

**Central Coalfields Limited**  
**Office of the General Manager**  
**P.O.- Dhori Distt – Bokaro.**

Ref. No.-GM (D)/ PS/ Env. Statements/2020-21/ 130

Dated: - 30.09.2021

To,  
Member Secretary, JSPCB,  
HEC, Dhurwa, Ranchi.

Sub: Submission of Environment Statement / Audit Reports - 2020-21.

Dear Sir,

We are enclosing herewith the Environment Statement / Audit Reports for the financial year 2020-21 in respect of following projects of Dhori Area duly signed by respective Project Officers for your kind perusal.

During 2020-21, Dhori OCP production was suspended due to non availability of Land.

1. Amlo OCP
2. Tarmi OCP
3. Selected Dhori Group of Mines (SDGOM)
4. Dhori (Khas) UGP
5. Dhori OCP
6. Tarmi Siding

Encl: As above.

Yours faithfully,

*[Handwritten Signature]*  
30/09/21

General Manager  
Dhori Area.

*[Handwritten Signature]*  
**General Manager**  
**C.C.L., Dhori Area**

Copy to:

1. Regional officer, JSPCB, HIG-1, Housing colony, Dhanbad.
2. Staff Officer (Env), Dhori Area
3. Project Officers- Amlo / Dhori (E)/ Tarmi / Selected Dhori Group of mines (SDGOM) / Dhori (K) UG/Tarmi Siding.

ENVIRONMENT  
STATEMENT/AUDIT  
REPORT

DHORI(K) UNDERGROUND PROJECT  
CENTRAL COAFIELDS LIMITED  
DHORI AREA

FOR  
2020 -21

SUBMITTED TO  
JHARKHAND POLLUTION CONTROL  
BOARD

FORM – V (See rule 14)  
Environmental Statement for the financial year ending the 31<sup>st</sup> March 2021.

**PART- A.**

I	Name and address of the project.	Dhori (K) UGP PO: Dhori Dist: Bokaro- 825102 State: Jharkhand.
ii.	Industry category primary – (STC- Code)	Primary
iii	Production capacity	0.19MTPA (as per approved EC) J-11015/305/2007-IA.II(M) DT. 03-05-2011. Prod (2020-21) = 0.1127 Mte
iv	Date of last environment statement submitted.	30/09/2020 (2019-20).

**PART- B.**

**Water and Raw material composition:**

Water Consumption	
1. Mining	40 cum/Day
2 Domestic	320 cum/day
Total	360 cum/day

2. Raw material consumption:

Name of Raw material	Name of product	Consumption of Raw materials	
		During the previous financial year (2019-20)	During the current Financial year (2020-21)
POL (Lit/Te)	COAL	0.041	0.056
Explosive (Kg/te)	COAL	0.192	0.149

**PART- C**

**Pollution discharged to Environment / unit of output  
(Parameters as specified in the consent issued)**

Pollution	Quantity of pollutants discharged (Cum/day)	Percentage of variation from prescribed standards with reason.
a) Water	10 (Mine discharge)	The quality of water is meeting the prescribed standard.
b) Air (SPM, Sox, NOx are main pollutant)	The quantity of air pollutants from mine is difficult to measure. However, concentrations of air pollutants are measurable and are given in annexure.	The results of SPM/RPM/SOx & NOx generated are well within the prescribed standard.
c) Noise	Recorded Noise levels are attached as annexure.	Noise level in around project is under prescribed standard.

## **PART- D**

### **Hazardous Waste (As specified under Hazardous Waste / management and Handling rules – 1989).**

The project does not produce and/ or release any hazardous waste which is governed by Hazardous Waste Management & Handling rule 1989.

## **PART – E SOLID WASTE:**

(Not Applicable since UG Project)

Solid Waste	Total Quantity (M.cum)	
	During the previous financial year (2019-20)	During the current Financial year (2020-21)
a) From process (OB)	NOT APPLICABLE	NA
b) From pollution control facility	NOT APPLICABLE	NA

## **PART - F**

### **PLEASE SPECIFY THE CHARACTERISTICS IN TERMS OF CONCENTRATION AND QUANTITY OF HAZARDOUS AS WELL AS SOLID WASTE AND INDICATE, DISPOSAL PRACTICE ADOPTED FOR BOTH THESE CATEGORIES OF WASTES**

As already mentioned in PART-D above that the entire process of Coal mining, handling and dispatch do not give rise to production of any hazardous wastes.

In an underground mine, only coal is extracted by Board and Pillar Method and no solid waste material is generated during mining operation. Coal dust, carbon monoxide gas and methane gas are generated during mining and concentration in working environment is kept below Threshold limit by providing adequate ventilation.

## **PART - G**

### **IMPACT OF POLLUTION CONTROL MEASURES ON CONSERVATION OF NATIONAL RESOURCE AND CONSEQUENTLY ON COST OF PRODUCTION**

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

a. **Air Pollution Control Measures:**

- i. Adequate amount of fresh air is circulated in the mine to keep the coal dust concentration below TLV.
- ii. Water spraying over coal stock is in practiced.

**b. Water Pollution Control Measures:**

i) Mine water is collected in the underground sump and pumped to one nearby pond before the water joins surface Nala.

**c. Noise Pollution Control:**

The following control measures are followed and proposed-

- i. Ear muffs are provided to each worker exposed to high noise levels.
- ii. Efforts are being made to produce least noise levels. Result of noise monitoring reveal that the noise level is well below the permissible limit.

**PART - H**

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


The regular monitoring of the ambient air and water quality, noise level is being continued.

**PART - I**

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

The suggestion made by different statutory agency e.g., Ministry of Environment & Forest, Central Pollution Control Board and State Pollution Control Board etc. are being implemented from time to time in the project for better environmental conditions in and around the project.

@@@@@

  
30/09/21  
Signature of Project Officer  
Project Officer  
Dhori (Khas) UEP  
Dhori (Khas) Colliery

**ENVIRONMENT LABORATORY , CMPDI (HQ) , RANCHI**

**TEST REPORT**

<b>06/20 Test Report no. 1600</b>	<b>Job No. 0943120075</b>	<b>Year</b>	<b>FY2020-21</b>
Type of Sample	Ambient Air	Quarter Ending	Jun-20
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution, LQR 32		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

**TEST RESULT**

The sample has been tested with the following results: -

**Area :** Dhori      **Project:** Dhori Khas Colliery      **Stations:** Sarda Colony

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters ( in $\mu\text{g}/\text{m}^3$ )					Wind Direction (from) & Weather
				Total Particulate Matter (PM10+ >PM10)TPM	Particulate Matter (PM <sub>10</sub> )	Particulate Matter (PM <sub>2.5</sub> )	Sulphur Dioxide (SO <sub>2</sub> )	Nitrogen Oxides (as NO <sub>2</sub> )	
<b>Apr-20 1st FN</b>	07/04/20-08/04/20	16-04-2020	16/04/20-20/04/20	167	82	47	< 25	< 6	West Sunny
<b>Apr-20 2nd FN</b>	16/04/20-17/04/20	01-05-2020	01/05/20-08/05/20	162	73	34	< 25	< 6	West Sunny
<b>May-20 3rd FN</b>	05/05/20-06/05/20	18-05-2020	18/05/20-20/05/20	149	76	41	< 25	< 6	East Cloud
<b>May-20 4th FN</b>	19/05/20-20/05/20	01-06-2020	01/06/20-03/06/20	152	69	35	< 25	< 6	East Sunny
<b>Jun-20 5th FN</b>	02/06/20-03/06/20	16-06-2020	16/06/20-18/06/20	167	81	48	< 25	< 6	East Sunny
<b>Jun-20 6th FN</b>	17/06/20-18/06/20	01-07-2020	01/07/20-03/07/20	147	70	33	< 25	< 6	East Sunny

**Note:**

1. Gazette Notification No. G.S.R 742(E) dt.25th Sept. '2000 is enclosed along for reference applicable in core zone.
2. Gazette Notification No. G.S.R 826 (E) dt. Nov. '2009 is enclosed for reference applicable in buffer zone.

