ENVIRONMENTAL STATEMENT 2022-23

ROHINI OPENCAST PROJECT

N K AREA, DAKRA

September, 2023

CENTRAL COALFIELDS LIMITED

ENVIRONMENT DIVISION

Ranchi

EXECUTIVE - SUMMARY

1.0 BACKGROUND

The Project Report of Rohini OCP (0.8 MTPA) was sanctioned in March 1991 with capital investment of 27.18 Crores and the mine came into operation in 1992-'93. Later, there was an expansion from 0.80 MTPA to 2.00 MTPA. The expansion was planned by extending dip side boundary of the existing project in Rohini Geological Block. Subsequently, the Expansion Project Report of Rohini OCP (2.0/2.30 MTPA normative & peak capacity) was approved in 351st meeting of Board of Directors of CCL held on 29.09.2008 with capital budget of 105.67 crores. The Environmental clearance was granted by MoEF&CC on 05.10.2009 for (2.00/2.30 MTPA normative & peak capacity respectively within project area of 258.17 Ha)

The Rohini Exp. project is located in south central part of North Karanpura Coalfields and lies in the Ranchi District of Jharkhand. It is situated in west of Damodar River and north & north-west of the Karkatta OCP & K.D. Hesalong OCP of N. K. Area in CCL. The proposal of expansion of project was approved by the CCL Board on 25th August 2016

The Rohini Expansion Opencast coal mine then subsequently accorded an environmental clearance for production of 3.3 MTPA in an area of 255.68 ha vide ref no J-11015/227/2007-IA-II(M) dated 21.02.2017

The project produced 0.314 MT of coal during the year 2022-23

2.0. FINDINGS:

Environmental Statement report reveals the following facts regarding environmental aspect of this project

i) The concentration of SO_2, NO_x and CO in ambient air in core zone is well within the permissible limits.

ii) The concentration of SPM in core zone is within permissible limits at all sampling stations.

iii) The quality of sump water at the disposal point is meeting the prescribed standards with respect to all parameters.

iv) The noise level in the core and buffer zone is not crossing the threshold value.

v) At present, the entire volume of OB generated is being reutilized for back – filling.

vi) The volume of waste water generated from the colony is 110 m^3/day.

vii) No hazardous waste material is being produced either from any process or any pollution control facilities.

viii) Plantation in 15ha of reclaimed OB land has been completed in monsoon 2017.

ix) Plantation of 8000 fruit bearing saplings in 2.0 ha of reclaimed land completed in monsoon 2022

Summarized Data

1.	Production capacity	:	3.30 MTY
2.	Mineable Reserve	:	16.71 MT
3.	Total Volume of O.B.	:	35.76 M m^3
4.	Average Stripping Ratio	:	2.03 m^3/Te
5.	Total land requirement	:	255.68 Ha
6.	Forest land requirement	:	146.79 Ha
7.	Life of the Project	:	1 Years
8.	Average quality of coal	:	Grade G-11
9.	Average Rainfall / annum	:	1450 mm
10.	Temperature	:	
	i. Maximum	:	42 ^{0}c
	ii. Minimum	:	04 ^{0}c
11.	Predominant Wind Direction and Av. Wind Velocity :		
	i. Summer	:	SW, 9.5 Km/hr
	ii. Rainy	:	SE, 8.5 Km/hr
	iii. Winter	:	NW, 6.5 Km/hr
12.	Magnitude of waste generated		
	i. Waste water discharge from		
	a. Colony	:	142 m^3/day
	b. Workshop	:	309 m^3/day
	c. Mine	:	Nil
	ii. Solid Waste.		
	a. Top Soil	:	NA
	b. O.B.	:	1.22 million m^3

ENVIRONMENT STATEMENT FOR THE FINANCIAL YEAR ENDING 31ST MARCH- 2023

PART-A

I. Name and Address of the mine

NAME	: ROHINI OPENCAST PROJECT
POST	: NAWADIH
DISTT.	: RANCHI, JHARKHAND

II.	INDUSTRY CATEGORY	: PRIMARY
III.	Date of last Environmental Statement Report submitted	: Sept-2022
IV.	PRODUCTION CAPACITY	: 3.30 MTY
V.	YEAR OF STARTING	: 1992-93

PART - B

WATER AND RAW MATERIAL CONSUMPTION

1. WATER CONSUMPTION (cu.m/day)

a. Industrial

i. Industrial water usage : 309 m^3/Day

b. Domestic

i. Colony : 142 m^3/Day

Name of Product	Water Consumption per Unit of Product					
	Financial Year –2022-23			Financial Year –2021-22		
	Production (MT)	Industrial (m^3/Te)	Domestic (m^3/Te)	Production (MT)	Industrial (m^3/Te)	Domestic (m^3/Te)
ROM Coal	0.314	0.35	0.16	0.68	0.16	0.076

Note: Industrial water consumption is mainly due to fire fighting and miscellaneous operations and not directly linked with production.

2. RAW MATERIAL CONSUMPTION:

Name of Products	Name of Raw Material	Consumption of Raw Material (per unit of output)	
		Financial Year –2022-23	Financial Year –2021-22
ROM Coal	POL	0.84 ltr/cum	0.99 ltr/cum
	Explosives	0.25 Kg/te of coal	0.25 Kg/te of coal

PART - C

POLLUTION DISCHARGED TO ENVRONMENT/UNIT OF OUTPUT

(PARAMETERS SPECIFIED IN THE CONSENT ISSUED)

Pollutants	Quantity of pollutants generated	Percentage variation from prescribed standards with reasons
Water		
a) Discharged from Mine	NIL	
b) Workshop	45 cu.m/day	
c) Domestic Discharged	113 cu.m/day	Not applicable
Air		
The SPM, SO2 and NOx are main pollutants generated from coal	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 air pollutants are under Prescribed limits.
Noise		
Operation of HEMMs generated noise	Recorded noise levels are placed as Annexure.	The noise level in and around the project is under the prescribed limits.

PART - D

HAZARDOUS WASTES

(As specified under Hazardous Waste Management and Handling Rules, 1989)

Hazardous Wastes	Total Quantity	
	Financial Year – 2022-23	Financial Year –2021-22
a)From Mining Process	NIL	NIL
b)From Pollution control facilities	NIL	NIL

PART - E

SOLID WASTES

Description of Solid Waste	Total quantity of solid waste generated in (Million m^3)	
	Financial Year –2022-23	**Financial Year –2021-22**
a) From mining process – Top Soil Overburden	 Nil 1.224	 Nil 0.730
b) From pollution control facilities		
c) Quantity recycled or reutilized	The entire volume of Overburden removed during the process of coal winning is reutilized for back filling	

PART - F

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

Hazardous wastes are not being produced either from mining operation or from any pollution control facilities. During opencast mining, overburden and top soil are produced as solid wastes temporarily as these materials are used for land reclamation.
During the year 2021-22, 0.730 million cubic meter of overburden was generated.

The overburden consists of the following constituents:

1. Soil
2. Shale, sandy shale (including carbonaceous shale)
3. Alternate bands of shale and sand stone
4. Sand stone

DISPOSAL PRACTICE

The entire overburden generated will be used for back filling. In order to control soil erosion from external dumps, foot drains (4x2) m has been provided to collect water flowing down the dump and carry it to the sedimentation lagoon. On the river side, the dump surface has been pitched with stone and boulder. Plantation has been done on some part of the dump and remaining part is being planted.

