

ENVIRONMENTAL STATEMENT 2018-19

**KDH OPENCAST PROJECT
N K AREA, DAKRA**

September, 2019



**CENTRAL COALFIELDS
LIMITED
ENVIRONMENT DIVISION
Ranchi**

EXECUTIVE - SUMMARY

1.0 BACKGROUND

K. D. Hesalong Opencast project of Central Coalfield Ltd is situated in North Karanpura Coalfield. The lease hold area is being expanded. The mine capacity is 4.5 MTY. The project produced 0.386 MT of coal during the year 2018-19. The expansion of present quarry requires an additional 186.61 Ha of land. Diversion of 130.36 ha of forest land was cleared by the Forest Department. A comprehensive Environmental Management Plan (EMP) for this project (4.5 MTY), has been formulated by RI-III of CMPDI. EC for normative capacity of 4.5 MTPA and peak capacity 5.00 MTPA has been accorded by MOEF vide reference J-11015/311.2010-IA-II(M) dt. 30.01.2015.

This report is prepared with a view to fulfill the statutory obligations laid down by the Ministry of Environment & Forest.

2.0 FINDINGS:

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

- i) The concentration of SO₂, 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 of 75 dB (A)
- v) The plantation over 24 Ha O.B. dump in the FY 2014-15 was completed by forest department. 2.5 km of Roadside plantation completed in monsoon 2016. Plantation in 2 ha gap plantation has been completed in monsoon 2017, 4 ha of plantation has been completed in monsoon 2018.
- vi) At present, the entire volume of OB generated is being reutilized for back – filling.
- vii) The volume of waste water generated from the mine, workshop and colony is 4500 m³/day, 10m³/day and 379m³/day from mine, workshop and colony respectively.
- viii) No hazardous waste material is being produced either from any process or any pollution control facilities.

SUMMARISED DATA

1. Production capacity : 4.50 MTY
2. Mineable Reserve : 107.15 MT
3. Total Volume of O.B. : 164.99 M m³
4. Average Stripping Ratio : 1.54 m³/Te
5. Total land requirement : 717.17 Ha
6. Forest land requirement : 257.08 Ha
7. Life of the Project : 25 Years
8. Average quality of coal : Grade G-9 and G-10
9. Total Average Rainfall / annum : 1160 mm
10. Temperature :
 - i. Maximum : 45⁰ C
 - ii. Minimum : 10⁰ C
11. Predominant Wind Direction and Av. Wind Velocity : South to North, 5.2 Km/hr
12. Magnitude of waste generated
 - i. Waste water discharge from
 - a. Colony : 4500 m³/day
 - b. Workshop : 10 m³/day
 - c. Mine : 379 m³/day
 - ii. Solid Waste.
 - a. Top Soil : nil
 - b. O.B. : 1.15 million m³

**ENVIRONMENT STATEMENT FOR THE FINANCIAL YEAR ENDING 31ST
MARCH 2019**

PART-A

I. Name and Address of the mine

NAME	: KDH OPENCAST PROJECT
POST	: DAKRA
DISTT.	: RANCHI, JHARKHAND

II. INDUSTRY CATEGORY : PRIMARY

III. Date of last Environmental Statement Report submitted : September-18

IV. PRODUCTION CAPACITY : 4.50 MTY

V. YEAR OF STARTING : 1987

PART - B

WATER AND RAW MATERIAL CONSUMPTION

1. WATER CONSUMPTION (cu.m/day)

a. Mining

i.	Haul road dust suppression	:	58 m ³ /Day
ii.	Workshop	:	80 m ³ /Day
iii.	Fire Fighting	:	11 m ³ /Day
iv.	Others (Service building etc.)	:	6 m ³ /Day

b. Domestic

i.	Colony	:	487 m ³ /Day
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Name of Product	Water Consumption per Unit of Product					
	Financial Year – 2018-19			Financial Year – 2017-18		
	Production (MT)	Industrial (m ³ /Te)	Domestic (m ³ /Te)	Production (MT)	Industrial (m ³ /Te)	Domestic (m ³ /Te)
ROM Coal	0.386	0.24	1.65	1.36	0.07	0.47

2. RAW MATERIAL CONSUMPTION:

Name of Products	Name of Raw Material	Consumption of Raw Material (per unit of output)	
		Financial Year – 2018-19	Financial Year – 2017-18
ROM Coal	POL	0.99 lt/cum	1.22 lt/cum
	Explosives	0.21 kg/Te	0.28 kg/Te

PART – C
POLLUTION DISCHRGED TO ENVIRONEMNT 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	450 m ³ /day	
b) Workshop Effluent	10 m ³ /day	
c) Domestic Discharged	379 m ³ /day	Not applicable
Air		
The SPM, SO ₂ and NO _x are main pollutants generated from coal mining project.	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 – 2018-19	Financial Year – 2017-18
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 – 2018-19	Financial Year – 2017-18

a) From mining process – i. Top Soil ii. Overburden	Nil 1.15 Mm ³	Nil 1.45 Mm ³
b) From pollution control facilities	NIL	NIL
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 waste is 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. In the FY 2018-19, 1.15 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

External dumping of overburden is not being done. The entire O.B generated is being 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) Regular sprinkling of water on haul roads and other roads by 3 Nos. of 28 KL Mobile water sprinklers for dust suppression is continuously working.
- ii) Wetting of ROM coal before crushing in Feeder Breaker.
- iii) Dust extractors have been fitted in all the drill machines as well as wet drilling arrangement is made.
- iv) Water sprinkling on coal stock.
- v) Plantation on 2 different reclaimed areas of total area of about 24 Ha by Forest Department in FY 2014-15. Road side plantation of about 3 km completed in monsoon 2016. Plantation in 2 ha gap plantation has been completed in monsoon 2017 and 4 ha of plantation has been completed in monsoon 2018.
- vi) Blasting is done during congenial atmosphere and technology of controlled blasting is practiced.
- vii) Static sprinklers have been provided at the Railway Siding.

2.0 ANTI WATER POLLUTION MEASURES

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

- i) The workshop discharge is passed through Oil & Grease trap and the clear water from Oil & Grease trap is circulated for washing of HEMM.
- ii) The mine water is pumped the main sump to sedimentation ponds (3 nos ponds in a series of dimension – 50m x 20m x 2.5m – 2500cu.m). Capacity of 3 nos of ponds settling suspended solids etc. the water from the third pond is used for haul road, railway siding, dust suppression.
- iii) 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. 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) was prepared by Regional Institute - III of CMPDI. It was approved by MOEF vide letter No. J-11015/311.2010-IA-II(M) dt. 30.01.2015. 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 .


Environment Officer
KDH OCP
NK Area


Project Officer
KDH OCP
NK Area

TEST REPORT

06/18 Test Report No. 2218	Job No. 094318021	Year	FY2018-19
Type of Sample	Ambient Air	Quarter Ending	Jun-18
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution		
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: KDH OCP

Stations: P.O.Office

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 ₁₀ + >PM ₁₀)TPM	Particulate Matter (PM ₁₀)	*Particulate Matter (PM _{2.5})	Sulphur Dioxide (SO ₂)	Nitrogen Oxides (as NO ₂)	
Apr-18 1st FN	06/04/18-07/04/18	18/04/18	18/04/18-24/04/18	351	184	56	< 25	6	North Sunny
Apr-18 2nd FN	27/04/18-28/04/18	02/05/18	02/05/18-07/05/18	258	133	48	< 25	< 6	North Sunny
May-18 3rd FN	06/05/18-07/05/18	16/05/18	16/05/18-21/05/18	281	129	50	< 25	6	East Sunny
May-18 4th FN	21/05/18-22/05/18	01/06/18	01/06/18-07/06/18	436	237	63	< 25	< 6	East Sunny
Jun-18 5th FN	07/06/18-08/06/18	18/06/18	18/06/18-25/06/18	318	178	71	< 25	< 6	East Sunny
Jun-18 6th FN	26/06/18-27/06/18	02/07/18	02/07/18-05/07/18	405	198	67	< 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.

*Out of NABL scope.

TEST REPORT

06/18 Test Report No. 2219	Job No. 094318021	Year	FY2018-19
Type of Sample	Ambient Air	Quarter Ending	Jun-18
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution		
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:** KDH OCP **Stations:** Bhoot Nagar 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 ₁₀ + >PM ₁₀)TPM	Particulate Matter (PM ₁₀)	*Particulate Matter (PM _{2.5})	Sulphur Dioxide (SO ₂)	Nitrogen Oxides (as NO ₂)	
Apr-18 1st FN	06/04/18-07/04/18	18/04/18	18/04/18-24/04/18	176	71	39	< 25	< 6	North Sunny
Apr-18 2nd FN	27/04/18-28/04/18	02/05/18	02/05/18-07/05/18	209	74	41	< 25	< 6	North Sunny
May-18 3rd FN	06/05/18-07/05/18	16/05/18	16/05/18-21/05/18	235	76	45	< 25	< 6	East Sunny
May-18 4th FN	21/05/18-22/05/18	01/06/18	01/06/18-07/06/18	390	149	67	< 25	< 6	East Sunny
Jun-18 5th FN	07/06/18-08/06/18	18/06/18	18/06/18-25/06/18	191	73	42	< 25	< 6	East Sunny
Jun-18 6th FN	27/06/18-28/06/18	02/07/18	02/07/18-05/07/18	131	54	24	< 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.

*Out of NABL scope.

TEST REPORT

06/18 Test Report No. 2220	Job No. 094318021	Year	FY2018-19
Type of Sample	Ambient Air	Quarter Ending	Jun-18
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution		
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:** KDH OCP **Stations:** Water Tanker Filling Station

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 ₁₀ + >PM ₁₀)TPM	Particulate Matter (PM ₁₀)	*Particulate Matter (PM _{2.5})	Sulphur Dioxide (SO ₂)	Nitrogen Oxides (as NO ₂)	
Apr-18 1st FN	06/04/18-07/04/18	18/04/18	18/04/18-24/04/18	261	84	49	< 25	< 6	North Sunny
Apr-18 2nd FN	27/04/18-28/04/18	02/05/18	02/05/18-07/05/18	190	62	32	< 25	< 6	North Sunny
May-18 3rd FN	06/05/18-07/05/18	16/05/18	16/05/18-21/05/18	340	150	65	< 25	< 6	East Sunny
May-18 4th FN	21/05/18-22/05/18	01/06/18	01/06/18-07/06/18	282	80	42	< 25	< 6	East Sunny
Jun-18 5th FN	07/06/18-08/06/18	18/06/18	18/06/18-25/06/18	158	64	32	< 25	< 6	East Sunny
Jun-18 6th FN	27/06/18-28/06/18	02/07/18	02/07/18-05/07/18	167	63	34	< 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.
- *Out of NABL scope.

CENTRAL MINE PLANNING AND DESIGN INSTITUTE LTD.

TEST REPORT

06/18 Test Report No. 2221	Job No. 094318021	Year	FY2018-19
Type of Sample	Ambient Air	Quarter Ending	Jun-18
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution		
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:** KDH OCP **Stations:** Karkatta 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 ($\text{PM}_{10} + >\text{PM}_{10}$)TPM	Particulate Matter (PM_{10})	*Particulate Matter ($\text{PM}_{2.5}$)	Sulphur Dioxide (SO_2)	Nitrogen Oxides (as NO_2)	
Apr-18 1st FN	07/04/18-08/04/18	18/04/18	18/04/18-24/04/18	225	79	43	< 25	< 6	South Sunny
Apr-18 2nd FN	28/04/18-29/04/18	02/05/18	02/05/18-07/05/18	244	80	45	< 25	< 6	South Cloud
May-18 3rd FN	07/05/18-08/05/18	16/05/18	16/05/18-21/05/18	288	89	48	< 25	< 6	East Sunny
May-18 4th FN	22/05/18-23/05/18	01/06/18	01/06/18-07/06/18	193	67	37	< 25	7	East Sunny
Jun-18 5th FN	07/06/18-08/06/18	18/06/18	18/06/18-25/06/18	191	76	44	< 25	< 6	East Sunny
Jun-18 6th FN	27/06/18-28/06/18	02/07/18	02/07/18-05/07/18	295	97	58	< 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.

*Out of NABL scope.

TEST REPORT

06/18 Test Report No. 2222	Job No. 094318021	Year	FY2018-19
Type of Sample	Ambient Air	Quarter Ending	Jun-18
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution		
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:** KDH OCP **Stations:** Bishrampur 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_{10} + $>\text{PM}_{10}$)TPM	Particulate Matter (PM_{10})	*Particulate Matter ($\text{PM}_{2.5}$)	Sulphur Dioxide (SO_2)	Nitrogen Oxides (as NO_2)	
Apr-18 1st FN	07/04/18-08/04/18	18/04/18	18/04/18-24/04/18	212	69	37	< 25	< 6	South Sunny
Apr-18 2nd FN	28/04/18-29/04/18	02/05/18	02/05/18-07/05/18	213	71	34	< 25	< 6	South Cloud
May-18 3rd FN	07/05/18-08/05/18	16/05/18	16/05/18-21/05/18	298	95	57	< 25	< 6	East Sunny
May-18 4th FN	22/05/18-23/05/18	01/06/18	01/06/18-07/06/18	298	98	53	< 25	< 6	East Sunny
Jun-18 5th FN	07/06/18-08/06/18	18/06/18	18/06/18-25/06/18	296	98	51	< 25	< 6	East Sunny
Jun-18 6th FN	28/06/18-29/06/18	02/07/18	02/07/18-05/07/18	238	79	43	< 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.
- *Out of NABL scope.

