The coal blocks are located in IB Valley Area in Sundargarh District, Odisha.
- E-2 In compliance with the Environment (Protection) Rules, 1986, Environmental statement of Manoharpur Opencast Coal Mine Project for the FY 2019-2020 has been prepared. This report is prepared with a view to fulfil the statutory obligations laid down by Ministry of Environment, Forests and Climate Change (MoEF &CC).



## **CHAPTER – I**

### **INTRODUCTION**

#### **1.1. GENESIS:**

The environmental statement for each financial year ending 31<sup>st</sup> March in Form-V is mandated to be submitted by the Project Proponent for the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986 and as amended subsequently, and shall also be uploaded in the Company's web-site along with the compliance of EC conditions and shall be sent to the respective Regional Offices of the MoEF &CC by E-mail.

In compliance with the above, the work of Environmental Statement ending with 31<sup>st</sup> March, 2020 in Form-V for Manoharpur Opencast Coal Mine Project of OCPL has been prepared.

#### **1.2. COAL BLOCK/ PROJECT DESCRIPTION:**

OCPL has been allocated with two coal blocks, namely Manoharpur and Dip-side of Manoharpur by Ministry of Coal, Government of India. The coal blocks are located in IB Valley Coal Field in Sundargarh District, Odisha. Manoharpur and Dip side of Manoharpur blocks are contiguous blocks having a common boundary. Manoharpur block is fully explored and Dip side of Manoharpur block is regionally explored at the time of allocation. Later, the exploration of Dip-side of Manoharpur is completed and an Integrated Geological Report has been prepared by CMPDI. As per the IGR, the net geological reserve of Manoharpur coal block is 252 MT and the net geological reserve of Dip- side Manoharpur coal block is 726 MT. The ultimate depth of the Manoharpur coal mine will be around 214m. OCPL has planned to mine the Manoharpur coal block by shovel Dumper combination for OB removal & surface miner for coal production. There is a plan to have IPCC (In Pit Crushing & conveying) system as a future technology upgradation.

##### **1.2.1. COMMUNICATION:**

Manoharpur block is about 45km away from Sundargarh along Sundargarh-Hemgir road which passes near the block. It is also connected by black top road with two important towns of Odisha viz. Rourkela (145km) and Jharsuguda (75km). The nearest railway station is Hemgir, lying on the Mumbai-Howrah main line and is about 20 km. away from Manoharpur Block.





### 1.3. ENVIRONMENTAL SCENARIO:

Currently, monthly environmental monitoring i.e. Ambient Air Quality, Ambient Noise Quality, Ground Water Quality, Surface Water Quality etc. is being carried out by MoEF&CC/NABL/OSPCB accredited laboratory i.e. M/s Visiontek Consultancy Services Pvt. Ltd. in the core zone and buffer zone of the proposed project site. Also, the daily meteorological data (i.e. Temperature, RH, Rainfall etc.) is being collected on site. The monitoring reports showing the results of above mentioned environmental parameters is being submitted monthly basis to Odisha State Pollution Control Board (OSPCB). The copy of acknowledgement receipt for the latest months Month Jan, Feb and March'20 in this regards is attached as **Annexure 1** for your ready reference.

Further in addition to above, we would like to submit that, the mine has commenced production of coal and started dispatching of same to Kanika siding of MCL by road w.e.f. 14-12-2019. During the FY 2019-20, approx. 1 MTPA coal has been produced from the Manoharpur Coal mine block. It is pertinent to mention that transportation of coal to Kanika siding of MCL is being done in compliance to limits as prescribed by MoEF&CC and in accordance with the Clause 8.5 of the Allotment Agreement signed with Ministry of Coal (MoC) following the norms/standards as prescribed by the Statutory Authorities.



## CHAPTER – II

### ENVIRONMENTAL STATEMENT

#### FORM – V

Environmental Statement for the financial year ending 31<sup>st</sup> March, 2019

#### PART – A

a. NAME AND ADDRESS OF THE OWNER/ OCCUPIER

Name : Odisha Coal and Power Limited  
:  
Address : Corporate Office : Zone A, Ground Floor, Fortune  
Towers, Chandrasekharpur, Bhubaneswar – 751023  
:  
Site Office: Odisha Coal and Power Limited, Near Indian  
Oil Petrol Pump, At / Po – Hemgir, Sundargarh  
Place : Manoharpur Opencast Coal Mine Project  
Tehsil : Hemgir  
District : Sundargarh  
State : Odisha

- b. INDUSTRY CATEGORY : Coal Mining – Red Category  
c. PRODUCTION CAPACITY (Current Year) : 8 MTY (Approx. 1 MTY)  
d. YEAR OF ESTABLISHMENT : 2016  
e. DATE OF THE LAST ENVIRONMENTAL STATEMENT SUBMITTED : 03.01.2020



**PART – B**  
**WATER AND RAW MATERIAL CONSUMPTION**

**(I) WATER CONSUMPTION (Cu. m/day):**

		<b>During Previous Financial Year (2018-2019) m3/day</b>	<b>During Current Financial Year (2019-2020) m3/day</b>
<b>A</b>	<b>MINING</b>	<b>MINING (Water Utilized)</b>	
i.	Dust Suppression (Haul Road)	41	55
ii.	Dust Suppression (Coal Production)	-	11
iii.	Fire fighting	-	1
iv.	Workshop	-	3
v.	Others activities	0.8	1
<b>B.</b>	<b>COOLING</b>	-	-
<b>C.</b>	<b>DOMESTIC PURPOSE</b>	17	39
	<b>TOTAL</b>	<b>58.8</b>	<b>110</b>

**WATER CONSUMPTION PER UNIT OF PRODUCT (Litre/Tonne)**

<b>Name of product</b>	<b>Water consumption per unit of product (ℓ/t)</b>	
	<b>During Previous financial year (2018-2019)</b>	<b>During current financial year (2019-2020)</b>
ROM Coal	Coal Production - NIL The mine had not commenced coal production; only top soil and over burden were excavated from few portion of mine to expose the coal surface.	Coal Production – Approx. 1 MTPA Water Consumed (ℓ/t) – 40

Note- Only for Production Purpose





(II) RAW MATERIAL CONSUMPTION (Per Tonne of Coal):

Sr. No.	Name of raw material	Consumption of raw material (per tonne of coal produced)	
		During Previous Financial Year (2018-2019)	During Current Financial Year (2019-2020)
1.	Lubricants (ℓ/t)	NIL	0.007
2.	Explosive (kg/t)	NIL	2.55
3.	Electricity (unit/t)	-	0.046

As mentioned above that the mine had not commenced coal production during FY 2018-19; Only top soil and over burden were excavated from few portion of mine to expose the coal surface.