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, following pollution control measures have been implemented.

1.0 ANTI AIR POLLUTION MEASURES

The following measures have been taken to control air pollution:

i) Two mobile water sprinklers of 28 Kl capacity and two of 20 KL capacity are used for regular sprinkling of water on haul roads and coal transport roads respectively

ii) Water sprinkling in Feeder Breaker.

iii) WBM road of length 500 m & PCC road of around 3.2 km has been constructed and maintained for coal transport.

iv) All drills are equipped with wet drilling arrangement.

v) Regular plantation of trees is being done on the technically reclaimed area with the collaboration of State forest Department. Plantation of about 2.4 Lakh plants over 97 Ha area has already been done.

vi) Two sumps on dip side act as settling pond. The clean water from the sumps is utilized for dust suppression on haul and transportation road. Total capacity of sumps is about 150 Million gallons.

vii) The catch drains have been constructed around the foot of the OB dumps in order to collect surface run off from the dumps and convey to settling ponds.

viii) Oil and grease trap has been installed in the workshop for treatment of effluent.

ix) Embankment of length 2.2 km and width 60 m has been constructed along Damodar River. The embankment and its slope is covered with dense plantation

x) Guard walls of length 40m and 60 m has been constructed along the Damodar Bank

xi) Toe wall of length about 300 m has been constructed

xii) Regular sprinkling of water on haul roads and other roads.

xiii) Wetting of ROM coal before crushing in Feeder Breaker.

xiv) Water sprinkling on coal stock.

xv) 52 fixed water sprinklers installed in the coal transportation road.

xvi) A total Plantation in 99 ha on OB dumps has been done till FY 2022-23 and in other vacant space.

xvii) Blasting is done during congenial atmosphere.

2.0 ANTI WATER POLLUTION MEASURES

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

i) The mine water is pumped into a sedimentation pond from where it is pumped for reuse. Some portions of mine water are also used for haul road dust suppression.

ii) The catch drains has been constructed around the foot of the O.B. dumps in order to collect surface runoff water from the dumps and convey them to the settling ponds.

3.0. ANTI NOISE POLLUTION MEASURES

i) Blasting operation is carried out between 12.30 PM to 3.00 PM.

ii) Result of noise monitoring; reveal that the noise level is well below well below the prescribed limit.

4.0. MEASURES FOR RECLAMATION OF LAND

Overburden generated during mining is being dumped into decoaled area. After the completion of the backfilling operation, it is proposed to start technical and biological reclamation of the internal dumps. At the end of mining operation, some decoaled area will remain empty, which would be used for storing rain water. The presence of such a water body will help in increasing the moisture content of soil of adjacent area and ultimately it would promote the growth of vegetation.

PART - H

ADDITIONAL INVESTMENT PROPOSAL FOR ENVIRONMENTAL PROTECTION INCLUDING ABATEMENT OF POLLUTION

In future, investment will be made in following heads for further improvement of environment around the project:

i. The plantation will be done over vacant space within the mine leasehold boundary.
ii. Toe walls at the foot of OB dumps are constructed to prevent sliding of material

iii. Scheme will be prepared adjacent to mine boundary for Damodar River Action Plan.

PART - I

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

A comprehensive Environmental Management Plan (EMP) for this project (0.8 MTPA to 2.00 MTPA), formulated by RI-III of CMPDI, was approved by the MOEF vide letter no. J-11015/227/2007-IA.II(M) dated 05.10.2009. This report is prepared with a view to fulfill the statutory obligations laid down by the Ministry of Environment& Forest. The implementation of the EMP is under progress and the same is also reviewed from time to time. The regular monitoring of the ambient air and water quality is being done in and around core zone and the quarterly monitoring report is submitted to the Jharkhand State Pollution Control Board, Ranchi and Ministry of Environment & Forest, New Delhi.

Dy Manager (Envt)
NK Area

Environment Officer/IC
Rohini OCP

Project Officer
Rohini OCP

Details of reclamation are as given below

S.No	Details	Area (Ha)
1	Leasehold Area	255.68
2	Quarry Area	204.05
3	Broken Area (mined out area)	202
4	Technically Reclaimed Area	162
5	**Technically Reclaimed Area %**	**80.19%**
6	Biologically Reclaimed Area	97
7	**Biologically Reclaimed Area %**	**~59.87%**

S.No	Land details(All area in Ha)				Technically Reclaimed area (in Ha)	Bio-Reclaimed Land (in Ha)			Remarks
	Forest Land	Non-Forest Land	Total Land	Total mined out area		Forest Land	Non-Forest Land	Total Reclaimed Land	
1	154.41	103.76	258.17	202	162	38	61	99	Plantation started from 1994-95

Name of Project	Year of Plantation	Area in Ha	Category of Land	No. of Plants	Main species
Rohini OCP	**1994-95**	**11.00**	**OB dump**	**27500**	**Acacia, Gamhar, seashamsubbabul,Karanj, Kathsagwan, Chakundi, Eucalyptus, Ber, Amla, Emli, Babul Bamboo, Menzium, etc. With about 60% survival**
	2000-01	**18.00**		**45000**	
	2003-04	**9.00**		**22500**	
	2005-06	**5.00**		**12500**	
	2006-07	**8.00**		**20000**	
	2007-08	**13.00**		**32500**	
	2008-09	**14.00**		**35000**	
	2012-13	**4.00**		**10000**	
	2017	**15.00**		**37500**	
	2021	**2.00**		**3000**	
	Total	**99.00**		**245500**	