TEST REPORT

06/18 Test Report No. 2223	Job No. 094318021	Year	FY2018-19
Type of Sample	Ambient Air	Quarter Ending	Jun-18
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution		
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:** ~~KDH OCP~~ **Stations:** ~~KDH Siding Colony~~ **KDH Siding 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 ($\text{PM}_{10} + >\text{PM}_{10}$)TPM	Particulate Matter (PM_{10})	*Particulate Matter ($\text{PM}_{2.5}$)	Sulphur Dioxide (SO_2)	Nitrogen Oxides (as NO_2)	
Apr-18 1st FN	09/04/18-10/04/18	17/04/18	17/04/18-24/04/18	197	69	38	< 25	< 6	East Sunny
Apr-18 2nd FN	23/04/18-24/04/18	02/05/18	02/05/18-07/05/18	267	88	51	< 25	< 6	East Sunny
May-18 3rd FN	08/05/18-09/05/18	16/05/18	16/05/18-21/05/18	291	92	53	< 25	< 6	East Sunny
May-18 4th FN	24/05/18-25/05/18	01/06/18	01/06/18-06/06/18	201	76	40	< 25	< 6	East Sunny
Jun-18 5th FN	10/06/18-11/06/18	18/06/18	18/06/18-25/06/18	188	74	39	< 25	< 6	East Sunny
Jun-18 6th FN	24/06/18-25/06/18	02/07/18	02/07/18-06/07/18	213	79	44	< 25	< 6	East Rain

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.
- *Out of NABL scope.

TEST REPORT

06/18 Test Report No. 2224	Job No. 094318021	Year	FY2018-19
Type of Sample:	Noise	Quarter Ending	Jun-18
Customer	CCL		
Testing Protocol:	The noise pollution (Regulation and Control), Rules, 2000		
Remarks:			

TEST RESULT

The sample has been tested with the following results:-

Area :

North Karanpura

Project:

KDH OCP

Station Name	Noise Level					
	Apr-18 1st FN	Apr-18 2nd FN	May-18 3rd FN	May-18 4th FN	Jun-18 5th FN	Jun-18 6th FN
Date of recording	06/04/18	27/04/18	06/05/18	21/05/18	07/06/18	26/06/18
P.O. Office	52.1	51.9	52.7	51.5	52.5	47.3
Date of recording	06/04/18	27/04/18	06/05/18	21/05/18	07/06/18	27/06/18
Booth nagar	51.6	46.4	45.9	49.3	49.5	46.1
Date of recording	06/04/18	27/04/18	06/05/18	21/05/18	07/06/18	27/06/18
Water Tanker Filling Station	53.4	49.8	46.3	49.2	50.2	47.4
Date of recording	07/04/18	28/04/18	07/05/18	22/05/18	07/06/18	27/06/18
Karkatta Village	50.3	46.3	45.5	49.6	49.4	46.2
Date of recording	07/04/18	28/04/18	07/05/18	22/05/18	07/06/18	28/06/18
Bisrampur Village	50.1	45.9	46.1	49.3	49.6	45.7
Date of recording	07/04/18	28/04/18	07/05/18	22/05/18	07/06/18	28/06/18
KDH Siding Office	53.4	52.1	50.3	52.4	52.6	46.5

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

TEST REPORT

06/18 Test Report No. 2225	Job No. 094318021	Year	FY2018-19
Type of Sample:	Effluent Water	Quarter Ending	Jun-18
Customer	CCL		
Mode of Receipt of Sample:	Jointly picked up sample by laboratory at quarterly interval		
Testing Protocol:	MOEF -SCH-VI STANDARDS, Class 'a'		
Remarks & Observation:	Samples received in 2 ltr plastic Jerri cane, Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results:-

Area: North Karanpura **Project:** KDH OCP **Stations:** Mine Quarry Water

Analysis Results of FN Effluent Water							
Parameters →				COD	O & G	pH value	TSS
Detection Limit				4	2	0.2	10
MOEF -SCH-VI, STANDARDS, Class 'A'				250	10	5.5 to 9.0	100
Month	Date of Sampling	Date of Receipt of Sample	Date of Analysis	Value in mg/l, except pH			
Apr-18 1st FN	07/04/18	18/04/18	18/04/18-02/05/18	32	<2.00	7.94	20
Apr-18 2nd FN	28/04/18	02/05/18	02/05/18-26/05/18	40	<2.00	7.75	22
May-18 3rd FN	08/05/18	16/05/18	16/05/18-09/06/18	64	<2.00	7.45	78
May-18 4th FN	22/05/18	01/06/18	01/06/18-22/06/18	52	<2.00	7.96	20
Jun-18 5th FN	09/06/18	18/06/18	18/06/18-30/06/18	40	<2.00	8.07	30
Jun-18 6th FN	30/06/18	02/07/18	02/07/18-10/07/18	28	<2.00	8.04	28
BIS Standard & Method				APHA, 22 nd 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

TEST REPORT

06/18 Test Report No. 2226	Job No. 094318021	Year	FY2018-19
Type of Sample:	Effluent Water	Quarter Ending	Jun-18
Customer	CCL		
Mode of Receipt of Sample:	Jointly picked up sample by laboratory at quarterly interval		
Testing Protocol:	MOEF -SCH-VI STANDARDS, Class 'a'		
Remarks & Observation:	Samples received in 2 ltr plastic Jerri cane, Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results:-

Area : North Karanpur **Project:** KDH OCP **Stations:** Workshop Effluent

Analysis Results of FN Effluent Water							
Parameters →				COD	O & G	pH value	TSS
Detection Limit				4	2	0.2	10
MOEF -SCH-VI, STANDARDS, Class 'A'				250	10	5.5 to 9.0	100
Month	Date of Sampling	Date of Receipt of Sample	Date of Analysis	Value in mg/l, except pH			
Apr-18 1st FN	07/04/18	18/04/18	18/04/18-02/05/18	72	<2.00	8.24	118
Apr-18 2nd FN	30/04/18	02/05/18	02/05/18-26/05/18	44	<2.00	7.51	30
May-18 3rd FN	08/05/18	16/05/18	16/05/18-09/06/18	112	<2.00	6.96	132
May-18 4th FN	22/05/18	01/06/18	01/06/18-22/06/18	180	<2.00	8.01	146
Jun-18 5th FN	09/06/18	18/06/18	18/06/18-30/06/18	64	<2.00	8.08	68
Jun-18 6th FN	30/06/18	02/07/18	02/07/18-10/07/18	432	4	7.67	11212
BIS Standard & Method				APHA, 22 nd 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

TEST REPORT

06/18 Test Report No. 2227	Job No. 094318021	Year	FY2018-19
Type of Sample:	Effluent Water	Quarter Ending	Jun-18
Customer	CCL		
Mode of Receipt of Sample:	Jointly picked up sample by laboratory at quarterly interval		
Testing Protocol:	MOEF -SCH-VI STANDARDS, Class 'a'		
Remarks & Observation:	Samples received in 2 ltr plastic Jerri cane, Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results:-

Area : North Karanpur **Project:** KDH OCP **Stations:** OB Dump Effluent

Analysis Results of FN Effluent Water							
Parameters →				COD	O & G	pH value	TSS
Detection Limit				4	2	0.2	10
MOEF -SCH-VI, STANDARDS, Class 'A'				250	10	5.5 to 9.0	100
Month	Date of Sampling	Date of Receipt of Sample	Date of Analysis	Value in mg/l, except pH			
Apr-18 1st FN	07/04/18	18/04/18	18/04/18-02/05/18	44	<2.00	7.72	24
Apr-18 2nd FN	30/04/18	02/05/18	02/05/18-26/05/18	24	<2.00	7.71	26
May-18 3rd FN	08/05/18	16/05/18	16/05/18-09/06/18	24	<2.00	7.06	28
May-18 4th FN	22/05/18	01/06/18	01/06/18-22/06/18	28	<2.00	7.86	24
Jun-18 5th FN	09/06/18	18/06/18	18/06/18-30/06/18	44	<2.00	8.06	22
Jun-18 6th FN	30/06/18	02/07/18	02/07/18-10/07/18	40	<2.00	8.08	24
BIS Standard & Method				APHA, 22 nd 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

TEST REPORT

06/18 Test Report No. 2228	Job No. 094318021	Year	FY2018-19
Type of Sample:	Surface Water	Quarter Ending	Jun-18
Customer	CCL	Date of Receipt:	17/04/18
Mode of Receipt of Sample:	Jointly picked up sample by laboratory at quarterly interval	Date of Analysis:	17.04.18-13.07.18
Testing Protocol:	-	Date of Reporting:	13/07/18
Remarks & Observation:	Samples received in 2 ltr plastic Jerri cane, Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results:-

Area :	North Karanpura	Project:	KDH OCP
Stations:	1. U/S of Sonadoba Nala 2. D/S of Sonadoba Nala 3. U/S of Damodar River 4. D/S of Damodar River	Date of Sampling:	07/04/18 07/04/18 07/04/18 07/04/18

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	<0.002	0.002	IS 3025/37:1988 R : 2003, AAS-VGA
2	BOD (3 days 27°C), mg/l, Max	2	2	2	2	2.00	IS 3025 /44: 1993, R : 2003 3 day incubation at 27°C
3	Cadmium(as Cd), mg/l, Max	<0.0005	<0.0005	<0.0005	<0.0005	0.0005	APHA, 22 nd Edition AAS-GTA
4	Chlorides (as Cl), mg/l, Max	16	18	10	28	2.00	IS-3025/32:1988, R-2007, Argentometric
5	Copper (as Cu), mg/l, Max	<0.03	<0.03	<0.03	<0.03	0.03	IS 3025 /42 : 1992 R : 2009, AAS-Flame
6	Dissolved Oxygen, min.	6.3	6.3	6.3	6.3	0.10	IS 3025/38:1989, R : 2003, Winkler Azide
7	Fluoride (as F) mg/l, Max	1.14	1.22	0.89	0.72	0.02	APHA, 22 nd Edition SPADNS
8	Hexavalent Chromium, mg/l, Max	<0.01	<0.01	<0.01	<0.01	0.01	APHA, 22 nd Edition, 1,5 Diphenylcarbohydrazide
9	Iron (as Fe), mg/l, Max	<0.02	0.02	<0.02	<0.02	0.06	IS 3025 /53 : 2003, R : 2009 , AAS-Flame
10	Lead (as Pb), mg/l, Max	<0.005	<0.005	<0.005	<0.005	0.005	APHA, 22 nd Edition AAS-GTA
11	Nitrate (as NO ₃), mg/l, Max	16.21	15.86	7.22	1.42	0.50	APHA, 22 nd Edition, UV-Spectrophotometric
12	pH value	7.99	7.88	7.99	8.02	0.2	IS-3025/11:1983, R-1996, Electrometric
13	Phenolic compounds (as C ₆ H ₅ OH), mg/l, Max	<0.001	<0.001	<0.001	<0.001	0.001	APHA, 22 nd Edition 4-Amino Antipyrine
14	Selenium (as Se), mg/l, Max	<0.002	<0.002	<0.002	<0.002	0.002	APHA, 22 nd Edition AAS-GTA
15	Sulphate (as SO ₄) mg/l, Max	229	199	185	154	2.00	APHA, 22 nd Edition Turbidity
16	Total Dissolved Solids, mg/l, Max	872	868	604	482	25.00	IS 3025 /16:1984 R : 2006, Gravimetric
17	Total Suspended Solids, mg/l, Max	26	28	20	22	10.00	IS 3025 /17:1984, R :1996, Gravimetric
18	Zinc (as Zn), mg/l, Max	0.01	0.04	<0.01	<0.01	0.01	IS 3025 /49 : 1994, R : 2009, AAS-Flame

CENTRAL MINE PLANNING AND DESIGN INSTITUTE LTD.