PART – C

POLLUTION GENERATED

Pollution	Quantity of pollutants discharged	Concentration of Pollutants in discharges	Percentage variation from prescribed standards with reasons
WATER	<u>Mine Effluent</u> – NIL as the effluent generated from the mine was treated through the settling cum sedimentation tank within the project boundary and the treated effluent was utilized for water sprinkling purpose within the mine.	Not Possible to Quantify	Within the prescribed standards.
	<u>Domestic Effluent</u> – The domestic effluent is being treated via provision of Septic Tank through the mobile STP tanker.		
AIR*	Annual Average (Ambient Air Quality of One Station located within the Project Boundary – Vocational Training Centre (VTC))		
PM <sub>10</sub>	Not Possible to Quantify	58.19 µg/m <sup>3</sup>	Within the prescribed standards under NAAQS, 2009.
PM <sub>2.5</sub>		31.02 µg/m <sup>3</sup>	
SO <sub>x</sub>		18.89 µg/m <sup>3</sup>	
NO <sub>x</sub>		25.64 µg/m <sup>3</sup>	

\*Note: The environmental parameters for ambient air quality (i.e. PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>x</sub>, NO<sub>x</sub>) are within the permissible limits as prescribed under NAAQS, 2009. The monthly monitoring has been carried out by MoEF&CC/NABL/OSPCB accredited laboratory i.e. M/s Visiontek Consultancy Services Pvt. Ltd. in the core zone (4 locations) and buffer zone (4 locations) and the analysis reports are regularly being submitted to OSPCB (HO-BBSR and RO-JSG). The latest report in this regard for the month February'20 and March'20 is enclosed as **Annexure 2** for your kind reference.

**PART – D**

**HAZARDOUS WASTE**

**(As specified under Hazardous Waste Management and Handling Rules, 1989 & subsequent latest notification on HWM Rules, 2016)**

SI	Hazardous waste	Total Quantity	
		During Previous Financial Year (2018-2019)	During Current Financial Year (2019-2020)
A.	From process		From process
	i) Used oil / Spent oil from Machineries or workshop etc.	The quantity of generated used oil / spent was very less and has been handed over to local vender for further reprocess/ reuse purpose.	i) 5677 Litres
	ii) Used Batteries		ii) 70 Nos.
	iii) Oil soaked filters		iii) 286 Nos.
B.	From pollution control facilities i) Oily Sludge	NIL	i) 649 Kg

**PART – E**

**SOLID WASTE**

SI	Particulars	Total quantity (In Million Cu.m)	
		During Previous Financial Year (2018-2019)	During Current Financial Year (2019-2020)
a.	From process (Top Soil and Over Burden from Mining)	1.81 MCum	2.49 MCum
b.	From pollution control facilities	NIL	NIL
c.	Quantity recycled or reutilized	The excavated top soil and OB was stored at the earmarked location as per the approved Mining Plan.	The excavated top soil and OB was stored at the earmarked location as per the approved Mining Plan except few quantity of OB & top soil which were utilized in mine development activities.



**PART – F**

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

**(I) Hazardous Waste**

<b>Name of Hazardous waste</b>	<b>Quantity generated in the Year 2019-20</b>	<b>Disposal Practices</b>
Used Oil / Spent Oil from machineries/ Workshop / DG sets etc.	5677 Litres	The quantity of generated used oil / spent oil has been stored at site at an earmarked place and will be handed over to authorized vender of OSPCB/CPCB for further Recycle/ Reprocess/ Reuse purpose.
Used Batteries	70 Nos.	Will be disposed as per applicable norms/standards as prescribed by the competent authorities.
Oil soaked filters	286 Nos.	
Oily Sludge	649 Kg.	

**(II) Solid Waste**

<b>Name of Hazardous waste</b>	<b>Quantity generated in the Year 2019-20</b>	<b>Disposal Practices</b>
Top Soil and Over Burden (OB)	2.49 Mcum	The excavated top soil and OB was stored at the earmarked location as per the approved Mining Plan except few quantity of OB & top soil which were utilized in mine development activities.





## 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 the following pollution control measures have been implemented at site.

#### 1. AIR POLLUTION CONTROL MEASURES:

The following measures have been taken to control air pollution.

Sr. No.	EMP Provisions	Whether Provided or Not	Remarks
1	Water Sprinkling on haul roads and coal transportation roads, Coal Stock yard, OB dumps etc.	Provided	Total 6 nos. of water tankers of capacity 8KL and 10 KL have been deployed at site for water sprinkling purpose.
2	Development of Green Belt	Under Progress	Approx. 3064 nos. of plant species have been planted under the development of green belt in & around the site comprises of native species i.e. mango, amla, neem, jack fruit, guava, ashok, jamun, harida etc.
3	Grass carpeting on top soil dump	Provided	To reduce the soil erosion from top soil dump area, grass carpeting has been provided.
4	Improved maintenance of plant & machinery	Provided	-

#### 2. WATER POLLUTION CONTROL MEASURES:

The following measures will be taken to control water pollution from mine:

Sr. No.	EMP Provisions	Whether Provided or Not	Remarks
1	Mine water is being collected in sump provided within mine pit will act as sedimentation lagoon.	Provided	Sump will act as sedimentation lagoon to settle sediment particles in sump.
2	Surface run-off from OB dump is being collected through catch drains/foot drains connected to sedimentation pond. The clear	Provided	



Sr. No.	EMP Provisions	Whether Provided or Not	Remarks
	water from this pond will be re-utilized for dust suppression purpose.		
3	Domestic waste water is being treated through the mobile tankers via provision of septic tank.	Provided.	

### 3. NOISE POLLUTION CONTROL MEASURES:

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

- i) Regular maintenance of machines and other equipment at workshop.
- ii) Providing green belt in & around the vacant spaces of mine.