Analysed By

Checked By

Authorized Signatory

Note: 1) This Report refers to the values obtained at the time of testing and results related to the items tested  
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**ENVIRONMENT LABORATORY , CMPDI (HQ) , RANCHI**

**TEST REPORT**

<b>06/20 Test Report no. 1601</b>	<b>Job No. 0943120075</b>	<b>Year</b>	FY2020-21
Type of Sample	Ambient Air	Quarter Ending	Jun-20
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution, LQR 32		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

**TEST RESULT**

The sample has been tested with the following results: -

**Area :** Dhori      **Project:** Dhori Khas Colliery      **Stations:** Makuli Colony

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters ( in $\mu\text{g}/\text{m}^3$ )					Wind Direction (from) & Weather
				Total Particulate Matter (PM10+ >PM10)TPM	Particulate Matter (PM <sub>10</sub> )	Particulate Matter (PM2.5)	Sulphur Dioxide (SO <sub>2</sub> )	Nitrogen Oxides (as NO <sub>2</sub> )	
<b>Apr-20 1st FN</b>	07/04/20-08/04/20	16-04-2020	16/04/20-20/04/20	217	91	58	< 25	< 6	West Sunny
<b>Apr-20 2nd FN</b>	16/04/20-17/04/20	04-05-2020	04/05/20-06/05/20	193	93	51	< 25	< 6	West Sunny
<b>May-20 3rd FN</b>	05/05/20-06/05/20	18-05-2020	18/05/20-20/05/20	228	97	50	< 25	< 6	East Cloud
<b>May-20 4th FN</b>	19/05/20-20/05/20	01-06-2020	01/06/20-03/06/20	193	87	41	< 25	< 6	East Sunny
<b>Jun-20 5th FN</b>	02/06/20-03/06/20	16-06-2020	16/06/20-18/06/20	175	91	54	< 25	< 6	East Sunny
<b>Jun-20 6th FN</b>	17/06/20-18/06/20	01-07-2020	01/07/20-03/07/20	176	81	38	< 25	< 6	East Sunny

**Note:**

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**TEST REPORT**

<b>06/20 Test Report no. 1602</b>	<b>Job No. 0943120075</b>	<b>Year</b>	<b>FY2020-21</b>
Type of Sample	Ambient Air	Quarter Ending	Jun-20
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution, LQR 32		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

**TEST RESULT**

The sample has been tested with the following results: -

**Area :** Dhori      **Project:** Dhori Khas Colliery      **Stations:** Pichari Village

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters ( in $\mu\text{g}/\text{m}^3$ )					Wind Direction (from) & Weather
				Total Particulate Matter (PM10+ >PM10)TPM	Particulate Matter (PM <sub>10</sub> )	Particulate Matter (PM <sub>2.5</sub> )	Sulphur Dioxide (SO <sub>2</sub> )	Nitrogen Oxides (as NO <sub>2</sub> )	
<b>Apr-20 1st FN</b>	07/04/20-08/04/20	16-04-2020	16/04/20-20/04/20	193	91	54	< 25	< 6	West Sunny
<b>Apr-20 2nd FN</b>	17/04/20-18/04/20	04-05-2020	04/05/20-06/05/20	122	64	28	< 25	< 6	West Sunny
<b>May-20 3rd FN</b>	06/05/20-07/05/20	18-05-2020	18/05/20-20/05/20	190	78	41	< 25	< 6	East Cloud
<b>May-20 4th FN</b>	20/05/20-21/05/20	01-06-2020	01/06/20-03/06/20	162	73	27	< 25	< 6	East Sunny
<b>Jun-20 5th FN</b>	03/06/20-04/06/20	16-06-2020	16/06/20-18/06/20	121	65	45	< 25	< 6	East Sunny
<b>Jun-20 6th FN</b>	18/06/20-19/06/20	01-07-2020	01/07/20-03/07/20	131	78	30	< 25	< 6	East Sunny

**Note:**

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**TEST REPORT**

<b>06/20 Test Report no. 1603</b>	<b>Job No. 0943120075</b>	<b>Year</b>	<b>FY2020-21</b>
Type of Sample	Ambient Air	Quarter Ending	Jun-20
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution, LQR 32		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

**TEST RESULT**

The sample has been tested with the following results: -

**Area :** Dhori      **Project:** Dhori Khas Colliery      **Stations:** Central Colony (filter plant)

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters ( in $\mu\text{g}/\text{m}^3$ )					Wind Direction (from) & Weather
				Total Particulate Matter (PM10+ >PM10)TPM	Particulate Matter (PM <sub>10</sub> )	Particulate Matter (PM <sub>2.5</sub> )	Sulphur Dioxide (SO <sub>2</sub> )	Nitrogen Oxides (as NO <sub>2</sub> )	
<b>Apr-20 1st FN</b>	07/04/20-08/04/20	16-04-2020	16/04/20-20/04/20	178	79	46	< 25	< 6	West Sunny
<b>Apr-20 2nd FN</b>	17/04/20-18/04/20	04-05-2020	04/05/20-06/05/20	164	76	33	< 25	< 6	West Sunny
<b>May-20 3rd FN</b>	06/05/20-07/05/20	18-05-2020	18/05/20-20/05/20	146	79	37	< 25	< 6	East Cloud
<b>May-20 4th FN</b>	20/05/20-21/05/20	01-06-2020	01/06/20-03/06/20	253	90	53	< 25	< 6	East Sunny
<b>Jun-20 5th FN</b>	03/06/20-04/06/20	16-06-2020	16/06/20-18/06/20	155	86	53	< 25	< 6	East Sunny
<b>Jun-20 6th FN</b>	18/06/20-19/06/20	01-07-2020	01/07/20-03/07/20	124	68	22	< 25	< 6	East Sunny

**Note:**

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**TEST REPORT**

<b>06/20 Test Report no. 1604</b>	<b>Job No. 0943120075</b>	<b>Year</b>	FY2020-21
Type of Sample:	Noise	Quarter Ending	Jun-20
Customer	CCL		
Testing/Sampling Protocol:	<i>'The noise pollution (Regulation and Control), Rules,2000, LQR34</i>		
Remarks:			

**TEST RESULT**

The sample has been tested with the following results: -

**Area :**                      **Dhori**                                      **Project:**                      **Dhori Khas Colliery**

Station Name	Noise Level					
	Apr-20 1st FN	Apr-20 2nd FN	May-20 3rd FN	May-20 4th FN	Jun-20 5th FN	Jun-20 6th FN
Date of recording	09-04-2020	16-04-2020	05-05-2020	19-05-2020	02-06-2020	17-06-2020
<b>Sarda Colony</b>	48.7	48.7	47.8	48.6	48.2	48.6
Date of recording	09-04-2020	16-04-2020	05-05-2020	19-05-2020	02-06-2020	17-06-2020
<b>Makuli Colony</b>	49.3	49.4	49.3	49.3	49.5	49.5
Date of recording	07-04-2020	16-04-2020	05-05-2020	19-05-2020	02-06-2020	17-06-2020
<b>Pichari Village</b>	50.5	50.5	50.4	50.4	51.3	50.6
Date of recording	07-04-2020	17-04-2020	06-05-2020	20-05-2020	03-06-2020	18-06-2020
<b>Central Colony (Filter Plant)</b>	52.2	51.2	50.2	51.2	52.4	53.7

Ambient Air Quality Standards in respect of Noise as per 'The noise pollution (Regulation and Control), Rules,2000		
Time Frame	Limits in dB(A) Leq	
	Day Time 6.00 AM to 10.00 PM	Night Time 10.00 PM to 6.00 AM
Industrial Area	75	70
Commercial Area	65	55
Residential area	55	45
Silence Zone	50	40

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**ENVIRONMENT LABORATORY , CMPDI (HQ) , RANCHI**

**TEST REPORT**

<b>06/20 Test Report no. 1605</b>	<b>Job No. 0943120075</b>	<b>Year</b>	<b>FY2020-21</b>
Type of Sample:	<b>Effluent Water</b>	Quarter Ending	Jun-20
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/Sampling Protocol:	<b>MOEF -SCH-VI STANDARDS, Class 'A'. LQR 33</b>		
Remarks & Observation:	Samples received in 5 ltrs plastic Jerri cane, Colour as observed is transparent		