Wet drilling at Rohini OCP

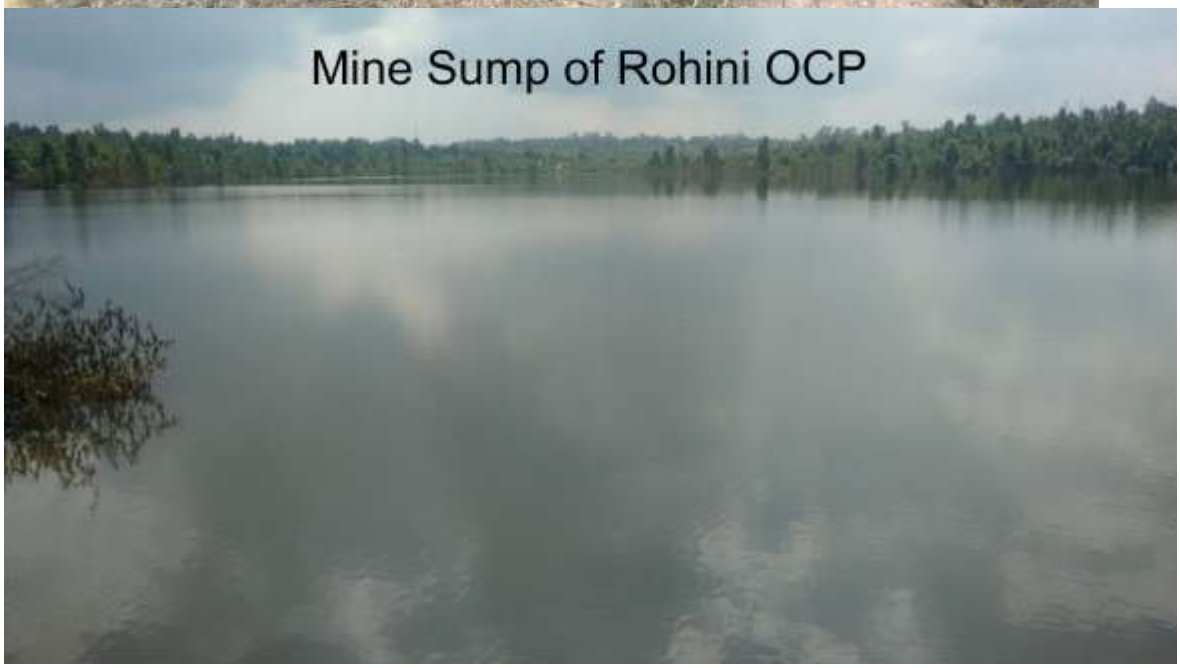
Water sprinkling in Rohini OCP


Dust Control on Coal Transport Road


Water Sprinkler on haul road of Rohini OCP

Fixed water sprinklers in Coal transportation road


OIL& GREASE TRAP. ROHINI OCP
Last Date of Cleaning:


Mine Sump of Rohini OCP

Plantation Photographs of Rohini OCP


Plantation done in Monsoon
2017


Rohini OCP : Plantation (2012-13)


Rohini OCP : Reclamation (2014-16)

Toe wall/ retention Walls in RohinI OCP

Pisciculture in mine sump of Rohini OCP

CSR activities in NK Area

NK Area carries out CSR activities in 14 different panchayats of Khalari and Tandwa circle. Some of CSR activities are as follows:

Drinking Water

3 Deep borings, 9 wells, 6 handpumps, 3 water purifiers at Khalari & Mcluskieganj railway station and khalari block


सेन्ट्रल कोलफील्ड्स लिमिटेड
नोवल कोरोनावायरस
(COVID-19)
खाद्य सामग्री
का
वितरण

Quarantine library

Graameen Football

खिलाड़ियों को उपलब्ध करायेंगे बेहतर कोच

बालिका वर्ग में गणेश स्पोर्टिंग क्लब राय व बालक वर्ग में विश्रामपुर की टीम विजयी

Distribution of sports items

Swachhta Hi Sewa 2019

1000 cloth bag distribution, social message and branding with help of 3000 pamphlets depicting restriction on use of single use plastic at houses, shops and public places in NK Area

Tricycles for physically challenged

39 tricycles for physically challenged

Village/School health Camps

Total -175 Camps

Construction of toilets

Community hall constructed under CSR scheme of NK Area

Installation of Hand pipes

Construction of well at Mcluskiganj

Construction of road and bridge near Purnadih village

TEST REPORT

06/22 Test Report No. 2200	**Job No. 094321044**	**Year**	FY2022-23
Type of Sample	Ambient Air	Quarter Ending	Jun-22
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 : North Karanpura **Project: Rohini OCP** **Stations:** P.O.Office

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters (in µg/m^3)					Wind Direction (from) & Weather
				Total Particulate Matter (PM_{10}+ >PM_{10})TPM	Particulate Matter (PM_{10})	Particulate Matter ($PM_{2.5}$)	Sulphur Dioxide (SO_2)	Nitrogen Oxides (as NO_x)	
Apr-22 1st FN	01/04/22-02/04/22	16-04-2022	16/04/22-19/04/22	223	102	54	< 25	< 6	East Sunny
Apr-22 2nd FN	18/04/22-19/04/22	02-05-2022	02/05/22-06/05/22	236	109	63	< 25	< 6	East Sunny
May-22 3rd FN	02/05/22-03/05/22	16-05-2022	16/05/22-20/05/22	177	79	44	< 25	< 6	East Sunny
May-22 4th FN	16/05/22-17/05/22	01-06-2022	01/06/22-07/06/22	230	111	50	< 25	< 6	East Sunny
Jun-22 5th FN	01/06/22-02/06/22	16-06-2022	16/06/22-18/06/22	230	151	63	< 25	< 6	East Sunny
Jun-22 6th FN	16/06/22-17/06/22	01-07-2022	01/07/22-06/07/22	242	122	62	< 25	< 6	East 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.

Analysed By Authorized Signatory

TEST REPORT

06/22 Test Report No. 2201	Job No. 094321044	Year	FY2022-23
Type of Sample	Ambient Air	Quarter Ending	Jun-22
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 : **North Karanpura** **Project:** **Rohini OCP** **Stations:** Ashok Vihar Colony

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters (in µg/m^3)					Wind Direction (from) & Weather
				Total Particulate Matter (PM_{10}+ >PM_{10})TPM	Particulate Matter (PM_{10})	Particulate Matter ($PM_{2.5}$)	Sulphur Dioxide (SO_2)	Nitrogen Oxides (as NO_x)	
Apr-22 1st FN	01/04/22-02/04/22	16-04-2022	16/04/22-19/04/22	147	73	32	< 25	< 6	East Sunny
Apr-22 2nd FN	18/04/22-19/04/22	02-05-2022	02/05/22-06/05/22	110	59	28	< 25	< 6	East Sunny
May-22 3rd FN	02/05/22-03/05/22	16-05-2022	16/05/22-20/05/22	169	66	37	< 25	< 6	East Sunny
May-22 4th FN	16/05/22-17/05/22	01-06-2022	01/06/22-07/06/22	139	80	31	< 25	< 6	East Sunny
Jun-22 5th FN	01/06/22-02/06/22	16-06-2022	16/06/22-18/06/22	211	91	49	< 25	< 6	East Sunny
Jun-22 6th FN	16/06/22-17/06/22	01-07-2022	01/07/22-06/07/22	251	134	64	< 25	< 6	East 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

06/22 Test Report No. 2202	**Job No. 094321044**	**Year**	FY2022-23
Type of Sample	Ambient Air	Quarter Ending	Jun-22
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 : **North Karanpura** **Project:** **Rohini OCP** **Stations:** Intake Well Pump

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters (in µg/m^3)					Wind Direction (from) & Weather
				Total Particulate Matter (PM_{10}+ >PM_{10})TPM	Particulate Matter (PM_{10})	Particulate Matter ($PM_{2.5}$)	Sulphur Dioxide (SO_2)	Nitrogen Oxides (as NO_x)	
Apr-22 1st FN	01/04/22-02/04/22	16-04-2022	16/04/22-19/04/22	112	58	21	< 25	< 6	East Sunny
Apr-22 2nd FN	18/04/22-19/04/22	02-05-2022	02/05/22-06/05/22	138	72	47	< 25	< 6	East Sunny
May-22 3rd FN	02/05/22-03/05/22	16-05-2022	16/05/22-20/05/22	108	51	23	< 25	< 6	East Sunny
May-22 4th FN	16/05/22-17/05/22	01-06-2022	01/06/22-07/06/22	183	83	47	< 25	< 6	East Sunny
Jun-22 5th FN	01/06/22-02/06/22	16-06-2022	16/06/22-18/06/22	170	78	32	< 25	< 6	East Sunny
Jun-22 6th FN	16/06/22-17/06/22	01-07-2022	01/07/22-06/07/22	245	82	47	< 25	< 6	East 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