### 4. LAND DEGRADATION CONTROL MEASURES

Overburden will be backfilled in the de-coaled area and adequate plantation measures will be taken up, land will be restored as per approved mine closure plan.

## PART – H

### ADDITIONAL INVESTMENT PROPOSAL FOR ENVIRONMENTAL PROTECTION INCLUDING ABATEMENT OF POLLUTION

OCPL will do the necessary investment as per the Environment Management Plan and Environment Clearance issued by MoEF &CC.

## PART – I

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

As mentioned above in Chapter 1, The Environmental Monitoring is being carried out by MoEF&CC/NABL/OSPCB accredited laboratory M/s Visiontek Consultancy Services Pvt. Ltd. in the core zone and buffer zone of the proposed project site as per the guideline of MoEF &CC/CPCB and based on the result there of, company will take necessary pollution preventive action, if needed.







OCPL

Odisha  
Coal and  
Power  
Limited

Odisha Coal and Power Limited

(A Government of Odisha Company)

CIN U10100OR2015SGC018623

Website www.ocpl.org.in

Letter No. – MCMP/Env/2020/169

Date - 15-02-2020

To,

The Member Secretary,  
State Pollution Control Board (SPCB),  
Paribesh Bhawan, A/118,  
Nilkantha Nagar, Unit-VIII  
Bhubaneswar-751012  
Odisha

**Sub: Submission of Monthly Environmental Monitoring Reports in respect of Manoharpur Coal Mine Project of Odisha Coal and Power Limited**

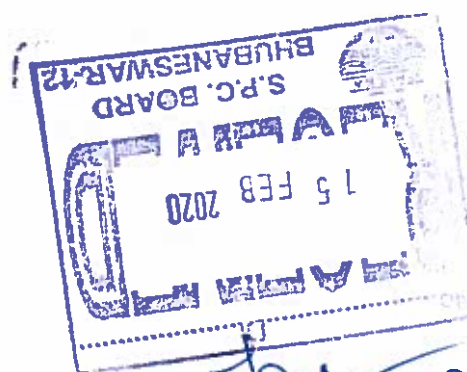
Dear Sir,

This has reference to the Consent to Operate (CTO) issued by your good office vide letter no. 2208/IND-I-CON-6454 dated 28.02.2018/Consent Order No. 2851, we hereby submit the environment monitoring reports of Ambient Air Quality, Noise, Ground water, Meteorological Data etc. for the Manoharpur Coal Mine Project of Odisha Coal and Power Limited for the month of January, 2020. Also, the details of generated solid waste (Top soil / OB) from the said mine project is attached as Annexure 1.

This is for your kind perusal.

Thanking You  
Yours Faithfully,  
For Odisha Coal and Power Limited

*SK*  
*15/2/2020*  
Authorized Signatory  
(AGM - Mechanical)  
Manoharpur Coal Mine Project



*15.02.20*

Encl: as above

CC: The Regional Officer, State Pollution Control Board, Jharsuguda (with enclosure).



Odisha  
Coal and  
Power  
Limited

(R)

Odisha Coal and Power Limited  
(A Government of Odisha Company)  
CIN: U10100OR2015SGC018623  
Website: www.ocpl.org.in

Letter No. – MCMP/Env/2020/235

Date - 11.03.2020

To,

The Member Secretary,  
State Pollution Control Board (SPCB),  
Paribesh Bhawan, A/118,  
Nilkantha Nagar, Unit-VIII  
Bhubaneswar-751012  
Odisha

**Sub: Submission of Monthly Environmental Monitoring Reports in respect of Manoharpur Coal Mine Project of Odisha Coal and Power Limited**

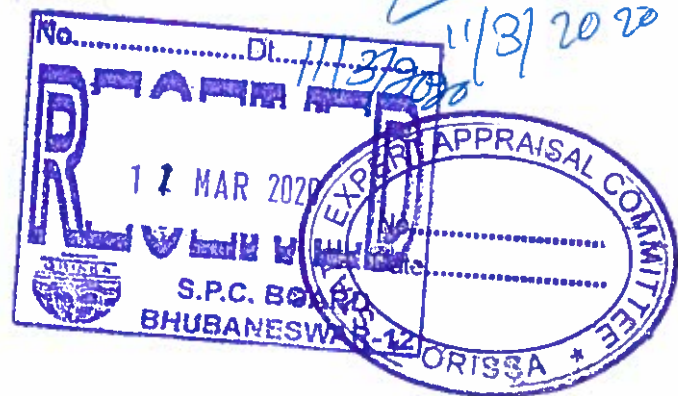
Dear Sir,

This has reference to the Consent to Operate (CTO) issued by your good office vide letter no. 2208/IND-I-CON-6454 dated 28.02.2018/Consent Order No. 2851, we hereby submit the environment monitoring reports of Ambient Air Quality, Noise, Ground water, Meteorological Data etc. for the Manoharpur Coal Mine Project of Odisha Coal and Power Limited for the month of February, 2020. Also, the details of generated solid waste (Top soil / OB) from the said mine project is attached as Annexure 1.

This is for your kind perusal.

Thanking You  
Yours Faithfully,  
For Odisha Coal and Power Limited

*gk*  
11/3/2020  
Authorized Signatory  
(AGM - Mechanical)  
Manoharpur Coal Mine Project



Encl: as above

CC: The Regional Officer, State Pollution Control Board, Jharsuguda (with enclosure).



