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OCL INDIA LIMITED
ओसीएल इण्डिया लिमिटेड

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To
The Additional Director, Government of India
Ministry of Environment, Forest & Climate Change (I.A. Division),
Indira Paryavaran Bhavan, Aliganj, jorbagh Road
New Delhi – 110003

Sub:- Submission of six month compliance report (April, 2017 to Sept., 2017) of EC letter for expansion cum modernization Project from 0.7 MTPA to 1.2 MTPA of clinker and from 1.275 MTPA to 2.00 MTPA of cement of M/s OCL INDIA LTD at Village – Rajgangpur, Tehsil Rajgangpur, District – Sundargarh, Odisha.

Ref:- Environment Clearance letter F. No. J-11011/206/2004- 1A II (I) dated 21st July 2005.

Daer Sir,

With reference to above letter, we enclose herewith the six monthly compliance report (Ending September, 2017) of conditions stipulated in the Environmental Clearance for the above project.

Thanking you

Yours sincerely
For OCL India Limited



(S. K. ROUT)
Dy. Executive Director (Mines & Env)



Encl: As above

Copy to:

1. The Chairman,
Central Pollution Control Board
Parivesh Bhavan
CBD – cum- Office Complex
East Arjun Nagar
NEW DELHI – 110032
2. The Director (S)
Government of India
Ministry of Environment and Forest
Eastern Regional Office
A 3. Chandrasekharpur
BHUBANESWAR – 751023
3. The Chairman,
State Pollution Control Board, Orissa
Parivesh Bhavan, A/118, Nilakanthnagar, Unit – VIII
BHUBANESWAR - 751023

**SIX MONTHLY COMPLIANCE REPORT
(APRIL, 2016 TO SEPTEMBER, 2017)
OF
ENVIRONMENT CLEARANCE LETTER NO.
J-11011/206/2004-IA II (I) DATED 21st JULY, 2005
FOR EXPANSION CUM MODERNISATION PROJECT
FROM 0.7 MTPA TO 1.2 MTPA OF KLINKER
AND
1.275 MTPA TO 2.0 MTPA OF CEMENT
BY
OCL INDIA LIMITED

RAJGANGPUR – 770017
DIST- SUNDARGARH
ODISHA**

Date-8th December, 2017**OCL INDIA LTD, RAJGANGPUR**

Sub: Submission of six monthly compliance report (April, 2017 to September, 2017) of conditions stipulated in Environmental Clearance letter No:- 11011/206/2004-1A II (I) J. dated 21st July 2005 by MoEF for the project of OCL India Limited, Rajgangpur.