**TEST RESULT**

The sample has been tested with the following results: -

**Area :** Dhori      **Project:** Dhori Khas Colliery      **Stations:** Lagoon Discharge

Analysis Results of FN Effluent Water							
Parameters →				<b>COD</b>	<b>O &amp; G</b>	<b>pH value</b>	<b>TSS</b>
<b>Detection Limit</b>				<b>4</b>	<b>2</b>	<b>0.2</b>	<b>10</b>
<b>MOEF -SCH-VI, STANDARDS, Class 'A'</b>				<b>250</b>	<b>10</b>	<b>5.5 to 9.0</b>	<b>100</b>
Month	Date of Sampling	Date of Receipt of Sample	Date of Analysis	<b>Value in mg/l, except pH</b>			
<b>Apr-20 1st FN</b>	10/04/20	16/04/20	16/04/20-04/05/20	40	<2.00	7.61	45
<b>Apr-20 2nd FN</b>	20/04/20	04/05/20	04/05/20-20/05/20	20	<2.00	7.66	24
<b>May-20 3rd FN</b>	07/05/20	18/05/20	18/05/20-31/05/20	32	<2.00	8.07	40
<b>May-20 4th FN</b>	22/05/20	01/06/20	01/06/20-18/06/20	20	<2.00	8.13	24
<b>Jun-20 5th FN</b>	05/06/20	16/06/20	16/06/20-02/07/20	32	<2.00	7.79	36
<b>Jun-20 6th FN</b>	20/06/20	01/07/20	01/07/20-16/07/20	20	<2.00	7.92	28
<b>BIS Standard &amp; Method</b>				APHA, 23rd Edition, Closed Reflux, Titrimetric	IS 3025/39:1991, R : 2003, Partition Gravimetric	IS-3025/11:1983, R-1996, Electrometric	IS 3025/17:1984, R :1996, Gravimetric

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**ENVIRONMENT LABORATORY , CMPDI (HQ) , RANCHI**

**TEST REPORT**

<b>09/20 Test Report no. 1600</b>	<b>Job No. 094320075</b>	<b>Year</b>	FY2020-21
Type of Sample	Ambient Air	Quarter Ending	Sep-20
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution, LQR 32		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

**TEST RESULT**

The sample has been tested with the following results: -

**Area :** Dhori      **Project:** Dhori Khas Colliery      **Stations:** Sarda Colony

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters ( in $\mu\text{g}/\text{m}^3$ )					Wind Direction (from) & Weather
				Total Particulate Matter (PM10+ >PM10)TPM	Particulate Matter (PM <sub>10</sub> )	Particulate Matter (PM2.5)	Sulphur Dioxide (SO <sub>2</sub> )	Nitrogen Oxides (as NO <sub>2</sub> )	
<b>Jul-20 1st FN</b>	07/07/20-08/07/20	20-07-2020	20/07/20-22/07/20	162	88	45	< 25	< 6	West Sunny
<b>Jul-20 2nd FN</b>	21/07/20-22/07/20	03-08-2020	03/08/20-10/08/20	161	73	35	< 25	< 6	West Sunny
<b>Aug-20 3rd FN</b>	03/08/20-04/08/20	17-08-2020	17/08/20-19/08/20	85	34	21	< 25	< 6	East Cloud
<b>Aug-20 4th FN</b>	17/08/20-18/08/20	01-09-2020	01/09/20-03/09/20	112	60	30	< 25	< 6	East Sunny
<b>Sep-20 5th FN</b>	01/09/20-02/09/20	16-09-2020	16/09/20-18/09/20	119	60	29	< 25	< 6	East Rain
<b>Sep-20 6th FN</b>	17/09/20-18/09/20	01-10-2020	01/10/20-05/07/20	137	72	32	< 25	< 6	East Rain

**Note:**

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**TEST REPORT**

<b>09/20 Test Report no. 1601</b>	<b>Job No. 094320075</b>	<b>Year</b>	<b>FY2020-21</b>
Type of Sample	Ambient Air	Quarter Ending	Sep-20
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution, LQR 32		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

**TEST RESULT**

The sample has been tested with the following results: -

**Area :** Dhori      **Project:** Dhori Khas Colliery      **Stations:** Makuli Colony

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters ( in $\mu\text{g}/\text{m}^3$ )					Wind Direction (from) & Weather
				Total Particulate Matter (PM10+ >PM10)TPM	Particulate Matter (PM <sub>10</sub> )	Particulate Matter (PM2.5)	Sulphur Dioxide (SO <sub>2</sub> )	Nitrogen Oxides (as NO <sub>2</sub> )	
<b>Jul-20 1st FN</b>	07/07/20-08/07/20	20-07-2020	20/07/20-22/07/20	117	61	27	< 25	< 6	West Sunny
<b>Jul-20 2nd FN</b>	21/07/20-22/07/20	03-08-2020	03/08/20-04/08/20	180	83	40	< 25	< 6	West Sunny
<b>Aug-20 3rd FN</b>	03/08/20-04/08/20	17-08-2020	17/08/20-19/08/20	106	61	28	< 25	< 6	East Cloud
<b>Aug-20 4th FN</b>	17/08/20-18/08/20	01-09-2020	01/09/20-03/09/20	133	68	35	< 25	< 6	East Sunny
<b>Sep-20 5th FN</b>	01/09/20-02/09/20	16-09-2020	16/09/20-18/09/20	171	95	46	< 25	< 6	East Rain
<b>Sep-20 6th FN</b>	17/09/20-18/09/20	01-10-2020	01/10/20-05/07/20	164	88	41	< 25	< 6	East Rain

**Note:**

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2. Gazette Notification No. G.S.R 826 (E) dt.Nov.'2009 is enclosed for reference applicable in buffer zone.

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**TEST REPORT**

<b>09/20 Test Report no. 1602</b>	<b>Job No. 094320075</b>	<b>Year</b>	<b>FY2020-21</b>
Type of Sample	Ambient Air	Quarter Ending	Sep-20
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution, LQR 32		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

**TEST RESULT**

The sample has been tested with the following results: -

**Area :** Dhori      **Project:** Dhori Khas Colliery      **Stations:** Pichari Village

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters ( in $\mu\text{g}/\text{m}^3$ )					Wind Direction (from) & Weather
				Total Particulate Matter (PM <sub>10</sub> +>PM <sub>10</sub> )TPM	Particulate Matter (PM <sub>10</sub> )	Particulate Matter (PM <sub>2.5</sub> )	Sulphur Dioxide (SO <sub>2</sub> )	Nitrogen Oxides (as NO <sub>2</sub> )	
<b>Jul-20 1st FN</b>	08/07/20-09/07/20	20-07-2020	20/07/20-22/07/20	146	77	37	< 25	< 6	West Sunny
<b>Jul-20 2nd FN</b>	22/07/20-23/07/20	03-08-2020	03/08/20-04/08/20	163	83	37	< 25	< 6	West Sunny
<b>Aug-20 3rd FN</b>	04/08/20-05/08/20	17-08-2020	17/08/20-19/08/20	111	60	24	< 25	< 6	East Cloud
<b>Aug-20 4th FN</b>	18/08/20-19/08/20	01-09-2020	01/09/20-03/09/20	107	57	27	< 25	< 6	East Sunny
<b>Sep-20 5th FN</b>	02/09/20-03/09/20	16-09-2020	16/09/20-18/09/20	101	50	29	< 25	< 6	East Rain
<b>Sep-20 6th FN</b>	18/09/20-19/09/20	01-10-2020	01/10/20-05/07/20	196	91	45	< 25	< 6	East Rain

**Note:**

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**TEST REPORT**

<b>09/20 Test Report no. 1603</b>	<b>Job No. 094320075</b>	<b>Year</b>	FY2020-21
Type of Sample	Ambient Air	Quarter Ending	Sep-20
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution, LQR 32		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

**TEST RESULT**

The sample has been tested with the following results: -

**Area :** Dhori      **Project:** Dhori Khas Colliery      **Stations:** Central Colony (filter plant)

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters ( in $\mu\text{g}/\text{m}^3$ )					Wind Direction (from) & Weather
				Total Particulate Matter (PM10+ >PM10)TPM	Particulate Matter (PM <sub>10</sub> )	Particulate Matter (PM <sub>2.5</sub> )	Sulphur Dioxide (SO <sub>2</sub> )	Nitrogen Oxides (as NO <sub>2</sub> )	
<b>Jul-20 1st FN</b>	08/07/20-09/07/20	20-07-2020	20/07/20-22/07/20	194	66	34	< 25	< 6	West Sunny
<b>Jul-20 2nd FN</b>	22/07/20-23/07/20	03-08-2020	03/08/20-04/08/20	136	77	41	< 25	< 6	West Sunny
<b>Aug-20 3rd FN</b>	04/08/20-05/08/20	17-08-2020	17/08/20-19/08/20	120	80	31	< 25	< 6	East Cloud
<b>Aug-20 4th FN</b>	18/08/20-19/08/20	01-09-2020	01/09/20-03/09/20	130	61	24	< 25	< 6	East Sunny
<b>Sep-20 5th FN</b>	02/09/20-03/09/20	16-09-2020	16/09/20-18/09/20	139	64	33	< 25	< 6	East Rain
<b>Sep-20 6th FN</b>	18/09/20-19/09/20	01-10-2020	01/10/20-05/07/20	133	56	23	< 25	< 6	East Rain