TEST REPORT

06/18 Test Report No. 2229	Job No. 094318021	Year	FY2018-19
Type of Sample:	Drinking Water	Quarter Ending	Jun-18
Customer	CCL -	Date of Receipt:	17/04/18
Mode of Receipt of Sample:	Jointly picked up sample by laboratory at quarterly interval	Date of Analysis:	17.04.18-13.07.18
Testing Protocol:	IS:10500 Drinking Water Standards	Date of Reporting:	13/07/18
Remarks & Observation:	Samples received in 2 ltr plastic Jerri cane, Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results:-

Area :	North Karanpura	Project:	KDH OCP
Stations:	1. Well Water at Bishrampur Village 2. Well Water at Bhootnagar Village 1. Well Water at Karkatta Village 2. Well Water at Bukbuka Village	Date of Sampling:	07/04/18 07/04/18 07/04/18 07/04/18

Sl. No	Parameter	Sampling Stations				Detection Limit	IS:10500 Standards	Standard / Test Method
		1	2	3	4			
1	Boron (as B), mg/l, Max	<0.20	<0.20	<0.20	<0.20	0.20	0.5	APHA, 22 nd Edition, Carmine
2	Cadmium (as Cd), mg/l, Max	<0.0005	<0.0005	<0.0005	<0.0005	0.0005	0.003	APHA, 22 nd Edition, AAS-GTA
3	Calcium (as Ca), mg/l, Max	60.8	72	27.2	25.6	1.60	75	IS-3025/40:1991, EDTA
4	Chloride (as Cl), mg/l, Max	48	70	26	26	2.00	250	IS-3025/32:1988, R-2007, Argentometric
5	Copper (as Cu), mg/l, Max	<0.03	<0.03	<0.03	<0.03	0.03	0.05	IS 3025/42 : 1992 R : 2009, AAS-Flame
6	Fluoride (as F) mg/l, Max	0.66	0.65	0.53	0.45	0.02	1.0	APHA, 22 nd Edition, SPADNS
7	Free Residual Chlorine, mg/l, Min	0.03	<0.02	0.03	0.02	0.02	0.2	APHA, 22 nd Edition, DPD
8	Iron (as Fe), mg/l, Max	<0.02	<0.02	<0.02	<0.02	0.06	0.3	IS 3025 /53 : 2003, R : 2009 , AAS-Flame
9	Lead (as Pb), mg/l, Max	0.005	<0.005	<0.005	<0.005	0.005	0.01	APHA, 22 nd Edition, AAS-GTA
10	Manganese (as Mn), mg/l, Max	<0.06	<0.06	<0.06	<0.06	0.02	0.1	IS-3025/59:2006.AAS-Flame
11	Nickel (as Ni), mg/l, Max	<0.01	<0.01	<0.01	<0.01	0.01	0.02	IS-3025/54:2003, AAS-Flame
12	Nitrate (as NO ₃), mg/l, Max	29.80	30.10	26.16	26.42	0.5	45	APHA, 22 nd Edition, UV-Spectrophotometric
13	Odour	Agreeable	Agreeable	Agreeable	Agreeable	Qualitative	Agreeable	IS 3025 /05:1983, R-2012, Qualitative
14	pH value	7.15	8.05	6.51	6.88	0.2	6.5 to 8.5	IS-3025/11:1983, R-1996, Electrometric
15	Phenolic compounds (as C ₆ H ₅ OH), mg/l, Max	<0.001	<0.001	<0.001	<0.001	0.001	0.001	APHA, 22 nd Edition, 4-Amino Antipyrine
16	Selenium (as Se), mg/l, Max	<0.002	<0.002	<0.002	<0.002	0.002	0.01	APHA, 22 nd Edition, AAS-GTA
17	Sulphate (as SO ₄) mg/l, Max	145	137	17	17	2.00	200	APHA, 22 nd Edition, Turbidity
18	Total Alkalinity (CaCO ₃), mg/l, Max	108	92	60	48	4.00	200	IS-3025/23:1986, Titration
19	Total Arsenic (as As), mg/l, Max	<0.002	<0.002	<0.002	<0.002	0.002	0.01	IS 3025/ 37:1988 R : 2003, AAS-VGA
20	Total Chromium (as Cr), mg/l, Max	<0.04	0.06	<0.04	0.07	0.04	0.05	IS-3025/52:2003, AAS-Flame
21	Total Dissolved Solids, mg/l, Max	498	552	180	180	25.00	500	IS 3025 /16:1984 R : 2006, Gravimetric
22	Total Hardness (CaCO ₃), mg/l, Max	272	308	104	104	4.00	200	IS-3025/21:1983, R-2002, EDTA
23	Turbidity, NTU, Max	1.1	1	0.8	0.7	1.0	1	IS-3025/10:1984 R-1996, Nephelometric
24	Zinc (as Zn), mg/l, Max	<0.01	0.01	0.01	<0.01	0.01	5.0	IS 3025/ 49 : 1994, R : 2009, AAS-Flame

TEST REPORT

09/18 Test Report No. 2218	Job No. 094318021	Year	FY2018-19
Type of Sample	Ambient Air	Quarter Ending	Sep-18
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution		
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: KDH OCP

Stations: P.O.Office

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 ($\text{PM}_{10} + >\text{PM}_{10}$)TPM	Particulate Matter (PM_{10})	*Particulate Matter ($\text{PM}_{2.5}$)	Sulphur Dioxide (SO_2)	Nitrogen Oxides (as NO_2)	
Jul-18 1st FN	05/07/18-06/07/18	16/07/18	16/07/18-20/07/17	284	147	61	< 25	< 6	East Cloud
Jul-18 2nd FN	27/07/18-28/07/18	01/08/18	01/08/18-06/08/18	282	159	75	< 25	< 6	East Rain
Aug-18 3rd FN	10/08/18-11/08/18	16/08/18	16/08/18-21/08/18	218	108	41	< 25	< 6	East Rain
Aug-18 4th FN	26/08/18-27/08/18	03/09/18	03/09/18-08/09/18	194	107	51	< 25	< 6	East Sunny
Sep-18 5th FN	06/09/18-07/09/18	17/09/18	17/09/18-22/09/18	214	113	49	< 25	< 6	West Cloud
Sep-18 6th FN	21/09/18-22/09/18	01/10/18	01/10/18-06/10/18	203	132	57	< 25	< 6	East Cloud

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.

*Out of NABL scope.

TEST REPORT

09/18 Test Report No. 2219	Job No. 094318021	Year	FY2018-19
Type of Sample	Ambient Air	Quarter Ending	Sep-18
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution		
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:** KDH OCP **Stations:** Bhoot Nagar 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 ₁₀ + >PM ₁₀)TPM	Particulate Matter (PM ₁₀)	*Particulate Matter (PM _{2.5})	Sulphur Dioxide (SO ₂)	Nitrogen Oxides (as NO ₂)	
Jul-18 1st FN	05/07/18-06/07/18	16/07/18	16/07/18-20/07/17	183	70	39	< 25	< 6	East Cloud
Jul-18 2nd FN	28/07/18-29/07/18	01/08/18	01/08/18-06/08/18	146	62	30	< 25	< 6	East Rain
Aug-18 3rd FN	11/08/18-12/08/18	16/08/18	16/08/18-21/08/18	117	48	27	< 25	< 6	North Cloud
Aug-18 4th FN	26/08/18-27/08/18	03/09/18	03/09/18-08/09/18	205	76	38	< 25	< 6	East Sunny
Sep-18 5th FN	06/09/18-07/09/18	17/09/18	17/09/18-22/09/18	129	53	29	< 25	< 6	East Rain
Sep-18 6th FN	21/09/18-22/09/18	01/10/18	01/10/18-06/10/18	110	47	25	< 25	< 6	East Cloud

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.

*Out of NABL scope.

TEST REPORT

09/18 Test Report No. 2220	Job No. 094318021	Year	FY2018-19
Type of Sample	Ambient Air	Quarter Ending	Sep-18
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution		
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:** KDH OCP **Stations:** Water Tanker Filling Station

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 ₁₀ + >PM ₁₀)TPM	Particulate Matter (PM ₁₀)	*Particulate Matter (PM _{2.5})	Sulphur Dioxide (SO ₂)	Nitrogen Oxides (as NO ₂)	
Jul-18 1st FN	05/07/18-06/07/18	16/07/18	16/07/18-20/07/17	160	60	30	< 25	< 6	East Cloud
Jul-18 2nd FN	28/07/18-29/07/18	01/08/18	01/08/18-06/08/18	138	57	28	< 25	< 6	East Rain
Aug-18 3rd FN	11/08/18-12/08/18	16/08/18	16/08/18-21/08/18	153	60	35	< 25	< 6	North Cloud
Aug-18 4th FN	27/08/18-28/08/18	03/09/18	03/09/18-08/09/18	236	87	45	< 25	< 6	West Cloud
Sep-18 5th FN	06/09/18-07/09/18	17/09/18	17/09/18-22/09/18	145	60	33	< 25	< 6	East Rain
Sep-18 6th FN	21/09/18-22/09/18	01/10/18	01/10/18-06/10/18	166	76	41	< 25	< 6	East Cloud

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.

*Out of NABL scope.

TEST REPORT

09/18 Test Report No. 2221	Job No. 094318021	Year	FY2018-19
Type of Sample	Ambient Air	Quarter Ending	Sep-18
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution		
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:** KDH OCP **Stations:** Karkatta 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 ($\text{PM}_{10} + >\text{PM}_{10}$)TPM	Particulate Matter (PM_{10})	*Particulate Matter ($\text{PM}_{2.5}$)	Sulphur Dioxide (SO_2)	Nitrogen Oxides (as NO_2)	
Jul-18 1st FN	06/07/18-07/07/18	16/07/18	16/07/18-20/07/17	215	79	44	< 25	< 6	West Cloud
Jul-18 2nd FN	28/07/18-29/07/18	01/08/18	01/08/18-06/08/18	172	70	34	< 25	< 6	East Rain
Aug-18 3rd FN	11/08/18-12/08/18	16/08/18	16/08/18-21/08/18	181	78	43	< 25	< 6	North Rain
Aug-18 4th FN	27/08/18-28/08/18	03/09/18	03/09/18-08/09/18	270	93	51	< 25	< 6	West Cloud
Sep-18 5th FN	07/09/18-08/09/18	17/09/18	17/09/18-22/09/18	182	70	40	< 25	< 6	East Cloud
Sep-18 6th FN	22/09/18-23/09/18	01/10/18	01/10/18-06/10/18	118	58	30	< 25	< 6	East Cloud

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.

*Out of NABL scope.

TEST REPORT

09/18 Test Report No. 2222	Job No. 094318021	Year	FY2018-19
Type of Sample	Ambient Air	Quarter Ending	Sep-18
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution		
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:** KDH OCP **Stations:** BishrampurVillage

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_{10}^+ > PM_{10})TPM	Particulate Matter (PM_{10})	*Particulate Matter ($\text{PM}_{2.5}$)	Sulphur Dioxide (SO_2)	Nitrogen Oxides (as NO_2)	
Jul-18 1st FN	06/07/18-07/07/18	16/07/18	16/07/18-20/07/17	197	70	36	< 25	< 6	West Cloud
Jul-18 2nd FN	29/07/18-30/07/18	01/08/18	01/08/18-06/08/18	136	55	29	< 25	< 6	East Rain
Aug-18 3rd FN	11/08/18-12/08/18	16/08/18	16/08/18-21/08/18	209	86	49	< 25	< 6	North Sunny
Aug-18 4th FN	27/08/18-28/08/18	03/09/18	03/09/18-08/09/18	151	58	31	< 25	< 6	West Cloud
Sep-18 5th FN	07/09/18-08/09/18	17/09/18	17/09/18-22/09/18	162	64	36	< 25	< 6	West Cloud
Sep-18 6th FN	22/09/18-23/09/18	01/10/18	01/10/18-06/10/18	163	68	34	< 25	< 6	East Cloud

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.

*Out of NABL scope.

TEST REPORT

09/18 Test Report No. 2223	Job No. 094318021	Year	FY2018-19
Type of Sample	Ambient Air	Quarter Ending	Sep-18
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution		
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:** KDH OCP **Stations:** KDH Siding 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_{10}^+ > PM_{10})TPM	Particulate Matter (PM_{10})	*Particulate Matter ($\text{PM}_{2.5}$)	Sulphur Dioxide (SO_2)	Nitrogen Oxides (as NO_2)	
Jul-18 1st FN	09/07/18-10/07/18	16/07/18	16/07/18-20/07/18	117	53	26	< 25	< 6	East Sunny
Jul-18 2nd FN	23/07/18-24/07/18	01/08/18	01/08/18-07/08/18	188	75	42	< 25	< 6	East Rain
Aug-18 3rd FN	08/08/18-09/08/18	16/08/18	16/08/18-23/08/18	139	55	31	< 25	< 6	East Rain
Aug-18 4th FN	23/08/18-24/08/18	03/09/18	03/09/18-08/09/18	174	73	38	< 25	< 6	East Cloud
Sep-18 5th FN	09/09/18-10/09/18	17/09/18	17/09/18-24/09/18	115	56	27	< 25	< 6	East Rain
Sep-18 6th FN	24/09/18-25/09/18	01/10/18	01/10/18-08/10/18	142	66	28	< 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.

*Out of NABL scope.