06/22 Test Report No. 2203	**Job No. 094321044**	**Year**	FY2022-23
Type of Sample	Ambient Air	Quarter Ending	Jun-22
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 : **North Karanpura** **Project:** **Rohini OCP** **Stations:** Workshop

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters (in µg/m^3)					Wind Direction (from) & Weather
				Total Particulate Matter (PM_{10}+ >PM_{10})TPM	Particulate Matter (PM_{10})	Particulate Matter ($PM_{2.5}$)	Sulphur Dioxide (SO_2)	Nitrogen Oxides (as NO_x)	
Apr-22 1st FN	01/04/22-02/04/22	16-04-2022	16/04/22-19/04/22	163	90	47	< 25	< 6	East Sunny
Apr-22 2nd FN	18/04/22-19/04/22	02-05-2022	02/05/22-06/05/22	151	71	44	< 25	< 6	East Sunny
May-22 3rd FN	02/05/22-03/05/22	16-05-2022	16/05/22-20/05/22	167	88	34	< 25	< 6	East Sunny
May-22 4th FN	16/05/22-17/05/22	01-06-2022	01/06/22-07/06/22	270	152	70	< 25	< 6	East Sunny
Jun-22 5th FN	01/06/22-02/06/22	16-06-2022	16/06/22-18/06/22	215	109	59	< 25	< 6	East Sunny
Jun-22 6th FN	16/06/22-17/06/22	01-07-2022	01/07/22-06/07/22	618	342	124	< 25	6	East 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.

Analysed By Authorized Signatory

TEST REPORT

06/22 Test Report No. 2204	**Job No. 094321044**	**Year**	FY2022-23
Type of Sample:	Noise	Quarter Ending	Jun-22
Customer	CCL		
Testing/ Sampling Protocol:	*'The noise pollution (Regulation and Control), Rules,2000, LQR 34*		
Remarks:			

TEST RESULT

The sample has been tested with the following results: -

Area : **North Karanpura** **Project:** Rohini OCP

Station Name	Noise Level dB(A) Leq					
	Apr-22 1st FN	Apr-22 2nd FN	May-22 3rd FN	May-22 4th FN	Jun-22 5th FN	Jun-22 6th FN
	Day/Night	Day/Night	Day/Night	Day/Night	Day/Night	Day/Night
Date of recording	01-04-2022	18-04-2022	02-05-2022	16-05-2022	01-06-2022	16-06-2022
1. P.O.Office	69.7/63.6	70.6/64.7	69.5/63.6	69.7/63.9	70.2/64.5	70.5/64.6
Date of recording	01-04-2022	18-04-2022	02-05-2022	16-05-2022	01-06-2022	16-06-2022
2. Ashok Vihar Colony	67.8/61.5	69.2/63.3	68.7/62.8	68.6/62.8	69.6/63.4	69.7/63.4

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

06/22 Test Report No. 2205	**Job No. 094321044**	**Year**	FY2022-23
Type of Sample:	**Surface Water**	Quarter Ending	Jun-22
Customer	CCL	Date of Receipt:	18-04-2022
Mode of Receipt of Sample:	Joint sampling with customer	Date of Analysis:	18.04.22-30.06.22
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 : **North Karanpura** **Project:** **Rohini OCP**

Stations: **Date of Sampling:**

1. Damodar U/S of Kendua Conf. 06-04-2022
2. Damodar D/S of Kendua Conf.

06-04-2022

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			0.002	IS 3025/37:1988 R : 2003, AAS-VGA, Method
2	BOD (3 days 27°C), mg/l, Max	2	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			0.0004	APHA, 23rd Edition AAS-GTA Method, 2017
4	Chlorides (as Cl), mg/l, Max	14	22			2.00	IS-3025/32:1988, R-2007, Argentometric Method
5	Copper (as Cu), mg/l, Max	<0.02	<0.02			0.02	IS 3025/42: 1992, R : 2009, AAS (Air-Ac-Flame)
6	Dissolved Oxygen, min.	6.4	6			0.10	IS 3025/38: 1989, R:2003, Winkler Azide Method
7	Fluoride (as F) mg/l, Max	1.55	2.39			0.02	APHA, 23rd Edition, SPADNS Method, 2017
8	Hexavalent Chromium, mg/l, Max	<0.01	<0.01			0.01	APHA, 23rd Edition, 2017 Diphenylcarbohydrazide,
9	Iron (as Fe), mg/l, Max	<0.04	<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			0.001	APHA, 23rd Edition AAS-GTA Method, 2017
11	Nitrate (as NO_3), mg/l, Max	14.31	17.24			0.50	APHA, 23rd Edition, UV - Spectrophotometric, 2017
12	pH value	7.57	7.67			1.0	IS-3025/11:1983, R-1996, Electrometric Method
13	Phenolic compounds (as C_6H_5OH), mg/l, Max	<0.001	<0.001			0.001	APHA, 23rd Edition, 2017, 4-Amino Antipyrine Method,
14	Selenium (as Se), mg/l, Max	<0.0005	<0.0005			0.0005	IS 3025/56:2003 AAS-VGA Method
15	Sulphate (as SO_4) mg/l, Max	36	51			2.00	APHA, 23rd Edition Turbidity Method, 2017
16	Total Dissolved Solids, mg/l, Max	309	330			25.00	IS 3025 /16:1984 R : 2006, Gravimetric Method
17	Total Suspended Solids, mg/l, Max	18.2	22.3			10.00	IS 3025 /17:1984, R :1996, Gravimetric Method
18	Zinc (as Zn), mg/l, Max	0.017	0.014			0.005	IS 3025 /49: 1994, R : 2009, AAS (Air-Ac-Flame)

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TEST REPORT

09/22 Test Report No. 2200	**Job No. 094322160**	**Year**	FY2022-23
Type of Sample	Ambient Air	Quarter Ending	Sep-22
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 : North Karanpura **Project: Rohini OCP** **Stations:** P.O.Office

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters (in µg/m^3)					Wind Direction (from) & Weather
				Total Particulate Matter (PM_{10}+ >PM_{10})TPM	Particulate Matter (PM_{10})	Particulate Matter ($PM_{2.5}$)	Sulphur Dioxide (SO_2)	Nitrogen Oxides (as NO_x)	
Jul-22 1st FN	01/07/22-02/07/22	18-07-2022	18/07/22-20/07/22	277	121	58	< 25	< 6	East Sunny
Jul-22 2nd FN	18/07/22-19/07/22	01-08-2022	01/08/22-04/08/22	243	110	54	< 25	< 6	East Sunny
Aug-22 3rd FN	01/08/22-02/08/22	16-08-2022	16/08/22-23/08/22	175	84	47	< 25	< 6	East Sunny
Aug-22 4th FN	16/08/22-17/08/22	01-09-2022	01/09/22-10/09/22	271	124	75	< 25	< 6	East Sunny
Sep-22 5th FN	01/09/22-02/09/22	16-09-2022	16/09/22-20/09/22	285	141	67	< 25	< 6	East Sunny
Sep-22 6th FN	16/09/22-17/09/22	01-10-2022	01/10/22-08/10/22	280	81	54	< 25	< 6	East 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