**Note:**

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**TEST REPORT**

<b>09/20 Test Report no. 1605</b>	<b>Job No. 094320075</b>	<b>Year</b>	<b>FY2020-21</b>
Type of Sample:	<b>Effluent Water</b>	Quarter Ending	<b>Sep-20</b>
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/Sampling Protocol:	<b>MOEF -SCH-VI STANDARDS, Class 'A'. LQR 33</b>		
Remarks & Observation:	Samples received in 5 ltrs plastic Jerri cane, Colour as observed is transparent		

**TEST RESULT**

The sample has been tested with the following results: -

**Area :** Dhori      **Project:** Dhori Khas Colliery      **Stations:** Lagoon Discharge

Analysis Results of FN Effluent Water							
Parameters →				<b>COD</b>	<b>O &amp; G</b>	<b>pH value</b>	<b>TSS</b>
<b>Detection Limit</b>				<b>4</b>	<b>2</b>	<b>1</b>	<b>10</b>
<b>MOEF -SCH-VI, STANDARDS, Class 'A'</b>				<b>250</b>	<b>10</b>	<b>5.5 to 9.0</b>	<b>100</b>
Month	Date of Sampling	Date of Receipt of Sample	Date of Analysis	<b>Value in mg/l, except pH</b>			
<b>Jul-20 1st FN</b>	08/07/20	20/07/20	20/07/20-04/08/20	24	<2.00	8.19	30
<b>Jul-20 2nd FN</b>	24/07/20	03/08/20	03/08/20-19/08/20	20	<2.00	7.86	27
<b>Aug-20 3rd FN</b>	07/08/20	17/08/20	17/08/20-29/08/20	20	<2.00	7.77	24
<b>Aug-20 4th FN</b>	19/08/20	01/09/20	01/09/20-16/09/20	32	<2.00	7.9	37
<b>Sep-20 5th FN</b>	04/09/20	16/09/20	16/09/20-30/09/20	12	<2.00	7.74	18
<b>Sep-20 6th FN</b>	21/09/20	01/10/20	01/10/20-12/10/20	24	<2.00	7.28	28
<b>BIS Standard &amp; Method</b>				APHA, 23rd Edition, Closed Reflux, Titrimetric Method, 2017	IS 3025/39:1991, R : 2003, Partition Gravimetric	IS-3025/11:1983, R-1996, Electrometric	IS 3025/17:1984, R :1996, Gravimetric Method

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**TEST REPORT**

<b>09/20 Test Report no. 1606</b>	<b>Job No. 094320075</b>	<b>Year</b>	FY2020-21
Type of Sample:	<b>Surface Water</b>	Quarter Ending	Sep-20
Customer	CCL	Date of Receipt:	20-07-2020
Mode of Receipt of Sample:	Joint sampling with customer	Date of Analysis:	20.07.20-20.09.20
Testing/Sampling Protocol:	LQR 33		
Remarks & Observation:	Samples received in 5 ltrs plastic Jerri cane, Colour as observed is transparent		

**TEST RESULT**

The sample has been tested with the following results: -

**Area :** Dhori **Project:** Dhori Khas Colliery  
**Stations:**

1. Jhoria Nala before Conf. with Damodar

08-07-2020

Sl.No	Parameter	Sampling Stations				Detection Limit	BIS Standard & Method
		1	2	3	4		
1	Arsenic (as As), mg/l, Max	<0.002				0.002	IS 3025/37:1988 R : 2003, AAS-VGA, Method
2	BOD (3 days 27°C), mg/l, Max	2.4				2.00	IS 3025 /44: 1993, R: 2003 3 day incubation at 27°C
3	Cadmium(as Cd), mg/l, Max	<0.0004				0.0004	APHA, 23rd Edition AAS-GTA Method, 2017
4	Chlorides (as Cl), mg/l, Max	6				2.00	IS-3025/32:1988, R-2007, Argentometric Method
5	Copper (as Cu), mg/l, Max	<0.02				0.02	IS 3025/42: 1992, R : 2009, AAS (Air-Ac-Flame)
6	Dissolved Oxygen, min.	5.4				0.10	IS 3025/38: 1989, R:2003, Winkler Azide Method
7	Fluoride (as F) mg/l, Max	0.8				0.02	APHA, 23rd Edition, SPADNS Method, 2017
8	Hexavalent Chromium, mg/l, Max	<0.01				0.01	APHA, 23rd Edition, 2017 Diphenylcarbohydrazide,
9	Iron (as Fe), mg/l, Max	<0.04				0.04	IS 3025 /53: 2003, R : 2009, AAS (Air-Ac-Flame)
10	Lead (as Pb), mg/l, Max	<0.001				0.001	APHA, 23rd Edition AAS-GTA Method, 2017
11	Nitrate (as NO <sub>3</sub> ), mg/l, Max	2.60				0.50	APHA, 23rd Edition, UV - Spectrophotometric, 2017
12	pH value	7.22				1.0	IS-3025/11:1983, R-1996, Electrometric Method
13	Phenolic compounds (as C <sub>6</sub> H <sub>5</sub> OH), mg/l, Max	<0.001				0.001	APHA, 23rd Edition, 2017, 4-Amino Antipyrine Method,
14	Selenium (as Se), mg/l, Max	<0.0005				0.0005	IS 3025/56:2003 AAS-VGA Method
15	Sulphate (as SO <sub>4</sub> ) mg/l, Max	16				2.00	APHA, 23rd Edition Turbidity Method, 2017
16	Total Dissolved Solids, mg/l, Max	152				25.00	IS 3025 /16:1984 R : 2006, Gravimetric Method
17	Total Suspended Solids, mg/l, Max	48				10.00	IS 3025 /17:1984, R :1996, Gravimetric Method
18	Zinc (as Zn), mg/l, Max	0.04				0.005	IS 3025 /49: 1994, R : 2009, AAS (Air-Ac-Flame)

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**TEST REPORT**

<b>12/20 Test Report no. 1600</b>	<b>Job No. 094320075</b>	<b>Year</b>	FY2020-21
Type of Sample	Ambient Air	Quarter Ending	Dec-20
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution, LQR 32		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

**TEST RESULT**

The sample has been tested with the following results: -

**Area :** Dhori      **Project:** Dhori Khas Colliery      **Stations:** Sarda Colony

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters ( in $\mu\text{g}/\text{m}^3$ )					Wind Direction (from) & Weather
				Total Particulate Matter (PM10+ >PM10)TPM	Particulate Matter (PM <sub>10</sub> )	Particulate Matter (PM2.5)	Sulphur Dioxide (SO <sub>2</sub> )	Nitrogen Oxides (as NO <sub>2</sub> )	
<b>Oct-20 1st FN</b>	01/10/20-02/10/20	16-10-2020	16/10/20-19/10/20	182	70	34	< 25	< 6	East Rain
<b>Oct-20 2nd FN</b>	17/10/20-18/10/20	02-11-2020	02/11/20-05/11/20	309	110	69	< 25	< 6	West Sunny
<b>Nov-20 3rd FN</b>	02/11/20-03/11/20	17-11-2020	17/11/20-19/11/20	107	58	24	< 25	< 6	West Sunny
<b>Nov-20 4th FN</b>	17/11/20-18/11/20	01-12-2020	01/12/20-03/12/20	113	60	36	< 25	< 6	West Cloud
<b>Dec-20 5th FN</b>	01/12/20-02/12/20	16-12-2020	16/12/20-19/12/20	206	94	54	< 25	< 6	West Sunny
<b>Dec-20 6th FN</b>	17/12/21-18/12/21	01-01-2021	01/01/21-05/01/21	131	74	44	< 25	< 6	West Sunny

**Note:**

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**TEST REPORT**

<b>12/20 Test Report no. 1601</b>	<b>Job No. 094320075</b>	<b>Year</b>	<b>FY2020-21</b>
Type of Sample	Ambient Air	Quarter Ending	Dec-20
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution, LQR 32		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