TEST REPORT

09/18 Test Report No. 2224	Job No. 094318021	Year	FY2018-19
Type of Sample:	Noise	Quarter Ending	Sep-18
Customer	CCL		
Testing Protocol:	'The noise pollution (Regulation and Control), Rules,2000		
Remarks:			

TEST RESULT

The sample has been tested with the following results:-

Area : North Karanpura Project: KDH OCP

Station Name	Noise Level					
	Jul-18 1st FN	Jul-18 2nd FN	Aug-18 3rd FN	Aug-18 4th FN	Sep-18 5th FN	Sep-18 6th FN
Date of recording	05/07/18	27/07/18	10/08/18	26/08/18	06/09/18	21/09/18
P.O.Office	52.4	48.5	51.9	53.4	53.5	49.1
Date of recording	05/07/18	28/07/18	11/08/18	26/08/18	06/09/18	21/09/18
Booth nagar	50.3	50.6	46.9	51.3	51.2	47.2
Date of recording	05/07/18	28/07/18	11/08/18	27/08/18	06/09/18	21/09/18
Water Tanker Filling Station	52.5	51.1	47.5	52.5	52.4	50.4
Date of recording	06/07/18	28/07/18	11/08/18	27/08/18	07/09/18	22/09/18
Karkatta Village	50.2	51.2	46.2	50.1	50.5	48.2
Date of recording	06/07/18	29/07/18	11/08/18	27/08/18	07/09/18	22/09/18
Bisrampur Village	50.4	50.9	46.1	50.3	51	49.5
Date of recording	06/07/18	29/07/18	11/08/18	28/08/18	07/09/18	22/09/18
KDH Siding Office	53.3	51.6	51.8	53.4	53.2	52.1

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

CENTRAL MINE PLANNING AND DESIGN INSTITUTE LTD.

TEST REPORT

09/18 Test Report No. 2225	Job No. 094318021	Year	FY2018-19
Type of Sample:	Effluent Water	Quarter Ending	Sep-18
Customer	CCL		
Mode of Receipt of Sample:	Jointly picked up sample by laboratory at quarterly interval		
Testing Protocol:	MOEF -SCH-VI STANDARDS, Class 'a'		
Remarks & Observation:	Samples received in 2 ltr plastic Jerri cane, Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results:-

Area: North Karanpura **Project:** KDH OCP **Stations:** Mine Quarry Water

Analysis Results of FN Effluent Water							
Parameters →				COD	O & G	pH value	TSS
Detection Limit				4	2	0.2	10
MOEF -SCH-VI, STANDARDS, Class 'A'				250	10	5.5 to 9.0	100
Month	Date of Sampling	Date of Receipt of Sample	Date of Analysis	Value in mg/l, except pH			
Jul-18 1st FN	08/07/18	16/07/18	16/07/18-03/08/18	32	<2.00	7.92	28
Jul-18 2nd FN	31/07/18	01/08/18	01/08/18-20/08/18	28	<2.00	8.01	28
Aug-18 3rd FN	14/08/18	16/08/18	16/08/18-03/08/18	32	<2.00	7.79	26
Aug-18 4th FN	29/08/18	03/09/18	03/09/18-18/03/18	20	<2.00	7.94	26
Sep-18 5th FN	09/09/18	17/09/18	17/09/18-08/10/18	40	<2.00	7.71	46
Sep-18 6th FN	24/09/18	01/10/18	01/10/18-15/10/18	24	<2.00	7.57	20
BIS Standard & Method				APHA, 22 nd 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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TEST REPORT

09/18 Test Report No. 2226	Job No. 094318021	Year	FY2018-19
Type of Sample:	Effluent Water	Quarter Ending	Sep-18
Customer	CCL		
Mode of Receipt of Sample:	Jointly picked up sample by laboratory at quarterly interval		
Testing Protocol:	MOEF -SCH-VI STANDARDS, Class 'a'		
Remarks & Observation:	Samples received in 2 ltr plastic Jerri cane, Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results:-

Area : North Karanpur **Project:** KDH OCP **Stations:** Workshop Effluent

Analysis Results of FN Effluent Water							
Parameters →				COD	O & G	pH value	TSS
Detection Limit				4	2	0.2	10
MOEF -SCH-VI, STANDARDS, Class 'A'				250	10	5.5 to 9.0	100
Month	Date of Sampling	Date of Receipt of Sample	Date of Analysis	Value in mg/l, except pH			
Jul-18 1st FN	08/07/18	16/07/18	16/07/18-03/08/18	3240	10	7.28	33086
Jul-18 2nd FN	31/07/18	01/08/18	01/08/18-20/08/18	1960	12	7.57	2672
Aug-18 3rd FN	14/08/18	16/08/18	16/08/18-03/08/18	840	10	7.65	1142
Aug-18 4th FN	29/08/18	03/09/18	03/09/18-18/03/18	24	3.2	7.97	28
Sep-18 5th FN	09/09/18	17/09/18	17/09/18-08/10/18	384	8.8	7.33	872
Sep-18 6th FN	24/09/18	01/10/18	01/10/18-15/10/18	32	2.8	6.55	62
BIS Standard & Method				APHA, 22 nd 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

TEST REPORT

09/18 Test Report No. 2227	Job No. 094318021	Year	FY2018-19
Type of Sample:	Effluent Water	Quarter Ending	Sep-18
Customer	CCL		
Mode of Receipt of Sample:	Jointly picked up sample by laboratory at quarterly interval		
Testing Protocol:	MOEF -SCH-VI STANDARDS, Class 'a'		
Remarks & Observation:	Samples received in 2 ltr plastic Jerri cane, Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results:-

Area : North Karanpur **Project:** KDH OCP **Stations:** OB Dump Effluent

Analysis Results of FN Effluent Water							
Parameters →				COD	O & G	pH value	TSS
Detection Limit				4	2	0.2	10
MOEF -SCH-VI, STANDARDS, Class 'A'				250	10	5.5 to 9.0	100
Month	Date of Sampling	Date of Receipt of Sample	Date of Analysis	Value in mg/l, except pH			
Jul-18 1st FN	08/07/18	16/07/18	16/07/18-03/08/18	220	<2.00	7.84	414
Jul-18 2nd FN	31/07/18	01/08/18	01/08/18-20/08/18	32	<2.00	8.07	24
Aug-18 3rd FN	14/08/18	16/08/18	16/08/18-03/08/18	32	<2.00	7.7	28
Aug-18 4th FN	29/08/18	03/09/18	03/09/18-18/03/18	16	<2.00	7.89	24
Sep-18 5th FN	09/09/18	17/09/18	17/09/18-08/10/18	20	<2.00	8.05	22
Sep-18 6th FN	24/09/18	01/10/18	01/10/18-15/10/18	28	<2.00	7.36	22
BIS Standard & Method				APHA, 22 nd 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

TEST REPORT

09/18 Test Report No. 2228	Job No. 094318021	Year	FY2018-19
Type of Sample:	Surface Water	Quarter Ending	Sep-18
Customer	CCL	Date of Receipt:	16/07/18
Mode of Receipt of Sample:	Jointly picked up sample by laboratory at quarterly interval	Date of Analysis:	16.07.18-14.09.18
Testing Protocol:	-		
Remarks & Observation:	Samples received in 2 ltr plastic Jerri cane, Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results:-

Area : North Karanpura **Project:** KDH OCP
Stations: 1. U/S of Sonadoba Nala **Date of Sampling:** 08/07/18
 2. D/S of Sonadoba Nala 08/07/18
 3. U/S of Damodar River 08/07/18
 4. D/S of Damodar River 08/07/18

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	<0.002	0.002	IS 3025/37:1988 R : 2003, AAS-VGA
2	BOD (3 days 27°C), mg/l, Max	2	2	2	2	2.00	IS 3025 /44: 1993, R : 2003 3 day incubation at 27°C
3	Cadmium(as Cd), mg/l, Max	<0.0005	<0.0005	<0.0005	<0.0005	0.0005	APHA, 22 nd Edition AAS-GTA
4	Chlorides (as Cl), mg/l, Max	16	16	14	14	2.00	IS-3025/32:1988, R-2007, Argentometric
5	Copper (as Cu), mg/l, Max	<0.03	<0.03	<0.03	<0.03	0.03	IS 3025 /42 : 1992 R : 2009, AAS-Flame
6	Dissolved Oxygen, min.	6.3	6.3	6.3	6.3	0.10	IS 3025/38:1989, R : 2003, Winkler Azide
7	Fluoride (as F) mg/l, Max	0.89	0.9	0.67	0.28	0.02	APHA, 22 nd Edition SPADNS
8	Hexavalent Chromium, mg/l, Max	<0.01	<0.01	<0.01	<0.01	0.01	APHA, 22 nd Edition, 1,5 - Diphenylcarbohydrazide
9	Iron (as Fe), mg/l, Max	<0.06	<0.06	<0.06	2.43	0.06	IS 3025 /53 : 2003, R : 2009 , AAS-Flame
10	Lead (as Pb), mg/l, Max	<0.005	<0.005	<0.005	<0.005	0.005	APHA, 22 nd Edition AAS-GTA
11	Nitrate (as NO ₃), mg/l, Max	9.17	8.95	1.46	3.63	0.50	APHA, 22 nd Edition, UV-Spectrophotometric
12	pH value	7.86	8.16	8.14	8.34	0.2	IS-3025/11:1983, R-1996, Electrometric
13	Phenolic compounds (as C ₆ H ₅ OH), mg/l, Max	<0.001	<0.001	<0.001	<0.001	0.001	APHA, 22 nd Edition 4-Amino Antipyrine
14	Selenium (as Se), mg/l, Max	<0.002	<0.002	<0.002	<0.002	0.002	APHA, 22 nd Edition AAS-GTA
15	Sulphate (as SO ₄) mg/l, Max	322	314	97	13	2.00	APHA, 22 nd Edition Turbidity
16	Total Dissolved Solids, mg/l, Max	598	592	302	122	25.00	IS 3025 /16:1984 R : 2006, Gravimetric
17	Total Suspended Solids, mg/l, Max	20	26	22	22	10.00	IS 3025 /17:1984, R :1996, Gravimetric
18	Zinc (as Zn), mg/l, Max	0.02	0.01	0.01	0.03	0.01	IS 3025 /49 : 1994, R : 2009, AAS-Flame

TEST REPORT

09/18 Test Report No. 2229	Job No. 094318021	Year	FY2018-19
Type of Sample:	Drinking Water	Quarter Ending	Sep-18
Customer	CCL	Date of Receipt:	16/07/18
Mode of Receipt of Sample:	Jointly picked up sample by laboratory at quarterly interval	Date of Analysis:	16.07.18-14.09.18
Testing Protocol:	IS:10500 Drinking Water Standards		
Remarks & Observation:	Samples received in 2 ltr plastic Jerri cane, Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results:-

Area :	North Karanpura	Project:	KDH OCP
Stations:		Date of Sampling:	
	1. Well Water at Bishrampur Village		08/07/18
	2. Well Water at Bhootnagar Village		08/07/18
	3. Well Water at Karkatta Village		08/07/18
	4. Well Water at Bukbuka Village		08/07/18

Sl. No	Parameter	Sampling Stations				Detection Limit	IS:10500 Standards	Standard / Test Method
		1	2	3	4			
1	Boron (as B), mg/l, Max	<0.20	<0.20	<0.20	<0.20	0.20	0.5	APHA, 22 nd Edition, Carmine
2	Cadmium (as Cd), mg/l, Max	<0.0005	<0.0005	<0.0005	<0.0005	0.0005	0.003	APHA, 22 nd Edition, AAS-GTA
3	Calcium (as Ca), mg/l, Max	76.8	91.2	88	89.6	1.60	75	IS-3025/40:1991, EDTA
4	Chloride (as Cl), mg/l, Max	66	66	72	68	2.00	250	IS-3025/32:1988, R-2007, Argentometric
5	Copper (as Cu), mg/l, Max	<0.03	<0.03	<0.03	<0.03	0.03	0.05	IS 3025/42 : 1992 R : 2009, AAS-Flame
6	Fluoride (as F) mg/l, Max	0.48	0.43	0.53	0.57	0.02	1.0	APHA, 22 nd Edition, SPADNS
7	Free Residual Chlorine, mg/l, Min	0.02	0.02	0.03	0.03	0.02	0.2	APHA, 22 nd Edition, DPD
8	Iron (as Fe), mg/l, Max	<0.06	<0.06	<0.06	<0.06	0.06	0.3	IS 3025 /53 : 2003, R : 2009, AAS-Flame
9	Lead (as Pb), mg/l, Max	<0.005	<0.005	<0.005	<0.005	0.005	0.01	APHA, 22 nd Edition, AAS-GTA
10	Manganese (as Mn), mg/l, Max	<0.02	<0.02	<0.02	<0.02	0.02	0.1	IS-3025/59:2006,AAS-Flame
11	Nickel (as Ni), mg/l, Max	<0.01	<0.01	<0.01	<0.01	0.01	0.02	IS-3025/54:2003, AAS-Flame
12	Nitrate (as NO ₃), mg/l, Max	15.68	15.46	15.06	15.37	0.5	45	APHA, 22 nd Edition, UV-Spectrophotometric
13	Odour	Agreeable	Agreeable	Agreeable	Agreeable	Qualitative	Agreeable	IS 3025 /05:1983, R-2012, Qualitative
14	pH value	6.85	7.47	6.75	7.99	0.2	6.5 to 8.5	IS-3025/11:1983, R-1996, Electrometric
15	Phenolic compounds (as C ₆ H ₅ OH), mg/l, Max	<0.001	<0.001	<0.001	<0.001	0.001	0.001	APHA, 22 nd Edition, 4-Amino Antipyrine
16	Selenium (as Se), mg/l, Max	<0.002	<0.002	<0.002	<0.002	0.002	0.01	APHA, 22 nd Edition, AAS-GTA
17	Sulphate (as SO ₄) mg/l, Max	193	124	176	214	2.00	200	APHA, 22 nd Edition, Turbidity
18	Total Alkalinity (CaCO ₃), mg/l, Max	148	152	164	144	4.00	200	IS-3025/23:1986, Titration
19	Total Arsenic (as As), mg/l, Max	<0.002	<0.002	0.003	<0.002	0.002	0.01	IS 3025/ 37:1988 R : 2003, AAS-VGA
20	Total Chromium (as Cr), mg/l, Max	0.16	0.16	0.13	0.15	0.04	0.05	IS-3025/52:2003, AAS-Flame
21	Total Dissolved Solids, mg/l, Max	614	564	612	648	25.00	500	IS 3025 /16:1984 R : 2006, Gravimetric
22	Total Hardness (CaCO ₃), mg/l, Max	328	348	340	344	4.00	200	IS-3025/21:1983, R-2002, EDTA
23	Turbidity, NTU, Max	1.3	1.2	1.1	1.4	1.0	1	IS-3025/10:1984 R-1996, Nephelometric
24	Zinc (as Zn), mg/l, Max	0.01	0.01	0.03	0.01	0.01	5.0	IS 3025/ 49 : 1994, R : 2009, AAS-Flame