A. SPECIAL CONDITION

Sl. NO.	Description of Conditions	Compliance Status																																																																
i	The gaseous and particulate matter emissions from various units shall conform to the standards prescribed by the state pollution control board. At no time the particulate emissions shall exceed 50 mg/Nm ³ . Further, the company may also take appropriate additional measures to improve design and operating practices of pollution control equipment. Tripping in kiln ESP shall be minimized. Interlocking facility shall be provided in the pollution control equipment so that in the event of the pollution control equipment not working, the respective unit(s) is shut down automatically.	<p>a. Complied.</p> <p>b. The compliance status of Stack emission is given below. The reading taken from different location are stipulated with respect to the standard prescribed within the norms of emission level. We have installed all the pollution control equipment in order to meet new emission standards, as revised by Gazette Notification G.S.R. 497 (E) dtd. 10th May, 2016.</p> <p>Online CFMS (Continuous Emission Monitoring system) have been installed and facility for transmitting online data to OSPCB/CPCB. The gaseous and particulate matter emissions most of time are within the prescribed limits. Action plan for the compliance of notified emission norms, as per the directions under Sec. 5 of The EP Act, 1986 have been submitted for further improvement. We have been also conducted third party monitoring through an accredited agency em-paneled by OSPCB. Summary of the same is reproduced below:</p> <table border="1" data-bbox="938 1027 2136 1433"> <thead> <tr> <th data-bbox="938 1027 1368 1066">Stack attached to</th> <th colspan="6" data-bbox="1368 1027 2136 1066">Particulate matter emission in mg/Nm³</th> </tr> <tr> <th data-bbox="938 1066 1368 1104"></th> <th data-bbox="1368 1066 1503 1104">April-17</th> <th data-bbox="1503 1066 1632 1104">May-17</th> <th data-bbox="1632 1066 1762 1104">June-17</th> <th data-bbox="1762 1066 1892 1104">Jul-17</th> <th data-bbox="1892 1066 2022 1104">Aug-17</th> <th data-bbox="2022 1066 2136 1104">Sept-17</th> </tr> </thead> <tbody> <tr> <td data-bbox="938 1104 1368 1142">Cement VRM-1 B/F</td> <td data-bbox="1368 1104 1503 1142">10.5</td> <td data-bbox="1503 1104 1632 1142">14.2</td> <td data-bbox="1632 1104 1762 1142">20.2</td> <td data-bbox="1762 1104 1892 1142">12.1</td> <td data-bbox="1892 1104 2022 1142">14.3</td> <td data-bbox="2022 1104 2136 1142">12.6</td> </tr> <tr> <td data-bbox="938 1142 1368 1181">Cement VRM-2 B/F</td> <td data-bbox="1368 1142 1503 1181">14.2</td> <td data-bbox="1503 1142 1632 1181">21.6</td> <td data-bbox="1632 1142 1762 1181">22.9</td> <td data-bbox="1762 1142 1892 1181">12.5</td> <td data-bbox="1892 1142 2022 1181">13.7</td> <td data-bbox="2022 1142 2136 1181">13.2</td> </tr> <tr> <td data-bbox="938 1181 1368 1219">Cement VRM-3 B/F</td> <td data-bbox="1368 1181 1503 1219">26.3</td> <td data-bbox="1503 1181 1632 1219">20.5</td> <td data-bbox="1632 1181 1762 1219">23.1</td> <td data-bbox="1762 1181 1892 1219">17.5</td> <td data-bbox="1892 1181 2022 1219">18.6</td> <td data-bbox="2022 1181 2136 1219">16.2</td> </tr> <tr> <td data-bbox="938 1219 1368 1257">Kiln + VRM ESP</td> <td data-bbox="1368 1219 1503 1257">28.2</td> <td data-bbox="1503 1219 1632 1257">23.5</td> <td data-bbox="1632 1219 1762 1257">25.1</td> <td data-bbox="1762 1219 1892 1257">24.9</td> <td data-bbox="1892 1219 2022 1257">19.7</td> <td data-bbox="2022 1219 2136 1257">19.6</td> </tr> <tr> <td data-bbox="938 1257 1368 1295">Cooler ESP</td> <td data-bbox="1368 1257 1503 1295">17.1</td> <td data-bbox="1503 1257 1632 1295">14.2</td> <td data-bbox="1632 1257 1762 1295">21.4</td> <td data-bbox="1762 1257 1892 1295">17.0</td> <td data-bbox="1892 1257 2022 1295">24.0</td> <td data-bbox="2022 1257 2136 1295">21.8</td> </tr> <tr> <td data-bbox="938 1295 1368 1334">Coal Mill B/F</td> <td data-bbox="1368 1295 1503 1334">13.8</td> <td data-bbox="1503 1295 1632 