**Odisha  
Coal and  
Power  
Limited**

**Odisha Coal and Power Limited**

(A Government of Odisha Company)

CIN: U10100OR2015SGC018623

Website: www.ocpl.org.in

Letter No. – MCMP/Env/2020/358

Date - 02/05/2020

To,

The Member Secretary,  
State Pollution Control Board (SPCB),  
Paribesh Bhawan, A/118,  
Nilkantha Nagar, Unit-VIII  
Bhubaneswar-751012  
Odisha

**Sub: Submission of Compliance Document's including Monthly Environmental Monitoring Reports in respect of Manoharpur Coal Mine Project of Odisha Coal and Power Limited**

Dear Sir,

This has reference to the Consent to Operate (CTO) issued by your good office vide letter no. 2208/IND-I-CON-6454 dated 28.02.2018/Consent Order No. 2851, we hereby submit the following compliances:

Sr. No	CTO Condition no.	Particular Details	Reply (Compliance)																					
1	Point no. C: (in Table)	<table><tr><th colspan="7">Details of solid waste permitted in the following manner</th></tr><tr><th>Sl. No</th><th>Type of solid waste</th><th>Quantity generated (TPD)</th><th>Quantity to be reused onsite (TPD)</th><th>Quantity to be reused off site (TPD)</th><th>Quantity disposed off (TPD)</th><th>Description of disposal site</th></tr><tr><td></td><td>Top soil / over burden</td><td></td><td></td><td></td><td></td><td></td></tr></table>	Details of solid waste permitted in the following manner							Sl. No	Type of solid waste	Quantity generated (TPD)	Quantity to be reused onsite (TPD)	Quantity to be reused off site (TPD)	Quantity disposed off (TPD)	Description of disposal site		Top soil / over burden						Kindly refer <b>Annexure 1.</b>
	Details of solid waste permitted in the following manner																							
	Sl. No	Type of solid waste	Quantity generated (TPD)	Quantity to be reused onsite (TPD)	Quantity to be reused off site (TPD)	Quantity disposed off (TPD)	Description of disposal site																	
	Top soil / over burden																							
Point no. D: (GC Red A – 1)	The applicant shall analyse the emissions every month for the parameters indicated in Table B & C as mentioned in this order and shall furnish the report thereof to the Board by the 10 <sup>th</sup> of the succeeding month.																							
2	Point no. D: (GC Red A – 2)	The applicant shall provide and maintain at his own cost three ambient air quality monitoring stations for monitoring Suspended Particulate Matter, Sulphor Dioxide, Oxides of Nitrogen, Hydro-Carbon, Carbon-Monoxide and monitor the same once in a day/week/fortnight/month. The data collected shall be maintained in a register and a monthly extract be furnished to the Board	OCPL would like to submit that the ambient air quality is being monitored regularly in core zone (4 locations) and buffer zone (4 locations) on fortnightly basis at each location by MoEF&CC/NABL/OSPCB accredited laboratory M/s Visiontek Consultancy Services Pvt. Ltd. The data / result obtained																					

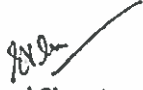
			<p>from the analysis shows that all monitored parameters i.e. PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>x</sub>, NO<sub>x</sub> are within the limits as prescribed by MoEF&amp;CC/CPCB. The copy of monitoring report in this regard for the month of March 2020 is attached herewith as <b>Annexure 2</b> for your kind consideration.</p> <p><b>Further, we would like to mention that due to Pandemic disease COVID 19, the monthly environment monitoring has not been carried out for the month of April 2020. This is for your kind information and further record please.</b></p>
3	Point no. D: (GC Red A – 3)	The applicant shall provide and maintain at his own cost a meteorological station to collect the data on wind velocity, direction, temperature, humidity, rainfall, etc. and the daily reading shall be recorded and the extract sent to the Board once in a month	Temperature, humidity, rainfall etc. are being daily recorded at site and a monthly extract of the same is attached as <b>Annexure 2.</b>
4	Point no. D: (GC Red A – 4)	<p>The applicant shall forward the following information to the Member Secretary, State Pollution Control Board, Orissa, Bhubaneswar regularly.</p> <p>a. Report of analysis of stack monitoring, ambient air quality monitoring meteorological data as required every month.</p> <p>b. Progress on planting of trees quarterly.</p>	<p>a. ambient air quality monitoring meteorological data – Kindly Refer <b>Annexure 2.</b></p> <p>b. Progress on planting of trees – Kindly refer <b>Annexure 3.</b></p>
5	Point no. E: (SC-13)	Adequate Ambient Air Quality Monitoring Stations (at least 04 nos.) shall be established in core as well as in buffer zone and locations shall be decided in consultation with the Regional Officer, State Pollution Control Board. Monitoring of parameters shall as SPM, PM <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>2</sub> and NO shall be done.	Kindly refer Point no. 2 as mentioned above.
6	Point no. E: (SC-14)	Monitoring of Ambient Air Quality of the mine shall be done once in a fortnight (24 hourly) and data shall be submitted to the State Pollution Control Board once in six months.	Kindly refer Annexure 2.
7	Point no. E: (SC-23)	Regular monitoring of ground water level and quality should be carried out by establishing a network of existing wells. The monitoring should be done four times a year in pre-monsoon (April/May), monsoon (August), post-monsoon (November) and winter (January) seasons. Data thus collected should be submitted to the Board quarterly.	OCPL would like to submit that the monthly ground water quality monitoring is being carried out at 4 locations (2 locations in core zone and another 2 locations in buffer zone) by



			MoEF&CC/NABL/OSPCB accredited laboratory M/s Visiontek Consultancy Services Pvt. Ltd. The data / result obtained from the analysis shows that all monitored parameters are within the limits as prescribed by ISO/MoEF&CC. The copy of monitoring report in this regard is attached herewith as Annexure 2 for your kind consideration.
8	Point no. E: (SC-26)	Plantation of trees shall be undertaken in the colony/ township, over top soil dumps, OB dumps, along the side of haul road and in other areas of the mines not being utilized for mining activities. The mine shall take up avenue plantation and plantation in nearby village areas in consultation with DFO/Horticulture Department. The plantation details shall be submitted to the Board before end of March every year.	Kindly refer Annexure 3.
9	Point no. E: (SC-27)	The coal production status of the stipulated conditions shall be submitted to the Board latest by 30th April every year	The monthly coal production status of the mine for the FY 2019-20 is attached herewith as Annexure 4 for your ready reference.
10	Point no. E: (SC-29)	The mine shall submit a declaration by 30th of April every year that all pollution control systems are in good condition, operated and ambient air quality as well as wastewater quality conforms to the prescribed standards	Kindly refer Annexure 5.

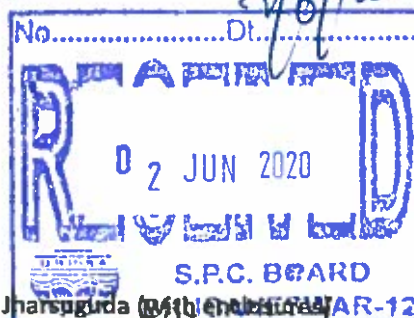
This is for your kind perusal.