**TEST RESULT**

The sample has been tested with the following results: -

**Area :** Dhori      **Project:** Dhori Khas Colliery      **Stations:** Makuli Colony

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters ( in $\mu\text{g}/\text{m}^3$ )					Wind Direction (from) & Weather
				Total Particulate Matter (PM10+ >PM10)TPM	Particulate Matter (PM <sub>10</sub> )	Particulate Matter (PM2.5)	Sulphur Dioxide (SO <sub>2</sub> )	Nitrogen Oxides (as NO <sub>2</sub> )	
<b>Oct-20 1st FN</b>	02/10/20-03/10/20	16-10-2020	16/10/20-19/10/20	129	56	23	< 25	< 6	East Rain
<b>Oct-20 2nd FN</b>	17/01/20-18/01/20	02-11-2020	02/11/20-05/11/20	157	78	36	< 25	< 6	West Sunny
<b>Nov-20 3rd FN</b>	02/11/20-03/11/20	17-11-2020	17/11/20-19/11/20	168	81	37	< 25	< 6	West Sunny
<b>Nov-20 4th FN</b>	17/11/20-18/11/20	01-12-2020	01/12/20-03/12/20	155	79	39	< 25	< 6	West Cloud
<b>Dec-20 5th FN</b>	01/12/20-02/12/20	16-12-2020	16/12/20-19/12/20	318	157	77	< 25	< 6	West Sunny
<b>Dec-20 6th FN</b>	17/12/21-18/12/21	01-01-2021	01/01/21-05/01/21	305	148	84	< 25	< 6	West Sunny

**Note:**

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**TEST REPORT**

<b>12/20 Test Report no. 1602</b>	<b>Job No. 094320075</b>	<b>Year</b>	<b>FY2020-21</b>
Type of Sample	Ambient Air	Quarter Ending	Dec-20
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution, LQR 32		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

**TEST RESULT**

The sample has been tested with the following results: -

**Area :** Dhori      **Project:** Dhori Khas Colliery      **Stations:** Pichari Village

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters ( in $\mu\text{g}/\text{m}^3$ )					Wind Direction (from) & Weather
				Total Particulate Matter (PM10+ >PM10)TPM	Particulate Matter (PM <sub>10</sub> )	Particulate Matter (PM <sub>2.5</sub> )	Sulphur Dioxide (SO <sub>2</sub> )	Nitrogen Oxides (as NO <sub>2</sub> )	
<b>Oct-20 1st FN</b>	02/10/20-03/10/20	16-10-2020	16/10/20-19/10/20	160	77	40	< 25	< 6	East Rain
<b>Oct-20 2nd FN</b>	18/10/20-19/10/20	02-11-2020	02/11/20-05/11/20	115	68	32	< 25	< 6	West Sunny
<b>Nov-20 3rd FN</b>	03/11/20-04/11/20	17-11-2020	17/11/20-19/11/20	115	63	30	< 25	< 6	West Sunny
<b>Nov-20 4th FN</b>	18/11/20-19/11/20	01-12-2020	01/12/20-03/12/20	307	146	69	< 25	< 6	West Cloud
<b>Dec-20 5th FN</b>	02/12/20-03/12/20	16-12-2020	16/12/20-19/12/20	144	78	41	< 25	< 6	West Sunny
<b>Dec-20 6th FN</b>	18/12/21-19/12/21	01-01-2021	01/01/21-05/01/21	167	83	43	< 25	< 6	West Sunny

**Note:**

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**TEST REPORT**

<b>12/20 Test Report no. 1603</b>	<b>Job No. 094320075</b>	<b>Year</b>	FY2020-21
Type of Sample	Ambient Air	Quarter Ending	Dec-20
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution, LQR 32		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

**TEST RESULT**

The sample has been tested with the following results: -

**Area :** Dhori      **Project:** Dhori Khas Colliery      **Stations:** Central Colony (filter plant)

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters ( in $\mu\text{g}/\text{m}^3$ )					Wind Direction (from) & Weather
				Total Particulate Matter (PM <sub>10</sub> + >PM <sub>10</sub> )TPM	Particulate Matter (PM <sub>10</sub> )	Particulate Matter (PM <sub>2.5</sub> )	Sulphur Dioxide (SO <sub>2</sub> )	Nitrogen Oxides (as NO <sub>2</sub> )	
<b>Oct-20 1st FN</b>	03/10/20-04/10/20	16-10-2020	16/10/20-19/10/20	143	62	29	< 25	< 6	East Rain
<b>Oct-20 2nd FN</b>	18/10/20-19/10/20	02-11-2020	02/11/20-05/11/20	203	81	52	< 25	< 6	West Sunny
<b>Nov-20 3rd FN</b>	03/11/20-04/11/20	17-11-2020	17/11/20-19/11/20	150	71	32	< 25	< 6	West Sunny
<b>Nov-20 4th FN</b>	18/11/20-19/11/20	01-12-2020	01/12/20-03/12/20	203	92	45	< 25	< 6	West Cloud
<b>Dec-20 5th FN</b>	02/12/20-03/12/20	16-12-2020	16/12/20-19/12/20	206	108	58	< 25	< 6	West Sunny
<b>Dec-20 6th FN</b>	18/12/21-19/12/21	01-01-2021	01/01/21-05/01/21	134	76	36	< 25	< 6	West Sunny

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**TEST REPORT**

<b>12/20 Test Report no. 1604</b>	<b>Job No. 094320075</b>	<b>Year</b>	FY2020-21
Type of Sample:	Noise	Quarter Ending	Dec-20
Customer	CCL		
Testing/Sampling Protocol:	<i>'The noise pollution (Regulation and Control), Rules,2000, LQR34</i>		
Remarks:			

**TEST RESULT**

The sample has been tested with the following results: -

**Area :**                      **Dhori**                                      **Project:**                      **Dhori Khas Colliery**

Station Name	Noise Level					
	Oct-20 1st FN	Oct-20 2nd FN	Nov-20 3rd FN	Nov-20 4th FN	Dec-20 5th FN	Dec-20 6th FN
Date of recording	01-10-2020	17-10-2020	02-11-2020	17-11-2020	01-12-2020	17-12-2020
<b>Sarda Colony</b>	49.3	50.3	49.2	50.4	49.2	49.6
Date of recording	01-10-2020	17-10-2020	02-11-2020	17-11-2020	01-12-2020	17-12-2020
<b>Makuli Colony</b>	50.2	49.3	51.3	49.8	50.5	50.2
Date of recording	02-10-2020	17-10-2020	02-11-2020	17-11-2020	01-12-2020	17-12-2020
<b>Pichari Village</b>	52.4	51.7	52.2	51.6	51.3	51.7
Date of recording	02-10-2020	18-10-2020	03-11-2020	18-11-2020	02-12-2020	18-12-2020
<b>Central Colony (Filter Plant)</b>	55.2	50.6	53.4	51.7	52.2	52.5

Ambient Air Quality Standards in respect of Noise as per 'The noise pollution (Regulation and Control), Rules,2000		
Time Frame	Limits in dB(A) Leq	
	Day Time 6.00 AM to 10.00 PM	Night Time 10.00 PM to 6.00 AM
Industrial Area	75	70
Commercial Area	65	55
Residential area	55	45
Silence Zone	50	40

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**TEST REPORT**

<b>12/20 Test Report no. 1605</b>	<b>Job No. 094320075</b>	<b>Year</b>	<b>FY2020-21</b>
Type of Sample:	<b>Effluent Water</b>	Quarter Ending	<b>Dec-20</b>
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/Sampling Protocol:	<b>MOEF -SCH-VI STANDARDS, Class 'A'. LQR 33</b>		
Remarks & Observation:	Samples received in 5 ltrs plastic Jerri cane, Colour as observed is transparent		

**TEST RESULT**

The sample has been tested with the following results: -

**Area :** Dhori      **Project:** Dhori Khas Colliery      **Stations:** Lagoon Discharge

Analysis Results of FN Effluent Water							
Parameters →				<b>COD</b>	<b>O &amp; G</b>	<b>pH value</b>	<b>TSS</b>
<b>Detection Limit</b>				<b>4</b>	<b>2</b>	<b>0.2</b>	<b>10</b>
<b>MOEF -SCH-VI, STANDARDS, Class 'A'</b>				<b>250</b>	<b>10</b>	<b>5.5 to 9.0</b>	<b>100</b>
Month	Date of Sampling	Date of Receipt of Sample	Date of Analysis	<b>Value in mg/l, except pH</b>			
<b>Oct-20 1st FN</b>	06/10/20	16/10/20	16/10/20-05/11/20	24	<2.00	7.98	30
<b>Oct-20 2nd FN</b>	19/10/20	02/11/20	02/11/20-13/11/20	20	<2.00	8.17	26.2
<b>Nov-20 3rd FN</b>	06/11/20	17/11/20	17/11/20-01/12/20	20	<2.00	7.95	25.2
<b>Nov-20 4th FN</b>	20/11/20	01/12/20	01/12/20-16/12/20	24	<2.00	7.84	30.4
<b>Dec-20 5th FN</b>	00/01/00	00/01/00	00/01/00-00/01/00	0	0	0	0
<b>Dec-20 6th FN</b>	21/12/20	01/01/21	01/01/21-08/01/21	20	<2.00	7.88	23.8
<b>BIS Standard &amp; Method</b>				APHA, 23rd Edition, Closed Reflux, Titrimetric Method, 2017	IS 3025/39:1991, R : 2003, Partition Gravimetric	IS-3025/11:1983, R-1996, Electrometric	IS 3025/17:1984, R :1996, Gravimetric Method