1334">18.9</td> <td data-bbox="1632 1295 1762 1334">18.5</td> <td data-bbox="1762 1295 1892 1334">14.1</td> <td data-bbox="1892 1295 2022 1334">10.3</td> <td data-bbox="2022 1295 2136 1334">10.6</td> </tr> <tr> <td data-bbox="938 1334 1368 1372">Cement Mill (1&2)B/F</td> <td colspan="6" data-bbox="1368 1334 2136 1372" rowspan="2">Units were stopped</td> </tr> <tr> <td data-bbox="938 1372 1368 1410">Cement Mill (3&4) Hybrid filter</td> </tr> </tbody> </table> <p>Additional measures have been taken for operating practices of pollution control equipment. Facility have been provided to control emission in the event of any tripping or kiln shut down condition.</p>	Stack attached to	Particulate matter emission in mg/Nm ³							April-17	May-17	June-17	Jul-17	Aug-17	Sept-17	Cement VRM-1 B/F	10.5	14.2	20.2	12.1	14.3	12.6	Cement VRM-2 B/F	14.2	21.6	22.9	12.5	13.7	13.2	Cement VRM-3 B/F	26.3	20.5	23.1	17.5	18.6	16.2	Kiln + VRM ESP	28.2	23.5	25.1	24.9	19.7	19.6	Cooler ESP	17.1	14.2	21.4	17.0	24.0	21.8	Coal Mill B/F	13.8	18.9	18.5	14.1	10.3	10.6	Cement Mill (1&2)B/F	Units were stopped						Cement Mill (3&4) Hybrid filter
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ii	Ambient Air Quality including ambient noise level must not exceed the standards stipulated under EPA/State authorities. Monitoring of ambient air quality and stack emission shall be carried out regularly in consultation with SPCB and report submitted to the Board quarterly and to the ministry (Regional office at Bhubaneswar) half yearly. Continuous stack monitoring system shall be installed.	<p>a. Complied.</p> <p>b. Monitoring of ambient air quality including ambient noise level are being carried out as per the standard stipulated. The data is given here under in Table A.ii.a.; correspondingly, the data on ambient noise level are shown in B. v under general condition.</p> <p>c. Continuous stack monitoring system has already been installed. On-line data through CEMS and CAAQMS are being transmitted to OSPCB/CPCB. Stack monitoring and Ambient air quality monitoring reports are submitted to SPCB in every month and half yearly basis to Regional office of MoEF&CC, Bhubaneswar.</p>											
Ambient air quality monitoring reports are as under::													
Table No. A.ii.a													
	Location of sampling station	SO ₂ (ug/m ³)	NOX (ug/m ³)	Particulate matter (size less than 10um) or PM10 (ug/m ³)	Particulate matter (size less than 2.5um) or PM2.5 (ug/m ³)	Ozone (o ₃) (ug/m ³)	Lead (Pb) (ug/m ³)	CO (mg/m ³)	Ammonia (nh ₃) (ug/m ³)	Benzene (C ₆ H ₆) (ug/m ³)	Benzo(a) Pyrene (BaP) – particulate phase only (ug/m ³)	Arsenic (AS) (ug/m ³)	Nickel (Ni) (ug/m ³)
	STORES BUILDING	<3.0	12.0	49.0	19.0	<19.6	<0.4	<0.1	23.0	<0.1	<0.1	<1.0	<5.0
	DTC BUILDING	<3.0	6.0	65.0	23.0	<19.6	<0.4	<0.1	21.0	<0.1	<0.1	<1.0	<5.0
	CANTEEN BUILDING	<3.0	<6.0	60.0	23.0	<19.6	<0.4	<0.1	<20.0	<0.1	<0.1	<1.0	<5.0
	LOCO GATE	<3.0	6.0	73.0	25.0	<19.6	<0.4	<0.1	20.0	<0.1	<0.1	<1.0	<5.0
iii	The company shall install adequate dust collection and extraction system to system to control fugitive dust emission at various transfer points. The dust collected from pollution control equipment shall be recycled back into the process. Water sprinkling arrangements shall be made to control the fugitive emissions in the raw material stockyard, unloading hoppers, and discharge gate at reclaims of soils and cement bag loading areas. Dust emission from bag filters and ESP shall not exceed 50mg/Nm ³ .	<p>a. Dust collection and extraction system by Bag filters are installed at various transfer points and equipped with proper recycling of dust, into the process.</p> <p>b. Water sprinkling arrangements are made at the raw material stockyard, unloading hoppers and at various discharge gates.</p> <p>c. Covered shed for Raw material storage has made.</p> <p>d. Belt conveyors are fully covered. Side covering sheets provided with proper dust collection and to prevent any fugitive emission.</p> <p>Stack emission from Bag filters and ESPs are well within the prescribed limit.</p>											