09/22 Test Report No. 2201	Job No. 094322160	Year	FY2022-23
Type of Sample	Ambient Air	Quarter Ending	Sep-22
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 : **North Karanpura** **Project:** **Rohini OCP** **Stations:** Ashok Vihar Colony

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters (in µg/m^3)					Wind Direction (from) & Weather
				Total Particulate Matter (PM_{10}+ >PM_{10})TPM	Particulate Matter (PM_{10})	Particulate Matter ($PM_{2.5}$)	Sulphur Dioxide (SO_2)	Nitrogen Oxides (as NO_x)	
Jul-22 1st FN	01/07/22-02/07/22	18-07-2022	18/07/22-20/07/22	214	90	53	< 25	< 6	East Sunny
Jul-22 2nd FN	18/07/22-19/07/22	01-08-2022	01/08/22-04/08/22	210	94	44	< 25	< 6	East Sunny
Aug-22 3rd FN	01/08/22-02/08/22	16-08-2022	16/08/22-23/08/22	210	92	57	< 25	< 6	East Sunny
Aug-22 4th FN	18/08/22-19/08/22	01-09-2022	01/09/22-10/09/22	214	79	41	< 25	< 6	East Sunny
Sep-22 5th FN	01/09/22-02/09/22	16-09-2022	16/09/22-20/09/22	160	68	31	< 25	< 6	East Sunny
Sep-22 6th FN	16/09/22-17/09/22	01-10-2022	01/10/22-08/10/22	137	60	36	< 25	< 6	East 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

09/22 Test Report No. 2202	**Job No. 094322160**	**Year**	FY2022-23
Type of Sample	Ambient Air	Quarter Ending	Sep-22
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 : **North Karanpura** **Project:** **Rohini OCP** **Stations:** Intake Well Pump

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters (in µg/m^3)					Wind Direction (from) & Weather
				Total Particulate Matter (PM_{10}+ >PM_{10})TPM	Particulate Matter (PM_{10})	Particulate Matter ($PM_{2.5}$)	Sulphur Dioxide (SO_2)	Nitrogen Oxides (as NO_x)	
Jul-22 1st FN	01/07/22-02/07/22	18-07-2022	18/07/22-20/07/22	115	57	23	< 25	< 6	East Sunny
Jul-22 2nd FN	18/07/22-19/07/22	01-08-2022	01/08/22-04/08/22	266	105	53	< 25	< 6	East Sunny
Aug-22 3rd FN	01/08/22-02/08/22	16-08-2022	16/08/22-23/08/22	121	53	24	< 25	< 6	East Sunny
Aug-22 4th FN	16/08/22-17/08/22	01-09-2022	01/09/22-10/09/22	108	52	21	< 25	< 6	East Sunny
Sep-22 5th FN	01/09/22-02/09/22	16-09-2022	16/09/22-20/09/22	222	91	56	< 25	< 6	East Sunny
Sep-22 6th FN	16/09/22-17/09/22	01-10-2022	01/10/22-08/10/22	232	98	54	< 25	< 6	East 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

09/22 Test Report No. 2203	**Job No. 094322160**	**Year**	FY2022-23
Type of Sample	Ambient Air	Quarter Ending	Sep-22
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 : **North Karanpura** **Project:** **Rohini OCP** **Stations:** Workshop

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters (in µg/m^3)					Wind Direction (from) & Weather
				Total Particulate Matter (PM_{10}+ >PM_{10})TPM	Particulate Matter (PM_{10})	Particulate Matter ($PM_{2.5}$)	Sulphur Dioxide (SO_2)	Nitrogen Oxides (as NO_x)	
Jul-22 1st FN	01/07/22-02/07/22	18-07-2022	18/07/22-20/07/22	183	90	44	< 25	< 6	East Sunny
Jul-22 2nd FN	18/07/22-19/07/22	01-08-2022	01/08/22-04/08/22	225	103	46	< 25	< 6	East Sunny
Aug-22 3rd FN	01/08/22-02/08/22	16-08-2022	16/08/22-23/08/22	190	113	52	< 25	< 6	East Sunny
Aug-22 4th FN	16/08/22-17/08/22	01-09-2022	01/09/22-10/09/22	164	81	40	< 25	< 6	East Sunny
Sep-22 5th FN	01/09/22-02/09/22	16-09-2022	16/09/22-20/09/22	213	96	46	< 25	< 6	East Sunny
Sep-22 6th FN	16/09/22-17/09/22	01-10-2022	01/10/22-08/10/22	284	108	63	< 25	< 6	East 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

09/22 Test Report No. 2204	**Job No. 094322160**	**Year**	FY2022-23
Type of Sample:	Noise	Quarter Ending	Sep-22
Customer	CCL		
Testing/ Sampling Protocol:	*'The noise pollution (Regulation and Control), Rules,2000, LQR 34*		
Remarks:			

TEST RESULT

The sample has been tested with the following results: -

Area : **North Karanpura** **Project:** Rohini OCP

Station Name	Noise Level dB(A) Leq					
	Jul-22 1st FN	**Jul-22 2nd FN**	**Aug-22 3rd FN**	**Aug-22 4th FN**	**Sep-22 5th FN**	**Sep-22 6th FN**
	Day/Night	**Day/Night**	**Day/Night**	**Day/Night**	**Day/Night**	**Day/Night**
Date of recording	01-07-2022	18-07-2022	01-08-2022	21-08-2022	01-09-2022	16-09-2022
1. P.O.Office	70.8/64.7	70.2/66.3	70.3/64.4	68.9/62.8	70.6/64.7	70.3/64.4
Date of recording	01-07-2022	18-07-2022	01-08-2022	21-08-2022	01-09-2022	16-09-2022
2. Ashok Vihar Colony	69.6/63.5	69.4/65.5	69.5/63.7	72.7/66.6	69.8/63.5	69.7/63.5

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

09/22 Test Report No. 2205	**Job No. 094322160**	**Year**	FY2022-23
Type of Sample:	**Surface Water**	Quarter Ending	Sep-22
Customer	CCL	Date of Receipt:	18-07-2022
Mode of Receipt of Sample:	Joint sampling with customer	Date of Analysis:	18.07.22-07.09.22
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 : **North Karanpura** **Project:** **Rohini OCP**