TEST REPORT

12/18 Test Report No. 2221	Job No. 094318021	Year	FY2018-19
Type of Sample	Ambient Air	Quarter Ending	Dec-18
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution		
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:** KDH OCP **Stations:** Bhoot Nagar 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 ₁₀ + >PM ₁₀)TPM	Particulate Matter (PM ₁₀)	*Particulate Matter (PM _{2.5})	Sulphur Dioxide (SO ₂)	Nitrogen Oxides (as NO ₂)	
Oct-18 1st FN	05/10/18-06/10/18	15/10/18	15/10/18-24/10/18	171	62	35	< 25	< 6	East Sunny
Oct-18 2nd FN	23/10/18-24/10/18	31/10/18	31/10/18-09/11/18	211	84	45	< 25	< 6	East Sunny
Nov-18 3rd FN	12/11/18-13/11/18	16/11/18	16/11/18-25/11/18	226	92	56	< 25	< 6	East Sunny
Nov-18 4th FN	27/11/18-28/11/18	03/12/18	03/12/18-12/12/18	309	109	65	< 25	< 6	East Sunny
Dec-18 5th FN	12/12/18-13/12/18	17/12/18	17/12/18-26/12/18	159	49	28	< 25	< 6	East Sunny
Dec-18 6th FN	21/12/18-22/12/18	01/01/19	01/01/19-10/01/19	331	113	66	< 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.

*Out of NABL scope.

TEST REPORT

12/18 Test Report No. 2222	Job No. 094318021	Year	FY2018-19
Type of Sample	Ambient Air	Quarter Ending	Dec-18
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution		
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:** KDH OCP **Stations:** Water Tanker Filling Station

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters (in $\mu\text{g}/\text{m}^3$)			Sulphur Dioxide (SO ₂)	Nitrogen Oxides (as NO ₂)	Wind Direction (from) & Weather
				*Total Particulate Matter (PM ₁₀ + >PM ₁₀)/TPM	Particulate Matter (PM ₁₀)	*Particulate Matter (PM _{2.5})			
Oct-18 1st FN	05/10/18-06/10/18	15/10/18	15/10/18-24/10/18	128	50	24	< 25	< 6	East Sunny
Oct-18 2nd FN	23/10/18-24/10/18	31/10/18	31/10/18-09/11/18	323	137	68	< 25	< 6	East Sunny
Nov-18 3rd FN	12/11/18-13/11/18	16/11/18	16/11/18-25/11/18	332	114	63	< 25	< 6	East Sunny
Nov-18 4th FN	27/11/18-28/11/18	03/12/18	03/12/18-12/12/18	269	94	41	< 25	< 6	East Sunny
Dec-18 5th FN	12/12/18-13/12/18	17/12/18	17/12/18-26/12/18	195	62	39	< 25	< 6	East Sunny
Dec-18 6th FN	21/12/18-22/12/18	01/01/19	01/01/19-10/01/19	223	82	44	< 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.
- *Out of NABL scope.

TEST REPORT

12/18 Test Report No. 2223	Job No. 094318021	Year	FY2018-19
Type of Sample	Ambient Air	Quarter Ending	Dec-18
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution		
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:** KDH OCP **Stations:** Karkatta 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_{10} + $>\text{PM}_{10}$)TPM	Particulate Matter (PM_{10})	*Particulate Matter ($\text{PM}_{2.5}$)	Sulphur Dioxide (SO_2)	Nitrogen Oxides (as NO_2)	
Oct-18 1st FN	06/10/18-07/10/18	15/10/18	15/10/18-24/10/18	246	88	53	< 25	< 6	East Sunny
Oct-18 2nd FN	23/10/18-24/10/18	31/10/18	31/10/18-09/11/18	161	70	43	< 25	< 6	East Sunny
Nov-18 3rd FN	13/11/18-14/11/18	16/11/18	16/11/18-25/11/18	361	127	72	< 25	< 6	East Sunny
Nov-18 4th FN	28/11/18-29/11/18	03/12/18	03/12/18-12/12/18	238	75	39	< 25	< 6	East Sunny
Dec-18 5th FN	13/12/18-14/12/18	17/12/18	17/12/18-26/12/18	325	112	68	< 25	< 6	East Sunny
Dec-18 6th FN	22/12/18-23/12/18	01/01/19	01/01/19-10/01/19	282	96	56	< 25	< 6	West 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.

*Out of NABL scope.

TEST REPORT

12/18 Test Report No. 2224	Job No. 094318021	Year	FY2018-19
Type of Sample	Ambient Air	Quarter Ending	Dec-18
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution		
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:** KDH OCP **Stations:** BishrampurVillage

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 ₁₀ + >PM ₁₀)TPM	Particulate Matter (PM ₁₀)	*Particulate Matter (PM _{2.5})	Sulphur Dioxide (SO ₂)	Nitrogen Oxides (as NO ₂)	
Oct-18 1st FN	06/10/18-07/10/18	15/10/18	15/10/18-24/10/18	212	70	37	< 25	< 6	East Sunny
Oct-18 2nd FN	24/10/18-25/10/18	31/10/18	31/10/18-09/11/18	220	83	39	< 25	< 6	East Sunny
Nov-18 3rd FN	13/11/18-14/11/18	16/11/18	16/11/18-25/11/18	256	90	52	< 25	< 6	East Sunny
Nov-18 4th FN	28/11/18-29/11/18	03/12/18	03/12/18-12/12/18	175	55	37	< 25	< 6	East Sunny
Dec-18 5th FN	13/12/18-14/12/18	17/12/18	17/12/18-26/12/18	215	71	38	< 25	< 6	East Sunny
Dec-18 6th FN	22/12/18-23/12/18	01/01/19	01/01/19-10/01/19	240	69	44	< 25	< 6	West 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.

*Out of NABL scope.

TEST REPORT

12/18 Test Report No. 2225	Job No. 094318021	Year	FY2018-19
Type of Sample	Ambient Air	Quarter Ending	Dec-18
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution		
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:** KDH OCP **Stations:** KDH Siding 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_{10} + $>\text{PM}_{10}$)TPM	Particulate Matter (PM_{10})	*Particulate Matter ($\text{PM}_{2.5}$)	Sulphur Dioxide (SO_2)	Nitrogen Oxides (as NO_2)	
Oct-18 1st FN	09/10/18-10/10/18	15/10/18	15/10/18-24/10/18	164	62	37	< 25	< 6	East Sunny
Oct-18 2nd FN	29/10/18-30/10/18	31/10/18	31/10/18-09/11/18	243	91	50	< 25	< 6	East Sunny
Nov-18 3rd FN	13/11/18-14/11/18	16/11/18	16/11/18-25/11/18	160	54	29	< 25	< 6	East Sunny
Nov-18 4th FN	27/11/18-28/11/18	03/12/18	03/12/18-12/12/18	338	126	71	< 25	< 6	East Sunny
Dec-18 5th FN	09/12/18-10/12/18	17/12/18	17/12/18-26/12/18	174	62	35	< 25	< 6	#REF!
Dec-18 6th FN	29/12/18-30/12/18	01/01/19	01/01/19-10/01/19	190	61	34	< 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.

*Out of NABL scope.

TEST REPORT

12/18 Test Report No. 2226	Job No. 094318021	Year	FY2018-19
Type of Sample:	Noise	Quarter Ending	Dec-18
Customer	CCL		
Testing Protocol:	'The noise pollution (Regulation and Control), Rules,2000		
Remarks:			

TEST RESULT

The sample has been tested with the following results:-

Area : North Karanpura **Project:** KDH OCP

Station Name	Noise Level					
	Oct-18 1st FN	Oct-18 2nd FN	Nov-18 3rd FN	Nov-18 4th FN	Dec-18 5th FN	Dec-18 6th FN
Date of recording	05/10/18	22/10/18	12/11/18	27/11/18	12/12/18	21/12/18
P.O. Office	54.4	54.2	48.3	52.7	53.9	51.6
Date of recording	05/10/18	23/10/18	12/11/18	27/11/18	12/12/18	21/12/18
Booth nagar	52.1	53.8	45.7	45.9	46.3	45.9
Date of recording	05/10/18	23/10/18	12/11/18	27/11/18	12/12/18	21/12/18
Water Tanker Filling Station	50.2	52.2	48.6	50.5	52.9	50.5
Date of recording	06/10/18	23/10/18	13/11/18	28/11/18	13/12/18	22/12/18
Karkatta Village	48.3	52.7	46.2	46.2	46.5	46.2
Date of recording	06/10/18	24/10/18	13/11/18	28/11/18	13/12/18	22/12/18
Bisrampur Village	47.1	52.2	45.6	45.7	45.1	45.7
Date of recording	06/10/18	24/10/18	13/11/18	28/11/18	13/12/18	22/12/18
KDH Siding Office	53.1	54.3	46.7	51.7	52.9	52.4

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

TEST REPORT

12/18 Test Report No. 2227	Job No. 094318021	Year	FY2018-19
Type of Sample:	Effluent Water	Quarter Ending	Dec-18
Customer	CCL		
Mode of Receipt of Sample:	Jointly picked up sample by laboratory at quarterly interval		
Testing Protocol:	MOEF -SCH-VI STANDARDS, Class 'a'		
Remarks & Observation:	Samples received in 2 ltr plastic Jerri cane, Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results:-

Area: North Karanpura **Project:** KDH OCP **Stations:** Mine Quarry Water

Analysis Results of FN Effluent Water							
Parameters →				COD	O & G	pH value	TSS
Detection Limit				4	2	0.2	10
MOEF -SCH-VI, STANDARDS, Class 'A'				250	10	5.5 to 9.0	100
Month	Date of Sampling	Date of Receipt of Sample	Date of Analysis	Value in mg/l, except pH			
Oct-18 1st FN	06/10/18	15/10/18	15/10/18-08/11/18	44	<2.00	7.93	28
Oct-18 2nd FN	25/10/18	31/10/18	31/10/18-24/11/18	32	<2.00	7.95	36
Nov-18 3rd FN	15/11/18	16/11/18	16/11/18-30/11/18	40	<2.00	8.09	52
Nov-18 4th FN	29/11/18	03/12/18	03/12/18-17/12/18	28	<2.00	7.31	26
Dec-18 5th FN	13/12/18	17/12/18	17/12/18-04/01/19	20	<2.00	7.47	24
Dec-18 6th FN	00/01/00	00/01/00	00/01/00-00/01/00	0	0	0	0
BIS Standard & Method				APHA, 22 nd 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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TEST REPORT

12/18 Test Report No. 2228	Job No. 094318021	Year	FY2018-19
Type of Sample:	Effluent Water	Quarter Ending	Dec-18
Customer	CCL		
Mode of Receipt of Sample:	Jointly picked up sample by laboratory at quarterly interval		
Testing Protocol:	MOEF -SCH-VI STANDARDS, Class 'a'		
Remarks & Observation:	Samples received in 2 ltr plastic Jerri cane, Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results:-