iv	The company shall undertake measures to reduce the pollution load by covering narrow gauge track to electrified meter/ broad gauge, and also to increase the rake size by adding higher capacity locomotives so that number of trips for transportation of limestone from Lanjiberna Mines to the cement plant shall not be increased.	<p>a. Narrow gauge track is no more on use for limestone transport.</p> <p>b. Entire transport of limestone from mine are being done through cross country belt conveyor.</p>																																				
v	The company shall use flyash up to 35% for manufacturing of Portland Pozzolana cement	Complied.																																				
vi	The company shall undertake water conservation measures by recycling of waste water after treatment and utilization of 100% of waste heat in VRM , Coal mill and CVRMs to reduce water consumption and replacement of water- cooling machines by air-cooling machines	<p>a. Measures have been taken to recycle 100% waste water, after treatment. Waste water after treatment is used for machines cooling, hot material and spraying inside VRM and CVRMs.</p> <p>b. At all times, the heat requirement of VRM, Coal Mill and CVRMs is met from recoverable waste heat. Action already been taken to replace existing water cooled reciprocating compressors by air cooled screw compressors. Installation of GRR (Air cooling machine) in place of LRR (Water cooling machine) of PH fan was made.</p>																																				
vii	The company shall developed green belt in an area 44.39 ha. Central pollution Control board guidelines must be followed in planning and developing green belt and selection of species etc.	<p>Green belt cover has already been developed in 44.39 ha. In addition, company has also taken up plantation campaign outside plant area by distributing saplings to nearby villagers free of cost and ensuring that the saplings are planted. Total area covered under green belt is in & around is 97 ha., Statistical data is given here under:</p> <table border="1" data-bbox="1048 970 2134 1409"> <thead> <tr> <th colspan="3">DETAILS OF YEAR WISE PLANTATION (CUMULATIVE STATUS)</th> </tr> <tr> <th>YEAR</th> <th>NO. TREES PLANTED</th> <th>REMARKS</th> </tr> </thead> <tbody> <tr> <td>Up to march,2007-08</td> <td>148655</td> <td>Plantation & sapling distributed</td> </tr> <tr> <td>2008-2009</td> <td>155155</td> <td>2300</td> </tr> <tr> <td>2009-2010</td> <td>162401</td> <td>4800</td> </tr> <tr> <td>2010-2011</td> <td>171757</td> <td>6964</td> </tr> <tr> <td>2011-2012</td> <td>177957</td> <td>9964</td> </tr> <tr> <td>2012-2013</td> <td>183957</td> <td>14164</td> </tr> <tr> <td>2013-2014</td> <td>190246</td> <td>19664</td> </tr> <tr> <td>2014-2015</td> <td>196660</td> <td>27664</td> </tr> <tr> <td>2015-2016</td> <td>203892</td> <td>92664</td> </tr> <tr> <td>2016-2017 (till Sept'17)</td> <td>220900</td> <td>138922</td> </tr> </tbody> </table>	DETAILS OF YEAR WISE PLANTATION (CUMULATIVE STATUS)			YEAR	NO. TREES PLANTED	REMARKS	Up to march,2007-08	148655	Plantation & sapling distributed	2008-2009	155155	2300	2009-2010	162401	4800	2010-2011	171757	6964	2011-2012	177957	9964	2012-2013	183957	14164	2013-2014	190246	19664	2014-2015	196660	27664	2015-2016	203892	92664	2016-2017 (till Sept'17)	220900	138922
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viii	No discharge of treated effluent shall be done outside the premises and all treated effluent (STP) should be utilized for green belt development and other plant related activities.	There is no discharge of any effluent outside the premises of the company. All treated effluent of STP is being utilized for green belt development and other plant related activities.
ix	The company must harvest the rain water from the rooftops and storm water drains to recharge ground water.	<p>Following rain water harvesting projects are existing</p> <p>a. Rain water harvesting from storm water have been undertaken inside plant and near CPP.</p> <p>b. Roof top rain water-harvesting has been completed in colony under guidance of the Office of Hydrologist, Ground Water Survey & Investigation Division (GoO), Sambalpur.</p> <p>c. Rain water harvesting projects from the roof top of raw material shed inside the plant is also being carried out.</p>