Stations: **Date of Sampling:**

1. Damodar U/S of Kendua Conf. 06-07-2022
2. Damodar D/S of Kendua Conf. 06-07-2022

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			0.002	IS 3025/37:1988 R : 2003, AAS-VGA, Method
2	BOD (3 days 27°C), mg/l, Max	<2.0	<2.0			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			0.0004	APHA, 23rd Edition AAS-GTA Method, 2017
4	Chlorides (as Cl), mg/l, Max	8	8			2.00	IS-3025/32:1988, R-2007, Argentometric Method
5	Copper (as Cu), mg/l, Max	<0.02	<0.02			0.02	IS 3025/42: 1992, R : 2009, AAS (Air-Ac-Flame)
6	Dissolved Oxygen, min.	7.2	6.8			0.10	IS 3025/38: 1989, R:2003, Winkler Azide Method
7	Fluoride (as F) mg/l, Max	0.57	0.56			0.02	APHA, 23rd Edition, SPADNS Method, 2017
8	Hexavalent Chromium, mg/l, Max	<0.01	<0.01			0.01	APHA, 23rd Edition, 2017 Diphenylcarbohydrazide,
9	Iron (as Fe), mg/l, Max	<0.04	<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			0.001	APHA, 23rd Edition AAS-GTA Method, 2017
11	Nitrate (as NO_3), mg/l, Max	1.20	0.90			0.50	APHA, 23rd Edition, UV - Spectrophotometric, 2017
12	pH value	8.15	8.32			1.0	IS-3025/11:1983, R-1996, Electrometric Method
13	Phenolic compounds (as C_6H_5OH), mg/l, Max	<0.001	<0.001			0.001	APHA, 23rd Edition, 2017, 4-Amino Antipyrine Method,
14	Selenium (as Se), mg/l, Max	<0.0005	<0.0005			0.0005	IS 3025/56:2003 AAS-VGA Method
15	Sulphate (as SO_4) mg/l, Max	15	15			2.00	APHA, 23rd Edition Turbidity Method, 2017
16	Total Dissolved Solids, mg/l, Max	162	174			25.00	IS 3025 /16:1984 R : 2006, Gravimetric Method
17	Total Suspended Solids, mg/l, Max	19	24			10.00	IS 3025 /17:1984, R :1996, Gravimetric Method
18	Zinc (as Zn), mg/l, Max	0.009	0.008			0.005	IS 3025 /49: 1994, R : 2009, AAS (Air-Ac-Flame)

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ENVIRONMENT LABORATORY, CMPDI(HQ), RANCHI

TEST REPORT

12/22 Test Report No. 2200	Job No. 094322160	Year	FY2022-23
Type of Sample	Ambient Air	Quarter Ending	Dec-22
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 : North Karanpura **Project: Rohini OCP** **Stations:** P.O.Office

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters (in µg/m^3)					Wind Direction (from) & Weather
				Total Particulate Matter (PM_{10}+ >PM_{10})TPM	Particulate Matter (PM_{10})	Particulate Matter ($PM_{2.5}$)	Sulphur Dioxide (SO_2)	Nitrogen Oxides (as NO_x)	
Oct-22 1st FN	03/10/22-04/10/22	17-10-2022	17/10/22-26/10/22	172	81	46	< 25	< 6	East Sunny
Oct-22 2nd FN	17/10/22-18/10/22	01-11-2022	01/11/22-07/11/22	173	87	42	< 25	< 6	East Sunny
Nov-22 3rd FN	01/11/22-02/11/22	16-11-2022	16/11/22-23/11/22	153	77	37	< 25	< 6	East Sunny
Nov-22 4th FN	16/11/22-17/11/22	01-12-2022	01/12/22-09/12/22	208	89	50	< 25	< 6	East Sunny
Dec-22 5th FN	01/12/22-02/12/22	16-12-2022	16/12/22-21/12/22	184	76	34	< 25	< 6	East Sunny
Dec-22 6th FN	16/12/22-17/12/22	02-01-2023	02/01/23-10/01/23	235	119	56	< 25	< 6	East 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

12/22 Test Report No. 2201	Job No. 094322160	Year	FY2022-23
Type of Sample	Ambient Air	Quarter Ending	Dec-22
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 : **North Karanpura** **Project:** **Rohini OCP** **Stations:** Ashok Vihar Colony

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters (in µg/m³)					Wind Direction (from) & Weather
				Total Particulate Matter (PM_{10}+ >PM_{10})TPM	Particulate Matter (PM_{10})	Particulate Matter ($PM_{2.5}$)	Sulphur Dioxide (SO_2)	Nitrogen Oxides (as NO_x)	
Oct-22 1st FN	03/10/22-04/10/22	17-10-2022	17/10/22-26/10/22	165	69	30	< 25	< 6	East Sunny
Oct-22 2nd FN	17/10/22-18/10/22	01-11-2022	01/11/22-07/11/22	123	61	28	< 25	< 6	East Sunny
Nov-22 3rd FN	01/11/22-02/11/22	16-11-2022	16/11/22-23/11/22	167	74	36	< 25	< 6	East Sunny
Nov-22 4th FN	16/11/22-17/11/22	01-12-2022	01/12/22-09/12/22	179	89	47	< 25	< 6	East Sunny
Dec-22 5th FN	01/12/22-02/12/22	16-12-2022	16/12/22-21/12/22	198	86	43	< 25	< 6	East Sunny
Dec-22 6th FN	16/12/22-17/12/22	02-01-2023	02/01/23-10/01/23	235	96	49	< 25	< 6	East 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

12/22 Test Report No. 2202	**Job No. 094322160**	**Year**	FY2022-23
Type of Sample	Ambient Air	Quarter Ending	Dec-22
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 : **North Karanpura** **Project:** **Rohini OCP** **Stations:** Intake Well Pump

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters (in µg/m^3)					Wind Direction (from) & Weather
				Total Particulate Matter (PM_{10}+ >PM_{10})TPM	Particulate Matter (PM_{10})	Particulate Matter ($PM_{2.5}$)	Sulphur Dioxide (SO_2)	Nitrogen Oxides (as NO_x)	
Oct-22 1st FN	03/10/22-04/10/22	17-10-2022	17/10/22-26/10/22	179	73	47	< 25	< 6	East Sunny
Oct-22 2nd FN	17/10/22-18/10/22	01-11-2022	01/11/22-07/11/22	176	79	37	< 25	< 6	East Sunny
Nov-22 3rd FN	01/11/22-02/11/22	16-11-2022	16/11/22-23/11/22	125	66	33	< 25	< 6	East Sunny
Nov-22 4th FN	16/11/22-17/11/22	01-12-2022	01/12/22-09/12/22	131	70	36	< 25	< 6	East Sunny
Dec-22 5th FN	01/12/22-02/12/22	16-12-2022	16/12/22-21/12/22	135	62	33	< 25	< 6	East Sunny
Dec-22 6th FN	16/12/22-17/12/22	02-01-2023	02/01/23-10/01/23	152	82	37	< 25	< 6	East 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

12/22 Test Report No. 2203	Job No. 094322160	Year	FY2022-23
Type of Sample	Ambient Air	Quarter Ending	Dec-22
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 : **North Karanpura** **Project:** **Rohini OCP** **Stations:** Workshop

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters (in µg/m^3)					Wind Direction (from) & Weather
				Total Particulate Matter (PM_{10}+ >PM_{10})TPM	Particulate Matter (PM_{10})	Particulate Matter ($PM_{2.5}$)	Sulphur Dioxide (SO_2)	Nitrogen Oxides (as NO_x)	
Oct-22 1st FN	03/10/22-04/10/22	17-10-2022	17/10/22-26/10/22	195	103	52	< 25	< 6	East Sunny
Oct-22 2nd FN	17/10/22-18/10/22	01-11-2022	01/11/22-07/11/22	216	116	67	< 25	< 6	East Sunny
Nov-22 3rd FN	01/11/22-02/11/22	16-11-2022	16/11/22-23/11/22	214	114	51	< 25	< 6	East Sunny
Nov-22 4th FN	16/11/22-17/11/22	01-12-2022	01/12/22-09/12/22	274	143	77	< 25	< 6	East Sunny
Dec-22 5th FN	01/12/22-02/12/22	16-12-2022	16/12/22-21/12/22	175	84	45	< 25	< 6	East Sunny
Dec-22 6th FN	16/12/22-17/12/22	02-01-2023	02/01/23-10/01/23	292	143	75	< 25	< 6	East 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