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**TEST REPORT**

<b>12/20 Test Report No. 1606</b>	<b>Job No. 094320075</b>	<b>Year</b>	<b>2020-21</b>
Type of Sample:	<b>Effluent Water</b>	Quarter Ending	<b>Dec.'20</b>
Customer / W. O. no. & Date:	CCL	Date of Receipt of Sample:	16/12/20
Mode of Receipt of Sample:	Joint sampling with customer	Date of Analysis:	16/12/20-11/01/21
Testing Protocol:	<b>MOEF -SCH-VI STANDARDS, Class 'A', LQR 33</b>		
Remarks & Observation:	Samples received in 5 ltrs plastic Jerri cane, Colour as observed is transparent		

**TEST RESULT**

The sample has been tested with the following results:-

**Area :** Dhori **Project:** Dhori Khas Colliery

**Stations:** 1. Lagoon Discharge **Date of Sampling:** 04/12/2020  
2.

Sl.No.	Parameter	Sampling Stations			Detection Limit	MOEF -SCH-VI STANDARDS Class 'A'	BIS Standard & Method
		1	2	3			
1	Ammonical Nitrogen, mg/l, Max	1.41			0.02	50.0	IS 3025/34:1988, R : 2009, Nessler's Method
2	Arsenic (as As), mg/l, Max	<0.002			0.002	0.2	IS 3025/37:1988 R : 2003, AAS-VGA
3	B.O.D (3 days 27°C), mg/l, Max	<2.00			2.00	30.0	IS 3025 /44:1993, R:2003 3 day incubation at 27°C
4	Cadmium(as Cd), mg/l, Max	<0.0004			0.0004	2.0	APHA, 23rd Edition 3120 B ICP Method, 2017
5	COD, mg/l, Max	24			4.00	250.0	APHA, 23rd Edition, Closed Reflux, Titrimetric Method: 2017
6	Copper (as Cu), mg/l, Max	<0.02			0.02	3.0	IS 3025/42: 1992, R : 2009, AAS (Air-Ac-Flame)
7	Dissolved Phosphate, mg/l, Max	0.38			0.30	5.0	APHA, 23rd Edition Molybdovanadate Method, 2017
8	Fluoride (as F) mg/l, Max	1.36			0.02	2.0	APHA, 23rd Edition, SPADNS Method, 2017
9	Free Ammonia, mg/l, Max	<0.02			0.02	5.0	IS:3025/34:1988, Nessler's
10	Hexavalent Chromium, mg/l, Max	<0.01			0.01	0.1	APHA, 23rd Edition, Diphenylcarbohydrazide
11	Iron (as Fe), mg/l, Max	<0.04			0.04	3.0	IS 3025 /53: 2003, R : 2009 , AAS-(Air-Ac-Flame)
12	Lead (as Pb), mg/l, Max	<0.001			0.001	0.1	APHA, 23rd Edition 3120 B ICP Method, 2017
13	Manganese(as Mn), mg/l, Max	<0.01			0.01	2.0	IS-3025/59:2006, AAS (Air-Ac-Flame)
14	Nickel (as Ni), mg/l, Max	<0.003			0.003	3.0	APHA, 23rd Edition 3120 B ICP Method, 2017
15	Nitrate Nitrogen, mg/l, Max	0.93			0.50	10.0	APHA, 23rd Edition, UV-Spectrophotometric Method, 2017
16	Oil & Grease, mg/l, Max	<2.00			2.00	10.0	IS 3025/39:1991, R : 2003, Partition Gravimetric Method
17	pH value	7.98			1.0	5.5 to 9.0	IS-3025/11:1983, R-1996, Electrometric Method
18	Phenolic compounds (as C <sub>6</sub> H <sub>5</sub> OH),mg/l, Max	<0.001			0.001	1.0	APHA, 23rd Edition, 4- Amino Antipyrine Method, 2017
19	Selenium (as Se), mg/l, Max	<0.0005			0.0005	0.05	APHA, 23rd Edition 3120 B ICP Method, 2017
20	Sulphide (as SO <sub>3</sub> ), mg/l, Max	<0.005			0.005	2.0	APHA, 23rd Edition Methylene Blue Method, 2017
21	Temperature (°C)	24.2			Shall not exceed 5° C above the receiving temp.		IS-3025/09:1984, R:2002, Thermometric
22	Total Chromium (as Cr), mg/l, Max	<0.002			<0.002	2.0	APHA, 23rd Edition 3120 B ICP Method, 2017
23	Total Kjeldahl Nitrogen, mg/l, Max	2.8			1.00	100.0	APHA, 23rd Edition, Kjeldahl Method: 2017
24	Total Residual Chlorine, mg/l, Max	<0.02			0.02	1.0	APHA, 23rd Edition, DPD Method, 2017
25	Total Suspended Solids, mg/l, Max	30.4			10.00	100.0	IS 3025/17:1984, R :1996, Gravimetric Method
26	Zinc (as Zn), mg/l, Max	<0.005			0.005	5.0	IS 3025 /49: 1994, R: 2009, AAS (Air-Ac-Flame)

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**TEST REPORT**

<b>12/20 Test Report no. 1607</b>	<b>Job No. 094320075</b>	<b>Year</b>	FY2020-21
Type of Sample:	<b>Surface Water</b>	Quarter Ending	Dec-20
Customer	CCL	Date of Receipt:	16-10-2020
Mode of Receipt of Sample:	Joint sampling with customer	Date of Analysis:	16.10.20-10.01.21
Testing/Sampling Protocol:	LQR 33		
Remarks & Observation:	Samples received in 5 ltrs plastic Jerri cane, Colour as observed is transparent		

**TEST RESULT**

The sample has been tested with the following results: -

**Area :** Dhori **Project:** Dhori Khas Colliery  
**Stations:** 1. Jhoria Nala before Conf. with Damodar **Date of Sampling:**

06-10-2020

Sl.No	Parameter	Sampling Stations				Detection Limit	BIS Standard & Method
		1	2	3	4		
1	Arsenic (as As), mg/l, Max	<0.002				0.002	IS 3025/37:1988 R : 2003, AAS-VGA, Method
2	BOD (3 days 27°C), mg/l, Max	2				2.00	IS 3025 /44: 1993, R: 2003 3 day incubation at 27°C
3	Cadmium(as Cd), mg/l, Max	<0.0004				0.0004	APHA, 23rd Edition AAS-GTA Method, 2017
4	Chlorides (as Cl), mg/l, Max	8				2.00	IS-3025/32:1988, R-2007, Argentometric Method
5	Copper (as Cu), mg/l, Max	<0.02				0.02	IS 3025/42: 1992, R : 2009, AAS (Air-Ac-Flame)
6	Dissolved Oxygen, min.	6				0.10	IS 3025/38: 1989, R:2003, Winkler Azide Method
7	Fluoride (as F) mg/l, Max	1.27				0.02	APHA, 23rd Edition, SPADNS Method, 2017
8	Hexavalent Chromium, mg/l, Max	<0.01				0.01	APHA, 23rd Edition, 2017 Diphenylcarbohydrazide,
9	Iron (as Fe), mg/l, Max	<0.04				0.04	IS 3025 /53: 2003, R : 2009, AAS (Air-Ac-Flame)
10	Lead (as Pb), mg/l, Max	<0.001				0.001	APHA, 23rd Edition AAS-GTA Method, 2017
11	Nitrate (as NO <sub>3</sub> ), mg/l, Max	3.20				0.50	APHA, 23rd Edition, UV - Spectrophotometric, 2017
12	pH value	8.2				1.0	IS-3025/11:1983, R-1996, Electrometric Method
13	Phenolic compounds (as C <sub>6</sub> H <sub>5</sub> OH), mg/l, Max	<0.001				0.001	APHA, 23rd Edition, 2017, 4-Amino Antipyrine Method,
14	Selenium (as Se), mg/l, Max	<0.0005				0.0005	IS 3025/56:2003 AAS-VGA Method
15	Sulphate (as SO <sub>4</sub> ) mg/l, Max	15				2.00	APHA, 23rd Edition Turbidity Method, 2017
16	Total Dissolved Solids, mg/l, Max	196				25.00	IS 3025 /16:1984 R : 2006, Gravimetric Method
17	Total Suspended Solids, mg/l, Max	24.2				10.00	IS 3025 /17:1984, R :1996, Gravimetric Method
18	Zinc (as Zn), mg/l, Max	0.01				0.005	IS 3025 /49: 1994, R : 2009, AAS (Air-Ac-Flame)