Area : North Karanpur **Project:** KDH OCP **Stations:** Workshop Effluent

Analysis Results of FN Effluent Water							
Parameters →				COD	O & G	pH value	TSS
Detection Limit				4	2	0.2	10
MOEF -SCH-VI, STANDARDS, Class 'A'				250	10	5.5 to 9.0	100
Month	Date of Sampling	Date of Receipt of Sample	Date of Analysis	Value in mg/l, except pH			
Oct-18 1st FN	06/10/18	15/10/18	15/10/18-08/11/18	780	12.2	7.16	1944
Oct-18 2nd FN	25/10/18	31/10/18	31/10/18-24/11/18	56	2.4	7.98	72
Nov-18 3rd FN	15/11/18	16/11/18	16/11/18-30/11/18	1080	12.8	7.11	1664
Nov-18 4th FN	29/11/18	03/12/18	03/12/18-17/12/18	840	<2.00	7.77	1256
Dec-18 5th FN	13/12/18	17/12/18	17/12/18-04/01/19	88	<2.00	8.02	96
Dec-18 6th FN	00/01/00	00/01/00	00/01/00-00/01/00	0	0	0	0
BIS Standard & Method				APHA, 22 nd 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

TEST REPORT

12/18 Test Report No. 2229	Job No. 094318021	Year	FY2018-19
Type of Sample:	Effluent Water	Quarter Ending	Dec-18
Customer	CCL		
Mode of Receipt of Sample:	Jointly picked up sample by laboratory at quarterly interval		
Testing Protocol:	MOEF -SCH-VI STANDARDS, Class 'a'		
Remarks & Observation:	Samples received in 2 ltr plastic Jerri cane, Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results:-

Area : North Karanpur **Project:** KDH OCP **Stations:** OB Dump Effluent

Analysis Results of FN Effluent Water							
Parameters →				COD	O & G	pH value	TSS
Detection Limit				4	2	0.2	10
MOEF -SCH-VI, STANDARDS, Class 'A'				250	10	5.5 to 9.0	100
Month	Date of Sampling	Date of Receipt of Sample	Date of Analysis	Value in mg/l, except pH			
Oct-18 1st FN	06/10/18	15/10/18	15/10/18-08/11/18	48	<2.00	7.89	22
Oct-18 2nd FN	25/10/18	31/10/18	31/10/18-24/11/18	20	<2.00	7.87	24
Nov-18 3rd FN	15/11/18	16/11/18	16/11/18-30/11/18	40	<2.00	7.98	54
Nov-18 4th FN	29/11/18	03/12/18	03/12/18-17/12/18	32	<2.00	7.81	28
Dec-18 5th FN	13/12/18	17/12/18	17/12/18-04/01/19	20	<2.00	7.88	28
Dec-18 6th FN	00/01/00	00/01/00	00/01/00-00/01/00	0	0	0	0
BIS Standard & Method				APHA, 22 nd 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

TEST REPORT

12/18 Test Report No. 2230	Job No. 094318021	Year	2018-19
Type of Sample:	Effluent Water	Quarter Ending	Dec.'18
Customer / W. O. no. & Date:	CCL	Date of Receipt of Sample:	01.01.19
Mode of Receipt of Sample:	Picked up sample by laboratory	Date of Analysis:	01.01.19-04.02.19
Testing Protocol:	MOEF -SCH-VI STANDARDS, Class 'a'	Date of Reporting:	04.02.19
Remarks & Observation:	Samples received in 2 ltr plastic Jerri cane, Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results:-

Area : North Karanpura Project: KDH OCP
 Stations: 1. Mine Quarry Water Date of Sampling: 24/12/2018
 2. Workshop Effluent 24/12/2018
 3. OB Dump Effluent 24/12/2018

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	0.14	0.16	0.17	0.02	50.0	IS 3025:34:1988, R: 2009, Nessler's
2	Arsenic (as As), mg/l, Max	<0.002	<0.002	<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	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	<0.0005	<0.0005	<0.0005	0.0005	2.0	APHA, 22 nd Edition, AAS-GTA
5	COD, mg/l, Max	40	24	32	4.00	250.0	APHA, 22 nd Edition, Closed Reflux, Titrimetric
6	Copper (as Cu), mg/l, Max	<0.03	<0.03	<0.03	0.03	3.0	IS 3025:42:1992 R: 2009, AAS-Flame
7	Dissolved Phosphate, mg/l, Max	<0.30	0.30	0.34	0.30	5.0	APHA, 22 nd Edition Molybdovanadate
8	Fluoride (as F) mg/l, Max	0.58	0.72	0.64	0.02	2.0	APHA, 22 nd Edition, SPADNS
9	Free Ammonia, mg/l, Max	<0.02	<0.02	<0.02	0.02	5.0	IS:3025:34:1988, Nessler's
10	Hexavalent Chromium, mg/l, Max	<0.01	<0.01	<0.01	0.01	0.1	APHA, 22 nd Edition, Diphenylcarbohydrazide
11	Iron (as Fe), mg/l, Max	<0.06	<0.06	<0.06	0.06	3.0	IS 3025:53:2003, R: 2009, AAS-Flame
12	Lead (as Pb), mg/l, Max	<0.005	<0.005	<0.005	0.005	0.1	APHA, 22 nd Edition, AAS-GTA
13	Manganese(as Mn), mg/l, Max	0.02	0.05	0.07	0.02	2.0	IS-3025:59:2006, AAS-Flame
14	Nickel (as Ni), mg/l, Max	0.01	0.01	0.02	0.01	3.0	IS-3025:54:2003, AAS-Flame
15	Nitrate Nitrogen, mg/l, Max	1.61	1.76	2.64	0.50	10.0	APHA, 22 nd Edition, UV-Spectrophotometric
16	Oil & Grease, mg/l, Max	<2.00	4.80	<2.00	2.00	10.0	IS 3025:39:1991, R: 2003, Partition Gravimetric
17	pH value	7.89	8.03	7.84	0.2	5.5 to 9.0	IS-3025:11:1983, R-1996, Electrometric
18	Phenolic compounds (as C ₆ H ₅ OH),mg/l, Max	<0.001	<0.001	<0.001	0.001	1.0	APHA, 22 nd Edition 4-Amino Antipyrine
19	Selenium (as Se), mg/l, Max	<0.002	<0.002	<0.002	0.002	0.05	APHA, 22 nd Edition, AAS-GTA
20	Sulphide (as SO ₃), mg/l, Max	<0.005	0.005	<0.005	0.005	2.0	APHA, 22 nd Edition Methylene Blue
21	Temperature (°C)	24.4	24.2	24.2	Shall not exceed 5° C above the receiving temp.		IS-3025:09:1984, Thermometric
22	Total Chromium (as Cr), mg/l, Max	<0.04	<0.04	<0.04	0.04	2.0	IS-3025:52:2003, AAS-Flame
23	Total Kjeldahl Nitrogen, mg/l, Max	<1.00	1.40	<1.00	1.00	100.0	IS:3025:34:1988, Nessler's
24	Total Residual Chlorine, mg/l, Max	<0.02	<0.02	<0.02	0.02	1.0	APHA, 22 nd Edition, DPD
25	Total Suspended Solids, mg/l, Max	32	20	24	10.00	100.0	IS 3025:17:1984, R:1996, Gravimetric
26	Zinc (as Zn), mg/l, Max	0.05	0.03	0.09	0.01	5.0	IS 3025:49:1994, R: 2009, AAS-Flame

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TEST REPORT

12/18 Test Report No. 2231	Job No. 094318021	Year	FY2018-19
Type of Sample:	Surface Water	Quarter Ending	Dec-18
Customer	CCL	Date of Receipt:	15/10/18
Mode of Receipt of Sample:	Jointly picked up sample by laboratory at quarterly interval	Date of Analysis:	15.10.18-22.01.19
Testing Protocol:	-		
Remarks & Observation:	Samples received in 2 ltr plastic Jerri cane, Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results:-

Area :	North Karanpura	Project:	KDH OCP
Stations:	1. U/S of Sonadoba Nala	Date of Sampling:	06/10/18
	2. D/S of Sonadoba Nala		06/10/18
	3. U/S of Damodar River		06/10/18
	4. D/S of Damodar River		06/10/18

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	<0.002	0.002	IS 3025/37:1988 R : 2003, AAS-VGA
2	BOD (3 days 27°C), mg/l, Max	2	2	2	2	2.00	IS 3025 /44: 1993, R : 2003 3 day incubation at 27°C
3	Cadmium(as Cd), mg/l, Max	<0.0005	<0.0005	<0.0005	<0.0005	0.0005	APHA, 22 nd Edition AAS-GTA
4	Chlorides (as Cl), mg/l, Max	20	20	12	14	2.00	IS-3025/32:1988, R-2007, Argentometric
5	Copper (as Cu), mg/l, Max	<0.03	<0.03	<0.03	<0.03	0.03	IS 3025 /42 : 1992 R : 2009, AAS-Flame
6	Dissolved Oxygen, min.	6.3	6.3	6.3	6.3	0.10	IS 3025/38:1989, R : 2003, Winkler Azide
7	Fluoride (as F) mg/l, Max	1	0.71	0.42	0.6	0.02	APHA, 22 nd Edition SPADNS
8	Hexavalent Chromium, mg/l, Max	<0.01	<0.01	<0.01	<0.01	0.01	APHA, 22 nd Edition, 1,5 - Diphenylcarbohydrazide
9	Iron (as Fe), mg/l, Max	<0.06	<0.06	<0.06	2.43	0.06	IS 3025 /53 : 2003, R : 2009, AAS-Flame
10	Lead (as Pb), mg/l, Max	<0.005	<0.005	<0.005	<0.005	0.005	APHA, 22 nd Edition AAS-GTA
11	Nitrate (as NO ₃), mg/l, Max	44.12	26.49	5.89	8.64	0.50	APHA, 22 nd Edition, UV-Spectrophotometric
12	pH value	7.7	7.92	8.05	8	0.2	IS-3025/11:1983, R-1996, Electrometric
13	Phenolic compounds (as C ₆ H ₅ OH), mg/l, Max	<0.001	<0.001	<0.001	<0.001	0.001	APHA, 22 nd Edition 4-Amino Antipyrine
14	Selenium (as Se), mg/l, Max	<0.002	<0.002	<0.002	<0.002	0.002	APHA, 22 nd Edition AAS-GTA
15	Sulphate (as SO ₄) mg/l, Max	452	25	11	45	2.00	APHA, 22 nd Edition Turbidity
16	Total Dissolved Solids, mg/l, Max	758	522	134	186	25.00	IS 3025 /16:1984 R : 2006, Gravimetric
17	Total Suspended Solids, mg/l, Max	24	22	22	28	10.00	IS 3025 /17:1984, R : 1996, Gravimetric
18	Zinc (as Zn), mg/l, Max	0.02	0.01	0.01	0.03	0.01	IS 3025 /49 : 1994, R : 2009, AAS-Flame

TEST REPORT

12/18 Test Report No. 2232	Job No. 094318021	Year	FY2018-19
Type of Sample:	Drinking Water	Quarter Ending	Dec-18
Customer	CCL	Date of Receipt:	15/10/18
Mode of Receipt of Sample:	Jointly picked up sample by laboratory at quarterly interval	Date of Analysis:	15.10.18-22.01.19
Testing Protocol:	IS:10500 Drinking Water Standards		
Remarks & Observation:	Samples received in 2 ltr plastic Jerri cane, Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results:-

Area :	North Karanpura	Project:	KDH OCP
Stations:		Date of Sampling:	
	1. Well Water at Bishrampur Village		06/10/18
	2. Well Water at Bhootnagar Village		06/10/18
	1. Well Water at Karkatta Village		06/10/18
	2. Well Water at Bukbuka Village		06/10/18