B. GENERAL CONDITION

Sl. No.	Description of conditions	Compliance Status
i	The project authority must adhere to the stipulation made by Orissa state pollution control board and state government.	All condition laid by Orissa state pollution control board is strictly abiding to all stipulations.
ii	No further expansion or modification of the plant should be carried out without prior approval of this ministry.	No expansion or modification have been made in the process (within production limit). However, to retrofit with Bag filters in VRM+Kiln section, by replacing existing ESP for additional pollution control measure to meet the new emission norms and action plan submitted under Sec.5 of E.P.Act, 1986 to comply the same.
iii	At least four ambient air quality- monitoring station should be established in the downward direction as well as where maximum ground level concentration of SPM, SO ₂ and NO _X are anticipated in consultation with the Orissa State pollution Control Board. Data on ambient air quality and stack emission should be regularly submitted to this ministry including regional Office at Bhubaneswar and the State Pollution Control board / Central Pollution Control Board once in six months.	<p>a. Four numbers of ambient air quality monitoring stations are installed as per SPCB guideline, which are shown in the Table A.ii.a</p> <p>b. Data on ambient air quality and stack emission is regularly been submitted to SPCB/CPCB and MoEF&CC.</p> <p>c. Online CEMS & CAAQM data transmission carried out and submitted to SPCB & CPCB.</p>

iv	Industrial wastewater shall be properly collected, treated so as to conform to the standards prescribed under GSR 422 (I) dated 19 th May 1993 and 31 st December 1993 or as amended from time to time. The treated waste water should be utilized for plantation.	<p>a. Waste water generated in the plant is being treated in the effluent treatment plant (ETP). The last analysis report of ETP outlet is given here under. Date of sampling:- 19.08.2017 (Copy enclosed)</p> <table border="1" data-bbox="1010 357 1962 603"> <thead> <tr> <th>Sl. No.</th> <th>parameter</th> <th>Result of ETP outlet treated water</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>PH value</td> <td>7.3</td> </tr> <tr> <td>2</td> <td>Total suspended solids (mg/l)</td> <td>5.5</td> </tr> <tr> <td>3</td> <td>B.O.D (mg/l)</td> <td>04</td> </tr> <tr> <td>4</td> <td>C.O.D (mg/l)</td> <td>11.4</td> </tr> <tr> <td>5</td> <td>Oil & Grease (mg/l)</td> <td>0.1</td> </tr> </tbody> </table> <p>b. The colony effluent is treated in STP & treated water is used for plantation & greenery.</p>	Sl. No.	parameter	Result of ETP outlet treated water	1	PH value	7.3	2	Total suspended solids (mg/l)	5.5	3	B.O.D (mg/l)	04	4	C.O.D (mg/l)	11.4	5	Oil & Grease (mg/l)	0.1					
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v	The overall noise levels in and around the plant area shall be kept well within the standards (85dB) by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise levels should conform to the standards prescribed under Environmental (Protection) Act 1986 Rules, 1989 viz 75 dB (day time) and 70 dB (night time).	<p>a. Noise level are within the prescribed standards. b. Ambient noise monitored data is given here under in the table B.v.a.1</p> <table border="1" data-bbox="1010 772 2116 1011"> <thead> <tr> <th rowspan="2">Particulars</th> <th colspan="5">Sampling locations</th> </tr> <tr> <th>Store building</th> <th>DITIC building</th> <th>LOCO gate</th> <th>Near Canteen</th> <th>OCL Colony</th> </tr> </thead> <tbody> <tr> <td>Noise level(L. day) during day time</td> <td>60.5</td> <td>69.8</td> <td>68.8</td> <td>57.6</td> <td>55.5</td> </tr> <tr> <td>Noise level (L night) during night time</td> <td>52.4</td> <td>53.6</td> <td>52.5</td> <td>51.3</td> <td>47.6</td> </tr> </tbody> </table>	Particulars	Sampling locations					Store building	DITIC building	LOCO gate	Near Canteen	OCL Colony	Noise level(L. day) during day time	60.5	69.8	68.8	57.6	55.5	Noise level (L night) during night time	52.4	53.6	52.5	51.3	47.6
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vi	Proper housekeeping and adequate occupational health programme must be taken up. Occupational Health Surveillance programme should be done on a regular basis and records maintained. The programme must include lung function and sputum analysis tests once in six month.	Proper housekeeping is being carried out. Occupational health surveillance programme is regularly being carried out. The occupational health checkup covers lung function and sputum analysis tests and records are maintained.																							
vii	The project proponent shall comply with all the environmental protection measures and safeguards recommended in the Environmental Impact Assessment / Environmental Management Plan.	Fully complied.																							
viii	A separate environmental management cell with full-fledged laboratory facilities to carry out various management and monitoring functions should be set up under control of Senior Executive.	Separate Environment Management Cell (EMC) already exists and taking care of Environmental management plant, Environmental monitoring & compliance. The EMC is under control of Senior Executive																							