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**TEST REPORT**

<b>03/21 Test Report no. 1600</b>	<b>Job No. 094320075</b>	<b>Year</b>	<b>FY2020-21</b>
Type of Sample	Ambient Air	Quarter Ending	Mar-21
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution, LQR 32		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

**TEST RESULT**

The sample has been tested with the following results: -

**Area :** Dhori      **Project:** Dhori Khas Colliery      **Stations:** Sarda Colony

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters ( in $\mu\text{g}/\text{m}^3$ )					Wind Direction (from) & Weather
				Total Particulate Matter (PM <sub>10</sub> + >PM <sub>10</sub> )TPM	Particulate Matter (PM <sub>10</sub> )	Particulate Matter (PM <sub>2.5</sub> )	Sulphur Dioxide (SO <sub>2</sub> )	Nitrogen Oxides (as NO <sub>x</sub> )	
<b>Jan-21 1st FN</b>	05/01/21-06/01/21	18-01-2021	18/01/21-20/01/21	314	136	71	< 25	< 6	East Rain
<b>Jan-21 2nd FN</b>	19/01/21-20/01/21	01-02-2021	01/02/21-04/01/21	133	75	37	< 25	< 6	West Cloud
<b>Feb-21 3rd FN</b>	02/02/21-03/02/21	16-02-2021	16/02/21-19/02/21	131	77	36	< 25	< 6	West Sunny
<b>Feb-21 4th FN</b>	16/02/21-17/02/21	01-03-2021	01/03/21-04/03/21	149	85	45	< 25	< 6	West Sunny
<b>Mar-21 5th FN</b>	01/03/21-02/03/21	16-03-2021	16/03/21-19/03/21	243	83	42	< 25	< 6	West Sunny
<b>Mar-21 6th FN</b>	17/03/21-18/03/21	01-04-2021	01/04/21-05/04/21	164	82	36	< 25	< 6	West Sunny

**Note:**

1. Gazette Notification No. G.S.R 742(E) dt.25th Sept.'2000 is applicable in core zone.
2. Gazette Notification No. G.S.R 826 (E) dt.Nov.'2009 is applicable in buffer zone.

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**TEST REPORT**

<b>03/21 Test Report no. 1601</b>	<b>Job No. 094320075</b>	<b>Year</b>	<b>FY2020-21</b>
Type of Sample	Ambient Air	Quarter Ending	Mar-21
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution, LQR 32		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

**TEST RESULT**

The sample has been tested with the following results: -

**Area :** Dhori      **Project:** Dhori Khas Colliery      **Stations:** Makuli Colony

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters ( in $\mu\text{g}/\text{m}^3$ )					Wind Direction (from) & Weather
				Total Particulate Matter (PM <sub>10</sub> +>PM <sub>10</sub> )TPM	Particulate Matter (PM <sub>10</sub> )	Particulate Matter (PM <sub>2.5</sub> )	Sulphur Dioxide (SO <sub>2</sub> )	Nitrogen Oxides (as NO <sub>x</sub> )	
<b>Jan-21 1st FN</b>	05/01/21-06/01/21	18-01-2021	18/01/21-20/01/21	126	68	28	< 25	< 6	East Rain
<b>Jan-21 2nd FN</b>	19/01/21-20/01/21	01-02-2021	01/02/21-04/01/21	186	92	55	< 25	< 6	West Cloud
<b>Feb-21 3rd FN</b>	02/02/21-03/02/21	16-02-2021	16/02/21-19/02/21	171	87	41	< 25	< 6	West Sunny
<b>Feb-21 4th FN</b>	17/02/21-18/02/21	01-03-2021	01/03/21-04/03/21	173	66	31	< 25	< 6	West Sunny
<b>Mar-21 5th FN</b>	02/03/21-03/03/21	16-03-2021	16/03/21-19/03/21	161	73	34	< 25	< 6	West Sunny
<b>Mar-21 6th FN</b>	18/03/21-19/03/21	01-04-2021	01/04/21-05/04/21	338	115	77	< 25	< 6	West Sunny

**Note:**

1. Gazette Notification No. G.S.R 742(E) dt.25th Sept. '2000 is applicable in core zone.
2. Gazette Notification No. G.S.R 826 (E) dt.Nov.'2009 is applicable in buffer zone.

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**TEST REPORT**

<b>03/21 Test Report no. 1602</b>	<b>Job No. 094320075</b>	<b>Year</b>	<b>FY2020-21</b>
Type of Sample	Ambient Air	Quarter Ending	Mar-21
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution, LQR 32		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

**TEST RESULT**

The sample has been tested with the following results: -

**Area :** Dhori      **Project:** Dhori Khas Colliery      **Stations:** Pichari Village

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters ( in $\mu\text{g}/\text{m}^3$ )					Wind Direction (from) & Weather
				Total Particulate Matter (PM <sub>10</sub> + >PM <sub>10</sub> )/TPM	Particulate Matter (PM <sub>10</sub> )	Particulate Matter (PM <sub>2.5</sub> )	Sulphur Dioxide (SO <sub>2</sub> )	Nitrogen Oxides (as NO <sub>x</sub> )	
<b>Jan-21 1st FN</b>	06/01/21-07/01/21	18-01-2021	18/01/21-20/01/21	180	84	50	< 25	< 6	East Rain
<b>Jan-21 2nd FN</b>	20/01/21-21/01/21	01-02-2021	01/02/21-04/01/21	155	79	39	< 25	< 6	West Cloud
<b>Feb-21 3rd FN</b>	03/02/21-04/02/21	16-02-2021	16/02/21-19/02/21	202	94	50	< 25	< 6	West Sunny
<b>Feb-21 4th FN</b>	17/02/21-18/02/21	01-03-2021	01/03/21-04/03/21	137	73	43	< 25	< 6	West Sunny
<b>Mar-21 5th FN</b>	02/03/21-03/03/21	16-03-2021	16/03/21-19/03/21	304	154	81	< 25	< 6	West Sunny
<b>Mar-21 6th FN</b>	18/03/21-19/03/21	01-04-2021	01/04/21-05/04/21	174	85	42	< 25	< 6	West Sunny

**Note:**

1. Gazette Notification No. G.S.R 742(E) dt.25th Sept.'2000 is applicable in core zone.
2. Gazette Notification No. G.S.R 826 (E) dt.Nov.'2009 is applicable in buffer zone.

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**TEST REPORT**

<b>03/21 Test Report no. 1603</b>	<b>Job No. 094320075</b>	<b>Year</b>	<b>FY2020-21</b>
Type of Sample	Ambient Air	Quarter Ending	Mar-21
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution, LQR 32		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

**TEST RESULT**

The sample has been tested with the following results: -

**Area :** Dhori      **Project:** Dhori Khas Colliery      **Stations:** Central Colony (filter plant)

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters ( in $\mu\text{g}/\text{m}^3$ )					Wind Direction (from) & Weather
				Total Particulate Matter (PM <sub>10</sub> + >PM <sub>10</sub> )TPM	Particulate Matter (PM <sub>10</sub> )	Particulate Matter (PM <sub>2.5</sub> )	Sulphur Dioxide (SO <sub>2</sub> )	Nitrogen Oxides (as NO <sub>x</sub> )	
<b>Jan-21 1st FN</b>	06/01/21-07/01/21	18-01-2021	18/01/21-20/01/21	234	97	57	< 25	< 6	East Rain
<b>Jan-21 2nd FN</b>	20/01/21-21/01/21	01-02-2021	01/02/21-04/01/21	195	98	57	< 25	< 6	West Cloud
<b>Feb-21 3rd FN</b>	03/02/21-04/02/21	16-02-2021	16/02/21-19/02/21	138	76	38	< 25	< 6	West Sunny
<b>Feb-21 4th FN</b>	18/02/21-19/02/21	01-03-2021	01/03/21-04/03/21	301	132	74	< 25	< 6	West Sunny
<b>Mar-21 5th FN</b>	03/03/21-04/03/21	16-03-2021	16/03/21-19/03/21	140	69	30	< 25	< 6	West Sunny
<b>Mar-21 6th FN</b>	18/03/21-19/03/21	01-04-2021	01/04/21-05/04/21	152	65	32	< 25	< 6	West Sunny

**Note:**

1. Gazette Notification No. G.S.R 742(E) dt.25th Sept. '2000 is applicable in core zone.
2. Gazette Notification No. G.S.R 826 (E) dt.Nov.'2009 is applicable in buffer zone.