Thanking You  
Yours Faithfully,  
For Odisha Coal and Power Limited

  
Authorized Signatory  
(AGM - Mechanical)  
Manoharpur Coal Mine Project

Encl: as above

CC: The Regional Officer, State Pollution Control Board, Jhansuguda (with enclosures)







## ANNEXURE 2

Ref: Envlab/19/R-8178

Date: 03.03.2020

### AAQ MONITORING REPORT FOR FEBRUARY-2020 (CORE ZONE)

1. Name of Project : Manoharpur Open Cast Coal Mine Project
2. Name of Industry : Odisha Coal and Power Limited (OCPL), Sundargarh
3. Monitoring Instruments : RDS (APM 460 BL), FPS (APM 550)
4. Sampling Location : AAQMS-1:BGR Office Camp
5. Sample collected by : VCSPL representative in presence of OCPL representative

Date	PM <sub>10</sub> ( $\mu\text{g}/\text{m}^3$ )	PM <sub>2.5</sub> ( $\mu\text{g}/\text{m}^3$ )	SO <sub>2</sub> ( $\mu\text{g}/\text{m}^3$ )	NO <sub>x</sub> ( $\mu\text{g}/\text{m}^3$ )
06.02.2020	72.0	39.7	22.7	29.6
20.02.2020	68.0	37.5	21.2	27.5
CPCB, New Delhi AAQ Standard	100	60	80	80
Testing Method	Gravimetric IS 5182: Part 23	Gravimetric EPA 1998	Improved West & Geake Method IS 5182 (Part-2) RA2017	Modified Jacob & Hochheiser Method IS 5182 (Part-6) RA2017

**BDL Values:** SO<sub>2</sub> < 4  $\mu\text{g}/\text{m}^3$ , NO<sub>x</sub> < 9  $\mu\text{g}/\text{m}^3$





Ref: Envlab/19/R-8179

Date: 03.03.2020

## AAQ MONITORING REPORT FOR FEBRUARY-2020 (CORE ZONE)

6. Name of Project : Manoharpur Open Cast Coal Mine Project  
7. Name of Industry : Odisha Coal and Power Limited (OCPL), Sundargarh  
8. Monitoring Instruments : RDS (APM 460 BL), FPS (APM 550)  
9. Sampling Location : AAQMS-2: Vocational Training Center  
10. Sample collected by : VCSPL representative in presence of OCPL representative

Date	PM <sub>10</sub> (µg/m <sup>3</sup> )	PM <sub>2.5</sub> (µg/m <sup>3</sup> )	SO <sub>2</sub> (µg/m <sup>3</sup> )	NO <sub>x</sub> (µg/m <sup>3</sup> )
07.02.2020	59.0	33.6	17.2	23.2
19.02.2020	67.0	37.2	19.3	25.7
CPCB, New Delhi AAQ Standard	100	60	80	80
Testing Method	Gravimetric IS 5182: Part 23	Gravimetric EPA 1998	Improved West & Geake Method IS 5182 (Part-2) RA2017	Modified Jacob & Hochheiser Method IS 5182 (Part-6) RA2017

BDL Values: SO<sub>2</sub> < 4 µg/m<sup>3</sup>, NO<sub>x</sub> < 9 µg/m<sup>3</sup>





Ref: Envlab/19/R-8180

Date: 03.03.2020

## AAQ MONITORING REPORT FOR FEBRUARY-2020 (CORE ZONE)

1. Name of Project : Manoharpur Open Cast Coal Mine Project
2. Name of Industry : Odisha Coal and Power Limited (OCPL), Sundargarh
3. Monitoring Instruments : RDS (APM 460 BL), FPS (APM 550)
4. Sampling Location : AAQMS-3: CHP OCPL Office
5. Sample collected by : VCSPL representative in presence of OCPL representative

Date	PM <sub>10</sub> (µg/m <sup>3</sup> )	PM <sub>2.5</sub> (µg/m <sup>3</sup> )	SO <sub>2</sub> (µg/m <sup>3</sup> )	NO <sub>x</sub> (µg/m <sup>3</sup> )
07.02.2020	70.0	37.8	22.3	29.3
20.02.2020	64.0	34.6	20.7	28.4
CPCB, New Delhi AAQ Standard	100	60	80	80
Testing Method	Gravimetric IS 5182: Part 23	Gravimetric EPA 1998	Improved West & Genke Method IS 5182 (Part-2) RA2017	Modified Jacob & Hochheiser Method IS 5182 (Part-6) RA2017

BDL Values: SO<sub>2</sub> < 4 µg/m<sup>3</sup>, NO<sub>x</sub> < 9 µg/m<sup>3</sup>





Ref: Envlab/19/R-8181

Date: 03.03.2020

## AAQ MONITORING REPORT FOR FEBRUARY-2020 (CORE ZONE)

1. Name of Project : Manoharpur Open Cast Coal Mine Project
2. Name of Industry : Odisha Coal and Power Limited (OCPL), Sundargarh
3. Monitoring Instruments : RDS (APM 460 BL), FPS (APM 550)
4. Sampling Location : AAQMS-4: OCPL Mines Area
5. Sample collected by : VCSPL representative in presence of OCPL representative

Date	PM <sub>10</sub> (µg/m <sup>3</sup> )	PM <sub>2.5</sub> (µg/m <sup>3</sup> )	SO <sub>2</sub> (µg/m <sup>3</sup> )	NO <sub>x</sub> (µg/m <sup>3</sup> )
06.02.2020	73.0	41.4	23.5	28.3
19.02.2020	80.0	45.2	24.7	29.7
CPCB, New Delhi AAQ Standard	100	60	80	80
Testing Method	Gravimetric IS 5182: Part 23	Gravimetric EPA 1998	Improved West & Genke Method IS 5182 (Part-2) RA2017	Modified Jacob & Hochheiser Method IS 5182 (Part-6) RA2017

BDL Values: SO<sub>2</sub> < 4 µg/m<sup>3</sup>, NO<sub>x</sub> < 9 µg/m<sup>3</sup>