Sl. No	Parameter	Sampling Stations				Detection Limit	IS:10500 Standards	Standard / Test Method
		1	2	3	4			
1	Boron (as B), mg/l, Max	<0.20	<0.20	<0.20	<0.20	0.20	0.5	APHA, 22 nd Edition, Carmine
2	Cadmium (as Cd), mg/l, Max	<0.0005	<0.0005	<0.0005	<0.0005	0.0005	0.003	APHA, 22 nd Edition, AAS-GTA
3	Calcium (as Ca), mg/l, Max	83.2	88	57.6	59.2	1.60	75	IS-3025/40:1991, EDTA
4	Chloride (as Cl), mg/l, Max	124	124	54	52	2.00	250	IS-3025/32:1988, R-2007, Argentometric
5	Copper (as Cu), mg/l, Max	<0.03	<0.03	<0.03	<0.03	0.03	0.05	IS 3025/42 : 1992 R : 2009, AAS-Flame
6	Fluoride (as F) mg/l, Max	0.32	0.83	0.44	0.49	0.02	1.0	APHA, 22 nd Edition, SPADNS
7	Free Residual Chlorine, mg/l, Min	0.02	0.03	0.03	0.04	0.02	0.2	APHA, 22 nd Edition, DPD
8	Iron (as Fe), mg/l, Max	<0.06	<0.06	<0.06	<0.06	0.06	0.3	IS 3025 /53 : 2003, R : 2009, AAS-Flame
9	Lead (as Pb), mg/l, Max	<0.005	<0.005	<0.005	<0.005	0.005	0.01	APHA, 22 nd Edition, AAS-GTA
10	Manganese (as Mn), mg/l, Max	<0.02	<0.02	<0.02	<0.02	0.02	0.1	IS-3025/59:2006, AAS-Flame
11	Nickel (as Ni), mg/l, Max	<0.01	<0.01	<0.01	<0.01	0.01	0.02	IS-3025/54:2003, AAS-Flame
12	Nitrate (as NO ₃), mg/l, Max	167.37	166.52	166.21	165.68	0.5	45	APHA, 22 nd Edition, UV-Spectrophotometric
13	Odour	Agreeable	Agreeable	Agreeable	Agreeable	Qualitative	Agreeable	IS 3025 /05:1983, R-2012, Qualitative
14	pH value	8.19	8.28	7.92	7.9	0.2	6.5 to 8.5	IS-3025/11:1983, R-1996, Electrometric
15	Phenolic compounds (as C ₆ H ₅ OH), mg/l, Max	<0.001	<0.001	<0.001	<0.001	0.001	0.001	APHA, 22 nd Edition, 4-Amino Antipyrine
16	Selenium (as Se), mg/l, Max	<0.002	<0.002	<0.002	<0.002	0.002	0.01	APHA, 22 nd Edition, AAS-GTA
17	Sulphate (as SO ₄) mg/l, Max	51	54	39	34	2.00	200	APHA, 22 nd Edition, Turbidity
18	Total Alkalinity (CaCO ₃), mg/l, Max	132	140	124	108	4.00	200	IS-3025/23:1986, Titration
19	Total Arsenic (as As), mg/l, Max	<0.002	<0.002	0.003	<0.002	0.002	0.01	IS 3025/ 37:1988 R : 2003, AAS-VGA
20	Total Chromium (as Cr), mg/l, Max	0.16	0.16	0.13	0.15	0.04	0.05	IS-3025/52:2003, AAS-Flame
21	Total Dissolved Solids, mg/l, Max	662	588	392	416	25.00	500	IS 3025 /16:1984 R : 2006, Gravimetric
22	Total Hardness (CaCO ₃), mg/l, Max	336	344	240	236	4.00	200	IS-3025/21:1983, R-2002, EDTA
23	Turbidity, NTU, Max	1	1.5	1.4	1.2	1.0	1	IS-3025/10:1984 R-1996, Nephelometric
24	Zinc (as Zn), mg/l, Max	0.01	0.01	0.03	0.01	0.01	5.0	IS 3025/ 49 : 1994, R : 2009, AAS-Flame

TEST REPORT

IB19 Test Report No. 2218	Job No. 094318021	Year	FY2018-19
Type of Sample	Ambient Air	Quarter Ending	Mar-19
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution		
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:** KDH OCP **Stations:** P.O.Office

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 ₁₀ + >PM ₁₀)TPM	Particulate Matter (PM ₁₀)	*Particulate Matter (PM _{2.5})	Sulphur Dioxide (SO ₂)	Nitrogen Oxides (as NO ₂)	
Jan-19 1st FN	12/01/19-13/01/19	16-01-2019	16/01/19-21/01/19	614	309	102	< 25	< 6	East Sunny
Jan-19 2nd FN	20/01/19-21/01/19	01-02-2019	01/02/19-06/02/19	615	312	108	< 25	< 6	West Sunny
Feb-19 3rd FN	12/02/19-13/02/19	18-02-2019	18/02/19-22/02/19	551	264	85	< 25	< 6	East Sunny
Feb-19 4th FN	21/02/19-22/02/19	01-03-2019	01/03/19-06/03/19	301	132	55	< 25	< 6	West Sunny
Mar-19 5th FN	05/03/19-06/03/19	18-03-2019	18/03/19-23/03/19	305	181	75	< 25	< 6	East Sunny
Mar-19 6th FN	27/03/19-28/03/19	01-04-2019	01/04/19-05/04/19	284	156	56	< 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.
- *Out of NABL scope.

TEST REPORT

03/19 Test Report No. 2219	Job No. 094318021	Year	FY2018-19
Type of Sample	Ambient Air	Quarter Ending	Mar-19
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution		
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:** KDH OCP **Stations:** Bhoot Nagar 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 ($\text{PM}_{10} + >\text{PM}_{10}$)TPM	Particulate Matter (PM_{10})	*Particulate Matter ($\text{PM}_{2.5}$)	Sulphur Dioxide (SO_2)	Nitrogen Oxides (as NO_2)	
Jan-19 1st FN	12/01/19-13/01/19	16-01-2019	16/01/19-21/01/19	137	42	27	< 25	< 6	East Sunny
Jan-19 2nd FN	21/01/19-22/01/19	01-02-2019	01/02/19-06/02/19	282	91	52	< 25	< 6	West Sunny
Feb-19 3rd FN	12/02/19-13/02/19	18-02-2019	18/02/19-22/02/19	262	82	51	< 25	< 6	East Sunny
Feb-19 4th FN	21/02/19-22/02/19	01-03-2019	01/03/19-06/03/19	232	85	45	< 25	< 6	East Sunny
Mar-19 5th FN	05/03/19-06/03/19	18-03-2019	18/03/19-23/03/19	218	71	43	< 25	< 6	East Sunny
Mar-19 6th FN	27/03/19-28/03/19	01-04-2019	01/04/19-05/04/19	182	68	44	< 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.

*Out of NABL scope.

TEST REPORT

IS 19 Test Report No. 2220	Job No. 094318021	Year	FY2018-19
Type of Sample	Ambient Air	Quarter Ending	Mar-19
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution		
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:** KDH OCP **Stations:** Water Tanker Filling Station

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_{10} + $>\text{PM}_{10}$)TPM	Particulate Matter (PM_{10})	*Particulate Matter ($\text{PM}_{2.5}$)	Sulphur Dioxide (SO_2)	Nitrogen Oxides (as NO_2)	
Jan-19 1st FN	12/01/19-13/01/19	16-01-2019	16/01/19-21/01/19	237	76	45	< 25	< 6	East Sunny
Jan-19 2nd FN	21/01/19-22/01/19	01-02-2019	01/02/19-06/02/19	137	41	27	< 25	< 6	West Sunny
Feb-19 3rd FN	12/02/19-13/02/19	18-02-2019	18/02/19-22/02/19	343	131	73	< 25	< 6	East Sunny
Feb-19 4th FN	21/02/19-22/02/19	01-03-2019	01/03/19-06/03/19	326	129	69	< 25	< 6	East Sunny
Mar-19 5th FN	05/03/19-06/03/19	18-03-2019	18/03/19-23/03/19	265	89	51	< 25	< 6	East Sunny
Mar-19 6th FN	27/03/19-28/03/19	01-04-2019	01/04/19-05/04/19	292	96	56	< 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.
- *Out of NABL scope.

TEST REPORT

03/19 Test Report No. 2221	Job No. 094318021	Year	FY2018-19
Type of Sample	Ambient Air	Quarter Ending	Mar-19
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution		
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:** KDH OCP **Stations:** Karkatta 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 ($\text{PM}_{10} + >\text{PM}_{10}$)TPM	Particulate Matter (PM_{10})	*Particulate Matter ($\text{PM}_{2.5}$)	Sulphur Dioxide (SO_2)	Nitrogen Oxides (as NO_2)	
Jan-19 1st FN	13/01/19-14/01/19	16-01-2019	16/01/19-21/01/19	294	83	50	< 25	< 6	East Sunny
Jan-19 2nd FN	21/01/19-22/01/19	01-02-2019	01/02/19-06/02/19	283	96	54	< 25	< 6	West Sunny
Feb-19 3rd FN	13/02/19-14/02/19	18-02-2019	18/02/19-22/02/19	279	93	51	< 25	< 6	East Sunny
Feb-19 4th FN	21/02/19-22/02/19	01-03-2019	01/03/19-06/03/19	136	44	21	< 25	< 6	East Sunny
Mar-19 5th FN	06/03/19-07/03/19	18-03-2019	18/03/19-23/03/19	194	65	33	< 25	< 6	East Sunny
Mar-19 6th FN	28/03/19-29/03/19	01-04-2019	01/04/19-05/04/19	260	89	48	< 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.

*Out of NABL scope.

TEST REPORT

03/19 Test Report No. 2222	Job No. 094318021	Year	FY2018-19
Type of Sample	Ambient Air	Quarter Ending	Mar-19
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution		
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:** KDH OCP **Stations:** BishrampurVillage

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 ₁₀ + >PM ₁₀)TPM	Particulate Matter (PM ₁₀)	*Particulate Matter (PM _{2.5})	Sulphur Dioxide (SO ₂)	Nitrogen Oxides (as NO ₂)	
Jan-19 1st FN	13/01/19-14/01/19	16-01-2019	16/01/19-21/01/19	164	53	34	< 25	< 6	East Sunny
Jan-19 2nd FN	21/01/19-22/01/19	01-02-2019	01/02/19-06/02/19	140	52	33	< 25	< 6	West Sunny
Feb-19 3rd FN	13/02/19-14/02/19	18-02-2019	18/02/19-22/02/19	183	66	38	< 25	< 6	East Sunny
Feb-19 4th FN	21/02/19-22/02/19	01-03-2019	01/03/19-06/03/19	231	77	46	< 25	< 6	East Sunny
Mar-19 5th FN	06/03/19-07/03/19	18-03-2019	18/03/19-23/03/19	322	146	67	< 25	< 6	East Sunny
Mar-19 6th FN	28/03/19-29/03/19	01-04-2019	01/04/19-05/04/19	285	95	51	< 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.

*Out of NABL scope.

TEST REPORT

03/19 Test Report No. 2223	Job No. 094318021	Year	FY2018-19
Type of Sample	Ambient Air	Quarter Ending	Mar-19
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution		
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:** KDH OCP **Stations:** KDH Siding 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 ($\text{PM}_{10} + >\text{PM}_{10}$)TPM	Particulate Matter (PM_{10})	*Particulate Matter ($\text{PM}_{2.5}$)	Sulphur Dioxide (SO_2)	Nitrogen Oxides (as NO_2)	
Jan-19 1st FN	12/01/19-13/01/19	16-01-2019	16/01/19-21/01/19	260	94	50	< 25	< 6	West Sunny
Jan-19 2nd FN	29/01/19-30/01/19	01-02-2019	01/02/19-06/02/19	252	82	50	< 25	< 6	East Sunny
Feb-19 3rd FN	13/02/19-14/02/19	18-02-2019	18/02/19-22/02/19	183	65	40	< 25	< 6	East Sunny
Feb-19 4th FN	26/02/19-27/02/19	01-03-2019	01/03/19-06/03/19	229	79	46	< 25	< 6	East Sunny
Mar-19 5th FN	13/03/19-14/03/19	18-03-2019	18/03/19-23/03/19	338	144	62	< 25	< 6	East Sunny
Mar-19 6th FN	27/03/19-28/03/19	01-04-2019	01/04/19-05/04/19	207	173	39	< 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.

*Out of NABL scope.

TEST REPORT

03/19 Test Report No. 2224	Job No. 094318021	Year	FY2018-19
Type of Sample:	Noise	Quarter Ending	Mar-19
Customer	CCL		
Testing Protocol:	'The noise pollution (Regulation and Control), Rules, 2000		
Remarks:			

TEST RESULT

The sample has been tested with the following results:-

Area : North Karanpura **Project:** KDH OCP

Station Name	Noise Level					
	Jan-19 1st FN	Jan-19 2nd FN	Feb-19 3rd FN	Feb-19 4th FN	Mar-19 5th FN	Mar-19 6th FN
Date of recording	12-01-2019	20-01-2019	12-02-2019	21-02-2019	05-03-2019	27-03-2019
P.O.Office	47.6	50.4	50.2	50.3	53.5	50.2
Date of recording	12-01-2019	21-01-2019	12-02-2019	21-02-2019	05-03-2019	27-03-2019
Booth nagar	45.7	51.5	47.2	50.4	46.1	51.3
Date of recording	12-01-2019	21-01-2019	12-02-2019	21-02-2019	05-03-2019	27-03-2019
Water Tanker Filling Station	48.9	49.7	50.6	49.6	48.7	51.9
Date of recording	13-01-2019	21-01-2019	13-02-2019	21-02-2019	06-03-2019	28-03-2019
Karkatta Village	45.8	50.2	48.6	50.2	45.1	52.4
Date of recording	13-01-2019	21-01-2019	13-02-2019	21-02-2019	06-03-2019	28-03-2019
Bisrampur Village	45.6	49.8	49.1	49.7	45.3	52.5
Date of recording	13-01-2019	22-01-2019	13-02-2019	21-02-2019	06-03-2019	28-03-2019
KDH Siding Office	46.7	65.4	50.2	62.3	52.9	51.8

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

TEST REPORT

03/19 Test Report No. 2225	Job No. 094318021	Year	FY2018-19
Type of Sample:	Effluent Water	Quarter Ending	Mar-19
Customer	CCL		
Mode of Receipt of Sample:	Jointly picked up sample by laboratory at quarterly interval		
Testing Protocol:	MOEF -SCH-VI STANDARDS, Class 'a'		
Remarks & Observation:	Samples received in 2 ltr plastic Jerri cane, Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results:-