12/22 Test Report No. 2204	**Job No. 094322160**	**Year**	FY2022-23
Type of Sample:	Noise	Quarter Ending	Dec-22
Customer	CCL		
Testing/ Sampling Protocol:	*'The noise pollution (Regulation and Control), Rules,2000, LQR 34*		
Remarks:			

TEST RESULT

The sample has been tested with the following results: -

Area : **North Karanpura** **Project:** Rohini OCP

Station Name	Noise Level dB(A) Leq					
	Oct-22 1st FN	Oct-22 2nd FN	Nov-22 3rd FN	Nov-22 4th FN	Dec-22 5th FN	Dec-22 6th FN
	Day/Night	Day/Night	Day/Night	Day/Night	Day/Night	Day/Night
Date of recording	03-10-2022	17-10-2022	01-11-2022	16-11-2022	01-12-2022	16-12-2022
1. P.O.Office	70.7/64.6	70.2/64.3	70.2/64.3	70.6/64.5	69.9/63.8	70.2/64.3
Date of recording	03-10-2022	17-10-2022	01-11-2022	16-11-2022	01-12-2022	16-12-2022
2. Ashok Vihar Colony	69.5/63.3	68.6/62.5	68.8/62.6	69.3/63.4	67.7/62.6	69.4/63.6

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

12/22 Test Report No. 2205	**Job No. 094322160**	**Year**	FY2022-23
Type of Sample:	**Surface Water**	Quarter Ending	Dec-22
Customer	CCL	Date of Receipt:	17-10-2022
Mode of Receipt of Sample:	Joint sampling with customer	Date of Analysis:	17.10.22-15.12.22
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 : **North Karanpura** **Project:** **Rohini OCP**

Stations: **Date of Sampling:**

1. Damodar U/S of Kendua Conf. 08-10-2022
2. Damodar D/S of Kendua Conf.

08-10-2022

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			0.002	IS 3025/37:1988 R : 2003, AAS-VGA, Method
2	BOD (3 days 27°C), mg/l, Max	2.2	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			0.0004	APHA, 23rd Edition AAS-GTA Method, 2017
4	Chlorides (as Cl), mg/l, Max	10	12			2.00	IS-3025/32:1988, R-2007, Argentometric Method
5	Copper (as Cu), mg/l, Max	<0.02	<0.02			0.02	IS 3025/42: 1992, R : 2009, AAS (Air-Ac-Flame)
6	Dissolved Oxygen, min.	7.8	7.7			0.10	IS 3025/38: 1989, R:2003, Winkler Azide Method
7	Fluoride (as F) mg/l, Max	0.41	0.44			0.02	APHA, 23rd Edition, SPADNS Method, 2017
8	Hexavalent Chromium, mg/l, Max	<0.01	<0.01			0.01	APHA, 23rd Edition, 2017 Diphenylcarbohydrazide,
9	Iron (as Fe), mg/l, Max	<0.04	<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			0.001	APHA, 23rd Edition AAS-GTA Method, 2017
11	Nitrate (as NO_3), mg/l, Max	2.10	2.29			0.50	APHA, 23rd Edition, UV - Spectrophotometric, 2017
12	pH value	8.21	8.19			1.0	IS-3025/11:1983, R-1996, Electrometric Method
13	Phenolic compounds (as C_6H_5OH), mg/l, Max	<0.001	<0.001			0.001	APHA, 23rd Edition, 2017, 4-Amino Antipyrine Method,
14	Selenium (as Se), mg/l, Max	<0.0005	<0.0005			0.0005	IS 3025/56:2003 AAS-VGA Method
15	Sulphate (as SO_4) mg/l, Max	17	19			2.00	APHA, 23rd Edition Turbidity Method, 2017
16	Total Dissolved Solids, mg/l, Max	216	234			25.00	IS 3025 /16:1984 R : 2006, Gravimetric Method
17	Total Suspended Solids, mg/l, Max	21	25			10.00	IS 3025 /17:1984, R :1996, Gravimetric Method
18	Zinc (as Zn), mg/l, Max	0.006	0.007			0.005	IS 3025 /49: 1994, R : 2009, AAS (Air-Ac-Flame)

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TEST REPORT

03/23 Test Report No. 2200	**Job No. 094322160**	**Year**	FY2022-23
Type of Sample	Ambient Air	Quarter Ending	Mar-23
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 : North Karanpura **Project: Rohini OCP** **Stations:** P.O.Office

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters (in µg/m^3)					Wind Direction (from) & Weather
				Total Particulate Matter (PM_{10}+ >PM_{10})TPM	Particulate Matter (PM_{10})	Particulate Matter ($PM_{2.5}$)	Sulphur Dioxide (SO_2)	Nitrogen Oxides (as NO_x)	
Jan-23 1st FN	02/01/23-03/01/23	16-01-2023	16/01/23-19/01/23	295	153	56	< 25	< 6	East Sunny
Jan-23 2nd FN	16/01/23-17/01/23	01-02-2023	01/02/23-08/02/23	206	74	39	< 25	< 6	East Sunny
Feb-23 3rd FN	01/02/23-02/02/23	16-02-2023	16/02/23-17/02/23	258	104	52	< 25	< 6	East Sunny
Feb-23 4th FN	16/02/23-17/02/23	01-03-2023	01/03/23-14/03/23	214	119	65	< 25	< 6	East Sunny
Mar-23 5th FN	01/03/23-02/03/23	16-03-2023	16/03/23-22/03/23	236	106	47	< 25	< 6	East Sunny
Mar-23 6th FN	16/03/23-17/03/23	01-04-2023	01/04/23-17/04/23	337	218	54	< 25	< 6	East 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

03/23 Test Report No. 2201	**Job No. 094322160**	**Year**	FY2022-23
Type of Sample	Ambient Air	Quarter Ending	Mar-23
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 : **North Karanpura** **Project:** **Rohini OCP** **Stations:** Ashok Vihar Colony

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters (in µg/m^3)					Wind Direction (from) & Weather
				Total Particulate Matter (PM_{10}+ >PM_{10})TPM	Particulate Matter (PM_{10})	Particulate Matter ($PM_{2.5}$)	Sulphur Dioxide (SO_2)	Nitrogen Oxides (as NO_x)	
Jan-23 1st FN	02/01/23-03/01/23	16-01-2023	16/01/23-19/01/23	184	91	38	< 25	< 6	East Sunny
Jan-23 2nd FN	16/01/23-17/01/23	01-02-2023	01/02/23-08/02/23	244	98	53	< 25	< 6	East Sunny
Feb-23 3rd FN	01/02/23-02/02/23	16-02-2023	16/02/23-17/02/23	173	76	43	< 25	< 6	East Sunny
Feb-23 4th FN	16/02/23-17/02/23	01-03-2023	01/03/23-14/03/23	197	88	45	< 25	< 6	East Sunny
Mar-23 5th FN	01/03/23-02/03/23	16-03-2023	16/03/23-22/03/23	171	87	50	< 25	< 6	East Sunny
Mar-23 6th FN	16/03/23-17/03/23	01-04-2023	01/04/23-17/04/23	178	78	33	< 25	< 6	East 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