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Ref: Envlab/19/R-8182

Date: 03.03.2020

## AAQ MONITORING REPORT FOR FEBRUARY-2020 (BUFFER ZONE)

1. Name of Project : Manoharpur Open Cast Coal Mine Project
2. Name of Industry : Odisha Coal and Power Limited (OCPL), Sundargarh
3. Monitoring Instruments : RDS (APM 460 BL), FPS (APM 550)
4. Sampling Location : AAQMS-1: Dulanga Village
5. Sample collected by : VCSPL representative in presence of OCPL representative

Date	PM <sub>10</sub> ( $\mu\text{g}/\text{m}^3$ )	PM <sub>2.5</sub> ( $\mu\text{g}/\text{m}^3$ )	SO <sub>2</sub> ( $\mu\text{g}/\text{m}^3$ )	NO <sub>x</sub> ( $\mu\text{g}/\text{m}^3$ )
12.02.2020	57.0	31.8	11.8	15.3
25.02.2020	63.0	35.3	12.5	16.8
CPCB, New Delhi AAQ Standard	100	60	80	80
Testing Method	Gravimetric IS 5182: Part 23	Gravimetric EPA 1998	Improved West & Geake Method IS 5182 (Part-2) RA2017	Modified Jacob & Hochheiser Method IS 5182 (Part-6) RA2017

BDL Values: SO<sub>2</sub> < 4  $\mu\text{g}/\text{m}^3$ , NO<sub>x</sub> < 9  $\mu\text{g}/\text{m}^3$







Ref: Envlab/19/R-8183

Date: 03.03.2020

## AAQ MONITORING REPORT FOR FEBRUARY-2020 (BUFFER ZONE)

1. Name of Project : Manoharpur Open Cast Coal Mine Project
2. Name of Industry : Odisha Coal and Power Limited (OCPL), Sundargarh
3. Monitoring Instruments : RDS (APM 460 BL), FPS (APM 550)
4. Sampling Location : AAQMS-2: Kalamegha Village
5. Sample collected by : VCSPL representative in presence of OCPL representative

Date	PM <sub>10</sub> (µg/m <sup>3</sup> )	PM <sub>2.5</sub> (µg/m <sup>3</sup> )	SO <sub>2</sub> (µg/m <sup>3</sup> )	NO <sub>x</sub> (µg/m <sup>3</sup> )
11.02.2020	56.0	30.6	10.1	14.8
21.02.2020	51.0	28.8	10.7	13.5
CPCB, New Delhi AAQ Standard	100	60	80	80
Testing Method	Gravimetric IS 5182: Part 23	Gravimetric EPA 1998	Improved West & Geake Method IS 5182 (Part-2) RA2017	Modified Jacob & Hochheiser Method IS 5182 (Part-6) RA2017

BDL Values: SO<sub>2</sub> < 4 µg/m<sup>3</sup>, NO<sub>x</sub> < 9 µg/m<sup>3</sup>





Ref: Envlab/19/R-8184

Date: 03.03.2020

## AAQ MONITORING REPORT FOR FEBRUARY-2020 (BUFFER ZONE)

1. Name of Project : Manoharpur Open Cast Coal Mine Project
2. Name of Industry : Odisha Coal and Power Limited (OCPL), Sundargarh
3. Monitoring Instruments : RDS (APM 460 BL), FPS (APM 550)
4. Sampling Location : AAQMS-3: Paramanandpur Village
5. Sample collected by : VCSPL representative in presence of OCPL representative

Date	PM <sub>10</sub> ( $\mu\text{g}/\text{m}^3$ )	PM <sub>2.5</sub> ( $\mu\text{g}/\text{m}^3$ )	SO <sub>2</sub> ( $\mu\text{g}/\text{m}^3$ )	NO <sub>x</sub> ( $\mu\text{g}/\text{m}^3$ )
12.02.2020	59.0	33.0	9.7	12.8
25.02.2020	54.0	30.2	10.4	14.6
CPCB, New Delhi AAQ Standard	100	60	80	80
Testing Method	Gravimetric IS 5182: Part 23	Gravimetric EPA 1998	Improved West & Geake Method IS 5182 (Part-2) RA2017	Modified Jacob & Hochheiser Method IS 5182 (Part-6) RA2017

BDL Values: SO<sub>2</sub> < 4  $\mu\text{g}/\text{m}^3$ , NO<sub>x</sub> < 9  $\mu\text{g}/\text{m}^3$





Ref: Envlab/19/R-8185

Date: 03.03.2020

## AAQ MONITORING REPORT FOR FEBRUARY-2020 (BUFFER ZONE)

1. Name of Project : Manoharpur Open Cast Coal Mine Project
2. Name of Industry : Odisha Coal and Power Limited (OCPL), Sundargarh
3. Monitoring Instruments : RDS (APM 460 BL), FPS (APM 550)
4. Sampling Location : AAQMS-4: Kiripsira Village
5. Sample collected by : VCSPL representative in presence of OCPL representative

Date	PM <sub>10</sub> ( $\mu\text{g}/\text{m}^3$ )	PM <sub>2.5</sub> ( $\mu\text{g}/\text{m}^3$ )	SO <sub>2</sub> ( $\mu\text{g}/\text{m}^3$ )	NO <sub>x</sub> ( $\mu\text{g}/\text{m}^3$ )
11.02.2020	55.0	30.7	12.3	15.2
21.02.2020	52.0	28.5	11.6	14.7
CPCB, New Delhi AAQ Standard	100	60	80	80
Testing Method	Gravimetric IS 5182: Part 23	Gravimetric EPA 1998	Improved West & Geake Method IS 5182 (Part-2) RA2017	Modified Jacob & Hochheiser Method IS 5182 (Part-6) RA2017

**BDL Values:** SO<sub>2</sub> < 4  $\mu\text{g}/\text{m}^3$ , NO<sub>x</sub> < 9  $\mu\text{g}/\text{m}^3$





Ref: Envlab/19/R-9376

Date: 03.04.2020

## AAQ MONITORING REPORT FOR MARCH-2020 (CORE ZONE)

1. Name of Project : Manoharpur Open Cast Coal Mine Project
2. Name of Industry : Odisha Coal and Power Limited (OCPL), Sundargarh
3. Monitoring Instruments : RDS (APM 460 BL), FPS (APM 550)
4. Sampling Location : AAQMS-1:BGR Office Camp
5. Sample collected by : VCSPL representative in presence of OCPL representative