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**TEST REPORT**

<b>03/21 Test Report no. 1604</b>	<b>Job No. 094320075</b>	<b>Year</b>	FY2020-21
Type of Sample:	Noise	Quarter Ending	Mar-21
Customer	CCL		
Testing/Sampling Protocol:	<i>The noise pollution (Regulation and Control), Rules,2000, LQR34</i>		
Remarks:			

**TEST RESULT**

The sample has been tested with the following results: -

**Area :**                      **Dhori**                                      **Project:**                      **Dhori Khas Colliery**

Station Name	Noise Level dB(A) Leq					
	Jan-21 1st FN Day	Jan-21 2nd FN Day	Feb-21 3rd FN Day	Feb-21 4th FN Day	Mar-21 5th FN Day/Night	Mar-21 6th FN Day/night
Date of recording	05-01-2021	19-01-2021	02-02-2021	16-02-2021	01-03-2021	17-03-2021
<b>1. Sarda Colony</b>	49.2	50.2	50.2	49.7	49.2/42.3	49.8/44.3
Date of recording	05-01-2021	19-01-2021	02-02-2021	16-02-2021	01-03-2021	17-03-2021
<b>2. Makuli Colony</b>	50.3	50.5	49.4	50.2	50.4/44.2	50.5/45.2
Date of recording	05-01-2021	19-01-2021	02-02-2021	17-02-2021	02-03-2021	18-03-2021
<b>3. Pichari Village</b>	51.5	52.5	50.5	51.5	51.3/45.2	51.5/45.2
Date of recording	06-01-2021	20-01-2021	03-02-2021	17-02-2021	02-03-2021	18-03-2021
<b>4. Central Colony (Filter Plant)</b>	53.7	51.3	52.3	52.3	52.2/46.3	52.2/45.4

Ambient Air Quality Standards in respect of Noise as per 'The noise pollution (Regulation and Control), Rules,2000		
Time Frame	Limits in dB(A) Leq	
	Day Time 6.00 AM to 10.00 PM	Night Time 10.00 PM to 6.00 AM
Industrial Area	75	70
Commercial Area	65	55
Residential area	55	45
Silence Zone	50	40

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**TEST REPORT**

<b>03/21 Test Report no. 1605</b>	<b>Job No. 094320075</b>	<b>Year</b>	<b>FY2020-21</b>
Type of Sample:	<b>Effluent Water</b>	Quarter Ending	<b>Mar-21</b>
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/Sampling Protocol:	<b>MOEF -SCH-VI STANDARDS, Class 'A'. LQR 33</b>		
Remarks & Observation:	Samples received in 5 ltrs plastic Jerri cane, Colour as observed is transparent		

**TEST RESULT**

The sample has been tested with the following results: -

**Area :** Dhori      **Project:** Dhori Khas Colliery      **Stations:** Lagoon Discharge

<b>Analysis Results of FN Effluent Water</b>							
Parameters →				<b>COD</b>	<b>O &amp; G</b>	<b>pH value</b>	<b>TSS</b>
<b>Detection Limit</b>				<b>4</b>	<b>2</b>	<b>1.0</b>	<b>10</b>
<b>MOEF -SCH-VI, STANDARDS, Class 'A'</b>				<b>250</b>	<b>10</b>	<b>5.5 to 9.0</b>	<b>100</b>
Month	Date of Sampling	Date of Receipt of Sample	Date of Analysis	<b>Value in mg/l, except pH</b>			
<b>Jan-21 1st FN</b>	09/01/21	18/01/21	18/01/21-01/02/21	28	<2.00	8.28	35.4
<b>Jan-21 2nd FN</b>	22/01/21	01/02/21	01/02/21-16/02/21	20	<2.00	7.86	25.4
<b>Feb-21 3rd FN</b>	05/02/21	16/02/21	16/02/21-25/02/21	20	<2.00	7.97	25.4
<b>Feb-21 4th FN</b>	20/02/21	01/03/21	01/03/21-16/03/21	20	<2.00	8.08	25.2
<b>Mar-21 5th FN</b>	04/03/21	16/03/21	16/03/21-31/03/21	20	<2.00	7.62	25.2
<b>Mar-21 6th FN</b>	20/03/21	01/04/21	01/04/21-10/04/21	24	<2.00	7.92	30.4
<b>BIS Standard &amp; Method</b>				APHA, 23rd Edition, Closed Reflux, Titrimetric Method, 2017	IS 3025/39:1991, R : 2003, Partition Gravimetric	IS-3025/11:1983, R-1996, Electrometric	IS 3025/17:1984, R :1996, Gravimetric Method

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**TEST REPORT**

<b>03/21 Test Report no. 1606</b>	<b>Job No. 094320075</b>	<b>Year</b>	<b>FY2020-21</b>
Type of Sample:	<b>Surface Water</b>	Quarter Ending	<b>Mar-21</b>
Customer	CCL	Date of Receipt:	<b>18-01-2021</b>
Mode of Receipt of Sample:	Joint sampling with customer	Date of Analysis:	<b>18.01.21-31.03.21</b>
Testing/Sampling Protocol:	LQR 33		
Remarks & Observation:	Samples received in 5 ltrs plastic Jerri cane, Colour as observed is transparent		

**TEST RESULT**

The sample has been tested with the following results: -

**Area :** Dhori **Project:** Dhori Khas Colliery  
**Stations:**

- Jhoria Nala before Conf. with Damodar

09-01-2021

Sl.No	Parameter	Sampling Stations				Detection Limit	BIS Standard & Method
		1	2	3	4		
1	Arsenic (as As), mg/l, Max	<0.002				0.002	IS 3025/37:1988 R : 2003, AAS-VGA, Method
2	BOD (3 days 27°C), mg/l, Max	2.6				2.00	IS 3025 /44: 1993, R: 2003 3 day incubation at 27°C
3	Cadmium(as Cd), mg/l, Max	<0.0004				0.0004	APHA, 23rd Edition AAS-GTA Method, 2017
4	Chlorides (as Cl), mg/l, Max	16				2.00	IS-3025/32:1988, R-2007, Argentometric Method
5	Copper (as Cu), mg/l, Max	<0.02				0.02	IS 3025/42: 1992, R : 2009, AAS (Air-Ac-Flame)
6	Dissolved Oxygen, min.	5.6				0.10	IS 3025/38: 1989, R:2003, Winkler Azide Method
7	Fluoride (as F) mg/l, Max	1.5				0.02	APHA, 23rd Edition, SPADNS Method, 2017
8	Hexavalent Chromium, mg/l, Max	<0.01				0.01	APHA, 23rd Edition, 2017 Diphenylcarbohydrazide,
9	Iron (as Fe), mg/l, Max	<0.04				0.04	IS 3025 /53: 2003, R : 2009, AAS (Air-Ac-Flame)
10	Lead (as Pb), mg/l, Max	<0.001				0.001	APHA, 23rd Edition AAS-GTA Method, 2017
11	Nitrate (as NO <sub>3</sub> ), mg/l, Max	9.80				0.50	APHA, 23rd Edition, UV - Spectrophotometric, 2017
12	pH value	8.26				1.0	IS-3025/11:1983, R-1996, Electrometric Method
13	Phenolic compounds (as C <sub>6</sub> H <sub>5</sub> OH), mg/l, Max	<0.001				0.001	APHA, 23rd Edition, 2017, 4-Amino Antipyrine Method,
14	Selenium (as Se), mg/l, Max	<0.0005				0.0005	IS 3025/56:2003 AAS-VGA Method
15	Sulphate (as SO <sub>4</sub> ) mg/l, Max	35				2.00	APHA, 23rd Edition Turbidity Method, 2017
16	Total Dissolved Solids, mg/l, Max	253				25.00	IS 3025 /16:1984 R : 2006, Gravimetric Method
17	Total Suspended Solids, mg/l, Max	36.8				10.00	IS 3025 /17:1984, R :1996, Gravimetric Method
18	Zinc (as Zn), mg/l, Max	<0.005				0.005	IS 3025 /49: 1994, R : 2009, AAS (Air-Ac-Flame)

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