03/23 Test Report No. 2202	**Job No. 094322160**	**Year**	FY2022-23
Type of Sample	Ambient Air	Quarter Ending	Mar-23
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 : **North Karanpura** **Project:** **Rohini OCP** **Stations:** Intake Well Pump

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters (in µg/m^3)					Wind Direction (from) & Weather
				Total Particulate Matter (PM_{10}+ >PM_{10})TPM	Particulate Matter (PM_{10})	Particulate Matter ($PM_{2.5}$)	Sulphur Dioxide (SO_2)	Nitrogen Oxides (as NO_x)	
Jan-23 1st FN	02/01/23-03/01/23	16-01-2023	16/01/23-19/01/23	128	67	31	< 25	< 6	East Sunny
Jan-23 2nd FN	16/01/23-17/01/23	01-02-2023	01/02/23-08/02/23	167	80	36	< 25	< 6	East Sunny
Feb-23 3rd FN	01/02/23-02/02/23	16-02-2023	16/02/23-17/02/23	119	67	28	< 25	< 6	East Sunny
Feb-23 4th FN	16/02/23-17/02/23	01-03-2023	01/03/23-14/03/23	132	73	41	< 25	< 6	East Sunny
Mar-23 5th FN	01/03/23-02/03/23	16-03-2023	16/03/23-22/03/23	138	75	37	< 25	< 6	East Sunny
Mar-23 6th FN	16/03/23-17/03/23	01-04-2023	01/04/23-17/04/23	205	83	41	< 25	< 6	East 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

03/23 Test Report No. 2203	**Job No. 094322160**	**Year**	FY2022-23
Type of Sample	Ambient Air	Quarter Ending	Mar-23
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 : **North Karanpura** **Project:** **Rohini OCP** **Stations:** Workshop

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters (in µg/m^3)					Wind Direction (from) & Weather
				Total Particulate Matter (PM_{10}+ >PM_{10})TPM	Particulate Matter (PM_{10})	Particulate Matter ($PM_{2.5}$)	Sulphur Dioxide (SO_2)	Nitrogen Oxides (as NO_x)	
Jan-23 1st FN	02/01/23-03/01/23	16-01-2023	16/01/23-19/01/23	563	343	117	< 25	6	East Sunny
Jan-23 2nd FN	16/01/23-17/01/23	01-02-2023	01/02/23-08/02/23	173	90	48	< 25	< 6	East Sunny
Feb-23 3rd FN	01/02/23-02/02/23	16-02-2023	16/02/23-17/02/23	213	119	62	< 25	< 6	East Sunny
Feb-23 4th FN	16/02/23-17/02/23	01-03-2023	01/03/23-14/03/23	232	109	52	< 25	< 6	East Sunny
Mar-23 5th FN	01/03/23-02/03/23	16-03-2023	16/03/23-22/03/23	182	94	63	< 25	< 6	East Sunny
Mar-23 6th FN	16/03/23-17/03/23	01-04-2023	01/04/23-17/04/23	258	178	60	< 25	< 6	East 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

03/23 Test Report No. 2204	**Job No. 094322160**	**Year**	FY2022-23
Type of Sample:	Noise	Quarter Ending	Mar-23
Customer	CCL		
Testing/ Sampling Protocol:	*'The noise pollution (Regulation and Control), Rules,2000, LQR 34*		
Remarks:			

TEST RESULT

The sample has been tested with the following results: -

Area : **North Karanpura** **Project:** Rohini OCP

Station Name	Noise Level dB(A) Leq					
	Jan-23 1st FN	Jan-23 2nd FN	Feb-23 3rd FN	Feb-23 4th FN	Mar-23 5th FN	Mar-23 6th FN
	Day/Night	Day/Night	Day/Night	Day/Night	Day/Night	Day/Night
Date of recording	02-01-2023	16-01-2023	01-02-2023	16-02-2023	01-03-2023	16-03-2023
1. P.O.Office	69.7/63.8	69.6/63.5	70.2/64.3	70.3/64.5	69.7/63.8	70.8/64.7
Date of recording	02-01-2023	16-01-2023	01-02-2023	16-02-2023	01-03-2023	16-03-2023
2. Ashok Vihar Colony	67.5/61.4	66.7/60.8	68.7/62.5	68.7/62.4	67.5/61.4	69.6/63.5

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

03/23 Test Report No. 2205	**Job No. 094322160**	**Year**	FY2022-23
Type of Sample:	**Surface Water**	Quarter Ending	Mar-23
Customer	CCL	Date of Receipt:	16-01-2023
Mode of Receipt of Sample:	Joint sampling with customer	Date of Analysis:	16.01.23-16.03.23
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 : **North Karanpura** **Project:** **Rohini OCP**

Stations: **Date of Sampling:**

1. Damodar U/S of Kendua Conf. 07-01-2023
2. Damodar D/S of Kendua Conf.

07-01-2023

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			0.002	IS 3025/37:1988 R : 2003, AAS-VGA, Method
2	BOD (3 days 27°C), mg/l, Max	2.2	<2.0			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			0.0004	APHA, 23rd Edition AAS-GTA Method, 2017
4	Chlorides (as Cl), mg/l, Max	8	8			2.00	IS-3025/32:1988, R-2007, Argentometric Method
5	Copper (as Cu), mg/l, Max	<0.02	<0.02			0.02	IS 3025/42: 1992, R : 2009, AAS (Air-Ac-Flame)
6	Dissolved Oxygen, min.	7.3	7.9			0.10	IS 3025/38: 1989, R:2003, Winkler Azide Method
7	Fluoride (as F) mg/l, Max	0.52	0.47			0.02	APHA, 23rd Edition, SPADNS Method, 2017
8	Hexavalent Chromium, mg/l, Max	<0.01	<0.01			0.01	APHA, 23rd Edition, 2017 Diphenylcarbohydrazide,
9	Iron (as Fe), mg/l, Max	<0.04	<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			0.001	APHA, 23rd Edition AAS-GTA Method, 2017
11	Nitrate (as NO_3), mg/l, Max	1.11	1.14			0.50	APHA, 23rd Edition, UV - Spectrophotometric, 2017
12	pH value	7.4	7.9			1.0	IS-3025/11:1983, R-1996, Electrometric Method
13	Phenolic compounds (as C_6H_5OH), mg/l, Max	<0.001	<0.001			0.001	APHA, 23rd Edition, 2017, 4-Amino Antipyrine Method,
14	Selenium (as Se), mg/l, Max	<0.0005	<0.0005			0.0005	IS 3025/56:2003 AAS-VGA Method
15	Sulphate (as SO_4) mg/l, Max	20	21			2.00	APHA, 23rd Edition Turbidity Method, 2017
16	Total Dissolved Solids, mg/l, Max	191	192			25.00	IS 3025 /16:1984 R : 2006, Gravimetric Method
17	Total Suspended Solids, mg/l, Max	18	15			10.00	IS 3025 /17:1984, R :1996, Gravimetric Method
18	Zinc (as Zn), mg/l, Max	<0.005	<0.005			0.005	IS 3025 /49: 1994, R : 2009, AAS (Air-Ac-Flame)

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