Date	PM <sub>10</sub> (µg/m <sup>3</sup> )	PM <sub>2.5</sub> (µg/m <sup>3</sup> )	SO <sub>2</sub> (µg/m <sup>3</sup> )	NO <sub>x</sub> (µg/m <sup>3</sup> )
03.03.2020	69.0	38.5	22.1	28.4
16.03.2020	63.0	35.2	19.6	26.3
CPCB, New Delhi AAQ Standard	100	60	80	80
Testing Method	Gravimetric IS 5182: Part 23	Gravimetric EPA 1998	Improved West & Geake Method IS 5182 (Part-2) RA2017	Modified Jacob & Hochheiser Method IS 5182 (Part-6) RA2017

**BDL Values:** SO<sub>2</sub> < 4 µg/m<sup>3</sup>, NO<sub>x</sub> < 9 µg/m<sup>3</sup>

Prepared by



Verified by





# Visiontek Consultancy Services Pvt. Ltd.

(An Enviro Engineering Consulting Cell)



ISO 9001 : 2008  
ISO 14001: 2015

OHSAS 45001: 2018

Ref: Envlab/19/R-9377

Date: 03.04.2020

## AAQ MONITORING REPORT FOR MARCH-2020 (CORE ZONE)

1. Name of Project : Manoharpur Open Cast Coal Mine Project
2. Name of Industry : Odisha Coal and Power Limited (OCPL), Sundargarh
3. Monitoring Instruments : RDS (APM 460 BL), FPS (APM 550)
4. Sampling Location : AAQMS-2: Vocational Training Center
5. Sample collected by : VCSPL representative in presence of OCPL representative

Date	PM <sub>10</sub> (µg/m <sup>3</sup> )	PM <sub>2.5</sub> (µg/m <sup>3</sup> )	SO <sub>2</sub> (µg/m <sup>3</sup> )	NO <sub>x</sub> (µg/m <sup>3</sup> )
02.03.2020	61.0	33.8	18.6	24.7
16.03.2020	55.0	30.4	17.5	23.6
CPCB, New Delhi AAQ Standard	100	60	80	80
Testing Method	Gravimetric IS 5182: Part 23	Gravimetric EPA 1998	Improved West & Geake Method IS 5182 (Part-2) RA2017	Modified Jacob & Hochheiser Method IS 5182 (Part-6) RA2017

BDL Values: SO<sub>2</sub> < 4 µg/m<sup>3</sup>, NO<sub>x</sub> < 9 µg/m<sup>3</sup>

*M. Anand*

Prepared by



*Puja Mohanty*

Verified by







# Visiontek Consultancy Services Pvt. Ltd.

(An Enviro Engineering Consulting Cell)



ISO 9001 : 2008  
ISO 14001: 2015

OHSAS 45001: 2018

Ref: Envlab/19/R-9378

Date: 03.04.2020

## AAQ MONITORING REPORT FOR MARCH-2020 (CORE ZONE)

1. Name of Project : Manoharpur Open Cast Coal Mine Project
2. Name of Industry : Odisha Coal and Power Limited (OCPL), Sundargarh
3. Monitoring Instruments : RDS (APM 460 BL), FPS (APM 550)
4. Sampling Location : AAQMS-3: CHP OCPL Office
5. Sample collected by : VCSPL representative in presence of OCPL representative

Date	PM <sub>10</sub> (µg/m <sup>3</sup> )	PM <sub>2.5</sub> (µg/m <sup>3</sup> )	SO <sub>2</sub> (µg/m <sup>3</sup> )	NO <sub>x</sub> (µg/m <sup>3</sup> )
03.03.2020	63.0	34.0	21.2	27.6
20.03.2020	72.0	38.3	23.0	29.7
CPCB, New Delhi AAQ Standard	100	60	80	80
Testing Method	Gravimetric IS 5182: Part 23	Gravimetric EPA 1998	Improved West & Geake Method IS 5182 (Part-2) RA2017	Modified Jacob & Hochheiser Method IS 5182 (Part-6) RA2017

**BDL Values:** SO<sub>2</sub> < 4 µg/m<sup>3</sup>, NO<sub>x</sub> < 9 µg/m<sup>3</sup>

*M. Anand*

Prepared by



*Puja Mohanty*

Verified by





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ISO 9001 : 2008  
ISO 14001 : 2015

OHSAS 45001: 2018

Ref: Envlab/19/R-9379

Date: 03.04.2020

## AAQ MONITORING REPORT FOR MARCH-2020 (CORE ZONE)

1. Name of Project : **Manoharpur Open Cast Coal Mine Project**
2. Name of Industry : **Odisha Coal and Power Limited (OCPL), Sundargarh**
3. Monitoring Instruments : **RDS (APM 460 BL), FPS (APM 550)**
4. Sampling Location : **AAQMS-4: OCPL Mines Area**
5. Sample collected by : **VCSPL representative in presence of OCPL representative**

Date	PM <sub>10</sub> (µg/m <sup>3</sup> )	PM <sub>2.5</sub> (µg/m <sup>3</sup> )	SO <sub>2</sub> (µg/m <sup>3</sup> )	NO <sub>x</sub> (µg/m <sup>3</sup> )
02.03.2020	78.0	43.6	24.1	28.0
20.03.2020	71.0	39.5	22.6	25.6
<b>CPCB, New Delhi AAQ Standard</b>	<b>100</b>	<b>60</b>	<b>80</b>	<b>80</b>
<b>Testing Method</b>	<b>Gravimetric IS 5182: Part 23</b>	<b>Gravimetric EPA 1998</b>	<b>Improved West &amp; Geake Method IS 5182 (Part-2) RA2017</b>	<b>Modified Jacob &amp; Hochheiser Method IS 5182 (Part-6) RA2017</b>

**BDL Values:** SO<sub>2</sub> < 4 µg/m<sup>3</sup>, NO<sub>x</sub> < 9 µg/m<sup>3</sup>

  
**Prepared by**



  
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ISO 9001 : 2008  
ISO 14001: 2015