Area: North Karanpura

Project: KDH OCP

Stations: Mine Quarry Water

Analysis Results of FN Effluent Water							
Parameters →				COD	O & G	pH value	TSS
Detection Limit				4	2	0.2	10
MOEF -SCH-VI, STANDARDS, Class 'A'				250	10	5.5 to 9.0	100
Month	Date of Sampling	Date of Receipt of Sample	Date of Analysis	Value in mg/l, except pH			
Jan-19 1st FN	14/01/19	16/01/19	16/01/19-05/02/19	20	<2.00	7.95	26
Jan-19 2nd FN	25/01/19	01/02/19	01/02/19-28/02/19	32	<2.00	7.36	34
Feb-19 3rd FN	15/02/19	18/02/19	18/02/19-16/03/19	32	<2.00	7.89	38
Feb-19 4th FN	22/02/19	01/03/19	01/03/19-23/03/19	28	<2.00	8.08	32
Mar-19 5th FN	08/03/19	18/03/19	18/03/19-03/04/19	48	<2.00	7.72	64
Mar-19 6th FN	30/03/19	01/04/19	01/04/19-15/04/19	24	<2.00	7.93	28
BIS Standard & Method				APHA, 22 nd 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

TEST REPORT

03/19 Test Report No. 2226	Job No. 094318021	Year	FY2018-19
Type of Sample:	Effluent Water	Quarter Ending	Mar-19
Customer	CCL		
Mode of Receipt of Sample:	Jointly picked up sample by laboratory at quarterly interval		
Testing Protocol:	MOEF -SCH-VI STANDARDS, Class 'a'		
Remarks & Observation:	Samples received in 2 ltr plastic Jerri cane, Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results:-

Area : North Karanpur **Project:** KDH OCP **Stations:** Workshop Effluent

Analysis Results of FN Effluent Water							
Parameters →				COD	O & G	pH value	TSS
Detection Limit				4	2	0.2	10
MOEF -SCH-VI, STANDARDS, Class 'A'				250	10	5.5 to 9.0	100
Month	Date of Sampling	Date of Receipt of Sample	Date of Analysis	Value in mg/l, except pH			
Jan-19 1st FN	14/01/19	16/01/19	16/01/19-05/02/19	44	<2.00	7.91	52
Jan-19 2nd FN	25/01/19	01/02/19	01/02/19-28/02/19	28	8.2	7.49	32
Feb-19 3rd FN	15/02/19	18/02/19	18/02/19-16/03/19	40	6.2	7.73	52
Feb-19 4th FN	22/02/19	01/03/19	01/03/19-23/03/19	340	3.2	7.64	418
Mar-19 5th FN	08/03/19	18/03/19	18/03/19-03/04/19	284	6.4	8.28	382
Mar-19 6th FN	30/03/19	01/04/19	01/04/19-15/04/19	88	6.8	7.18	122
BIS Standard & Method				APHA, 22 nd 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

Note: 1) This Report refers to the values obtained at the time of testing and results related to the items tested
 2) This Report cannot be reproduced in part or full without written permission of the management.
 3) The life span of samples varies as samples cannot be retained for retests.

TEST REPORT

03/19 Test Report No. 2227	Job No. 094318021	Year	FY2018-19
Type of Sample:	Effluent Water	Quarter Ending	Mar-19
Customer	CCL		
Mode of Receipt of Sample:	Jointly picked up sample by laboratory at quarterly interval		
Testing Protocol:	MOEF -SCH-VI STANDARDS, Class 'a'		
Remarks & Observation:	Samples received in 2 ltr plastic Jerri cane, Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results:-

Area : North Karanpur

Project: KDH OCP

Stations: OB Dump Effluent

Analysis Results of FN Effluent Water							
Parameters →				COD	O & G	pH value	TSS
Detection Limit				4	2	0.2	10
MOEF -SCH-VI, STANDARDS, Class 'A'				250	10	5.5 to 9.0	100
Month	Date of Sampling	Date of Receipt of Sample	Date of Analysis	Value in mg/l, except pH			
Jan-19 1st FN	14/01/19	16/01/19	16/01/19-05/02/19	40	<2.00	7.99	48
Jan-19 2nd FN	25/01/19	01/02/19	01/02/19-28/02/19	72	<2.00	7.66	172
Feb-19 3rd FN	15/02/19	18/02/19	18/02/19-16/03/19	28	<2.00	8.17	32
Feb-19 4th FN	22/02/19	01/03/19	01/03/19-23/03/19	28	<2.00	7.79	34
Mar-19 5th FN	08/03/19	18/03/19	18/03/19-03/04/19	40	<2.00	7.78	52
Mar-19 6th FN	30/03/19	01/04/19	01/04/19-15/04/19	16	<2.00	7.97	22
BIS Standard & Method				APHA, 22 nd 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

TEST REPORT

03/19 Test Report No. 2228	Job No. 094318021	Year	FY2018-19
Type of Sample:	Surface Water	Quarter Ending	Mar-19
Customer	CCL	Date of Receipt:	16-01-2019
Mode of Receipt of Sample:	Jointly picked up sample by laboratory at quarterly interval	Date of Analysis:	16.01.19-20.02.19
Testing Protocol:	-		
Remarks & Observation:	Samples received in 2 ltr plastic Jerri cane, Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results:-

Area :	North Karanpura	Project:	KDH OCP
Stations:		Date of Sampling:	
	1. U/S of Sonadoba Nala		14-01-2019
	2. D/S of Sonadoba Nala		14-01-2019
	3. U/S of Damodar River		14-01-2019
	4. D/S of Damodar River		14-01-2019

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	<0.002	0.002	IS 3025/37:1988 R : 2003, AAS-VGA
2	BOD (3 days 27°C), mg/l, Max	2.4	2.2	2.6	2.2	2.00	IS 3025 /44: 1993, R : 2003 3 day incubation at 27°C
3	Cadmium(as Cd), mg/l, Max	<0.0005	<0.0005	<0.0005	<0.0005	0.0005	APHA, 22 nd Edition AAS-GTA
4	Chlorides (as Cl), mg/l, Max	68	72	14	16	2.00	IS-3025/32:1988, R-2007, Argentometric
5	Copper (as Cu), mg/l, Max	<0.03	<0.03	<0.03	<0.03	0.03	IS 3025 /42 : 1992 R : 2009, AAS-Flame
6	Dissolved Oxygen, min.	6.3	6.3	6.3	6.3	0.10	IS 3025/38:1989, R : 2003, Winkler Azide
7	Fluoride (as F) mg/l, Max	1.14	1.18	0.84	0.8	0.02	APHA, 22 nd Edition SPADNS
8	Hexavalent Chromium, mg/l, Max	<0.01	<0.01	<0.01	<0.01	0.01	APHA, 22 nd Edition, 1,5 - Diphenylcarbohydrazide
9	Iron (as Fe), mg/l, Max	<0.06	<0.06	<0.06	<0.06	0.06	IS 3025 /53 : 2003, R : 2009, AAS-Flame
10	Lead (as Pb), mg/l, Max	<0.005	<0.005	<0.005	<0.005	0.005	APHA, 22 nd Edition AAS-GTA
11	Nitrate (as NO ₃), mg/l, Max	3.90	49.44	6.87	8.99	0.50	APHA, 22 nd Edition, UV-Spectrophotometric
12	pH value	7.73	7.97	8.02	8.04	0.2	IS-3025/11:1983, R-1996, Electrometric
13	Phenolic compounds (as C ₆ H ₅ OH), mg/l, Max	<0.001	<0.001	<0.001	<0.001	0.001	APHA, 22 nd Edition 4-Amino Antipyrine
14	Selenium (as Se), mg/l, Max	<0.002	<0.002	<0.002	<0.002	0.002	APHA, 22 nd Edition AAS-GTA
15	Sulphate (as SO ₄) mg/l, Max	199	200	15	16	2.00	APHA, 22 nd Edition Turbidity
16	Total Dissolved Solids, mg/l, Max	818	826	146	178	25.00	IS 3025 /16:1984 R : 2006, Gravimetric
17	Total Suspended Solids, mg/l, Max	26	24	30	22	10.00	IS 3025 /17:1984, R :1996, Gravimetric
18	Zinc (as Zn), mg/l, Max	0.01	<0.01	<0.01	<0.01	0.01	IS 3025 /49 : 1994, R : 2009, AAS-Flame

TEST REPORT

03/19 Test Report No. 2229	Job No. 094318021	Year	FY2018-19
Type of Sample:	Drinking Water	Quarter Ending	Mar-19
Customer	CCL	Date of Receipt:	16-01-2019
Mode of Receipt of Sample:	Jointly picked up sample by laboratory at quarterly interval	Date of Analysis:	16.01.19-20.02.19
Testing Protocol:	IS:10500 Drinking Water Standards		
Remarks & Observation:	Samples received in 2 ltr plastic Jerri cane, Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results:-

Area :	North Karanpura	Project:	KDH OCP
Stations:		Date of Sampling:	
	1. Well Water at Bishrampur Village		14-01-2019
	2. Well Water at Bhootnagar Village		14-01-2019
	3. Well Water at Karkatta Village		14-01-2019
	4. Well Water at Bukbuka Village		14-01-2019

Sl. No	Parameter	Sampling Stations				Detection Limit	IS:10500 Standards	Standard / Test Method
		1	2	3	4			
1	Boron (as B), mg/l, Max	<0.20	<0.20	<0.20	<0.20	0.20	0.5	APHA, 22 nd Edition, Carmine
2	Cadmium (as Cd), mg/l, Max	<0.0005	<0.0005	<0.0005	<0.0005	0.0005	0.003	APHA, 22 nd Edition, AAS-GTA
3	Calcium (as Ca), mg/l, Max	91.2	89.6	88	86.4	1.60	75	IS-3025/40:1991, EDTA
4	Chloride (as Cl), mg/l, Max	160	150	158	156	2.00	250	IS-3025/32:1988, R-2007, Argentometric
5	Copper (as Cu), mg/l, Max	<0.03	<0.03	<0.03	<0.03	0.03	0.05	IS 3025/42 : 1992 R : 2009, AAS-Flame
6	Fluoride (as F) mg/l, Max	0.32	0.83	0.44	0.49	0.02	1.0	APHA, 22 nd Edition, SPADNS
7	Free Residual Chlorine, mg/l, Min	<0.02	<0.02	<0.02	<0.02	0.02	0.2	APHA, 22 nd Edition, DPD
8	Iron (as Fe), mg/l, Max	<0.06	<0.06	<0.06	<0.06	0.06	0.3	IS 3025 /53 : 2003, R : 2009, AAS-Flame
9	Lead (as Pb), mg/l, Max	<0.005	<0.005	<0.005	<0.005	0.005	0.01	APHA, 22 nd Edition, AAS-GTA
10	Manganese (as Mn), mg/l, Max	<0.02	<0.02	<0.02	<0.02	0.02	0.1	IS-3025/59:2006, AAS-Flame
11	Nickel (as Ni), mg/l, Max	<0.01	<0.01	<0.01	<0.01	0.01	0.02	IS-3025/54:2003, AAS-Flame
12	Nitrate (as NO ₃), mg/l, Max	41.42	41.15	40.93	41.60	0.5	45	APHA, 22 nd Edition, UV-Spectrophotometric
13	Odour	Agreeable	Agreeable	Agreeable	Agreeable	Qualitative	Agreeable	IS 3025 /05:1983, R-2012, Qualitative
14	pH value	8.18	7	6.79	6.95	0.2	6.5 to 8.5	IS-3025/11:1983, R-1996, Electrometric
15	Phenolic compounds (as C ₆ H ₅ OH), mg/l, Max	<0.001	<0.001	<0.001	<0.001	0.001	0.001	APHA, 22 nd Edition, 4-Amino Antipyrine
16	Selenium (as Se), mg/l, Max	<0.002	<0.002	<0.002	<0.002	0.002	0.01	APHA, 22 nd Edition, AAS-GTA
17	Sulphate (as SO ₄) mg/l, Max	184	173	193	183	2.00	200	APHA, 22 nd Edition, Turbidity
18	Total Alkalinity (CaCO ₃), mg/l, Max	108	112	132	124	4.00	200	IS-3025/23:1986, Titration
19	Total Arsenic (as As), mg/l, Max	<0.002	<0.002	<0.002	<0.002	0.002	0.01	IS 3025 / 37:1988 R : 2003, AAS-VGA
20	Total Chromium (as Cr), mg/l, Max	<0.04	<0.04	<0.04	<0.04	0.04	0.05	IS-3025/52:2003, AAS-Flame
21	Total Dissolved Solids, mg/l, Max	739	708	728	713	25.00	500	IS 3025 /16:1984 R : 2006, Gravimetric
22	Total Hardness (CaCO ₃), mg/l, Max	384	376	368	364	4.00	200	IS-3025/21:1983, R-2002, EDTA
23	Turbidity, NTU, Max	1	1.2	1	1	1.0	1	IS-3025/10:1984 R-1996, Nephelometric
24	Zinc (as Zn), mg/l, Max	<0.01	<0.01	0.01	<0.01	0.01	5.0	IS 3025 / 49 : 1994, R : 2009, AAS-Flame