OHSAS 45001: 2018

Ref: Envlab/19/R-9380

Date: 03.04.2020

## AAQ MONITORING REPORT FOR MARCH-2020 (BUFFER ZONE)

1. Name of Project : **Manoharpur Open Cast Coal Mine Project**
2. Name of Industry : **Odisha Coal and Power Limited (OCPL), Sundargarh**
3. Monitoring Instruments : **RDS (APM 460 BL), FPS (APM 550)**
4. Sampling Location : **AAQMS-1: Dulanga Village**
5. Sample collected by : **VCSPL representative in presence of OCPL representative**

Date	PM <sub>10</sub> (µg/m <sup>3</sup> )	PM <sub>2.5</sub> (µg/m <sup>3</sup> )	SO <sub>2</sub> (µg/m <sup>3</sup> )	NO <sub>x</sub> (µg/m <sup>3</sup> )
06.03.2020	58.0	32.0	12.5	16.6
23.03.2020	52.0	28.7	11.6	15.4
<b>CPCB, New Delhi AAQ Standard</b>	<b>100</b>	<b>60</b>	<b>80</b>	<b>80</b>
<b>Testing Method</b>	<b>Gravimetric IS 5182: Part 23</b>	<b>Gravimetric EPA 1998</b>	<b>Improved West &amp; Geake Method IS 5182 (Part-2) RA2017</b>	<b>Modified Jacob &amp; Hochheiser Method IS 5182 (Part-6) RA2017</b>

**BDL Values:** SO<sub>2</sub> < 4 µg/m<sup>3</sup>, NO<sub>x</sub> < 9 µg/m<sup>3</sup>

*Manish*  
Prepared by



*Puja Mohanty*

Verified by





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ISO 9001 : 2008  
ISO 14001: 2015

OHSAS 45001: 2018

Ref: Envlab/19/R-9381

Date: 03.04.2020

## AAQ MONITORING REPORT FOR MARCH-2020 (BUFFER ZONE)

1. Name of Project : Manoharpur Open Cast Coal Mine Project
2. Name of Industry : Odisha Coal and Power Limited (OCPL), Sundargarh
3. Monitoring Instruments : RDS (APM 460 BL), FPS (APM 550)
4. Sampling Location : AAQMS-2: Kalamegha Village
5. Sample collected by : VCSPL representative in presence of OCPL representative

Date	PM <sub>10</sub> (µg/m <sup>3</sup> )	PM <sub>2.5</sub> (µg/m <sup>3</sup> )	SO <sub>2</sub> (µg/m <sup>3</sup> )	NO <sub>x</sub> (µg/m <sup>3</sup> )
06.03.2020	54.0	29.5	11.3	14.7
23.03.2020	49.0	26.3	10.5	12.8
CPCB, New Delhi AAQ Standard	100	60	80	80
Testing Method	Gravimetric IS 5182: Part 23	Gravimetric EPA 1998	Improved West & Geake Method IS 5182 (Part-2) RA2017	Modified Jacob & Hochheiser Method IS 5182 (Part-6) RA2017

**BDL Values:** SO<sub>2</sub> < 4 µg/m<sup>3</sup>, NO<sub>x</sub> < 9 µg/m<sup>3</sup>

*M. Panda*  
Prepared by



*Puja Mohanty*  
Verified by





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ISO 9001 : 2008  
ISO 14001: 2015

OHSAS 45001: 2018

Ref: Envlab/19/R-9382

Date: 03.04.2020

## AAQ MONITORING REPORT FOR MARCH-2020 (BUFFER ZONE)

1. Name of Project : Manoharpur Open Cast Coal Mine Project
2. Name of Industry : Odisha Coal and Power Limited (OCPL), Sundargarh
3. Monitoring Instruments : RDS (APM 460 BL), FPS (APM 550)
4. Sampling Location : AAQMS-3: Paramanandpur Village
5. Sample collected by : VCSPL representative in presence of OCPL representative

Date	PM <sub>10</sub> (µg/m <sup>3</sup> )	PM <sub>2.5</sub> (µg/m <sup>3</sup> )	SO <sub>2</sub> (µg/m <sup>3</sup> )	NO <sub>x</sub> (µg/m <sup>3</sup> )
04.03.2020	50.0	27.6	9.5	12.7
21.03.2020	56.0	30.2	10.8	14.3
CPCB, New Delhi AAQ Standard	100	60	80	80
Testing Method	Gravimetric IS 5182: Part 23	Gravimetric EPA 1998	Improved West & Geake Method IS 5182 (Part-2) RA2017	Modified Jacob & Hochheiser Method IS 5182 (Part-6) RA2017

**BDL Values:** SO<sub>2</sub> < 4 µg/m<sup>3</sup>, NO<sub>x</sub> < 9 µg/m<sup>3</sup>

  
Prepared by



  
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ISO 9001 : 2008  
ISO 14001: 2015

OHSAS 45001: 2018

Ref: Envlab/19/R-9383

Date: 03.04.2020

## AAQ MONITORING REPORT FOR MARCH-2020 (BUFFER ZONE)

1. Name of Project : Manoharpur Open Cast Coal Mine Project
2. Name of Industry : Odisha Coal and Power Limited (OCPL), Sundargarh
3. Monitoring Instruments : RDS (APM 460 BL), FPS (APM 550)
4. Sampling Location : AAQMS-4: Kiripsira Village
5. Sample collected by : VCSPL representative in presence of OCPL representative

Date	PM <sub>10</sub> (µg/m <sup>3</sup> )	PM <sub>2.5</sub> (µg/m <sup>3</sup> )	SO <sub>2</sub> (µg/m <sup>3</sup> )	NO <sub>x</sub> (µg/m <sup>3</sup> )
04.03.2020	57.0	31.4	11.8	16.1
21.03.2020	50.0	27.5	11.2	15.3
CPCB, New Delhi AAQ Standard	100	60	80	80
Testing Method	Gravimetric IS 5182: Part 23	Gravimetric EPA 1998	Improved West & Geake Method IS 5182 (Part-2) RA2017	Modified Jacob & Hochheiser Method IS 5182 (Part-6) RA2017

BDL Values: SO<sub>2</sub> < 4 µg/m<sup>3</sup>, NO<sub>x</sub> < 9 µg/m<sup>3</sup>

*M. Panda*

Prepared by



*Puja Mohanty*

Verified by