ix	The project authority will provided separate funds for both recurring and non-recurring to implement the conditions stipulated by the ministry of Environment and forest as well as the State Government along with the implementation schedule for all the conditions stipulated herein. The funds so provided should not be diverted for any purposes.	A separate budget made to implement the air pollution control measures and regular implementation towards pollution control systems is in continuous progress.
x	The Regional Office of this Ministry at Bhubaneswar/Central Pollution Control Board/State pollution Control Board will monitor the stipulated conditions. A six monthly compliance report and the monitored data along with statistical interpretation should be submitted to them regularly.	Six monthly compliance report along with monitored data (through SPCB em-paneled agency as well as by Online system of CEMS & CAAQMS) are being submitted regularly.
xi	The Project Authority shall inform the regional Office as well as the Ministry, the data of financial closure and final approval of the project by the concerned authorities and the data of commencing the land development work.	Complied
xii	The Project proponent shall inform the public that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with State Pollution Control Board/Committee and may also be seen at website of the Ministry of Environment and Forest at http://envfor.nic.in . This should be advertised wit in seven days from the date of issue of clearance letter at least two local newspaper that are widely circulated in the region of which one shall be in the vernacular language of the locality concerned and a copy the same shall be forwarded to the Regional office.	Complied

ENVIRONMENTAL MONITORING REPORT

BASED ON DATA GENERATED

FROM

APRIL 2017 – SEPTEMBER 2017

FOR

OCL INDIA LIMITED

At/Po: RAJGANGPUR, District: SUNDARGARH, ODISHA

AT

CEMENT PLANT, LINE – 1 & LINE - 2

Prepared By:

Cleenviron Private Limited

D-124, KOELNAGAR, ROURKELA, ODISHA

Tele fax: 0661 – 2475746

Email: cleenviron@gmail.com

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1. INTRODUCTION

OCL is currently manufacturing Ordinary Portland Cement (OPC) of various grades including grade 53S specially meant for concrete sleepers for railways, Portland Slag Cement (PSC), flyash based Portland Pozzolana Cement (PPC), Sulphate Resistant Portland Cement (SRPC) and Oil well cement. The main raw materials used for manufacturing of various types of cement are Clinker, Slag, Flyash and Gypsum. Clinker is the main raw material, which is produced by sintering limestone along with other additives like clay, morrum, char, cinder etc. Coal is used as fuel for burning the limestone in kiln.

Cement Division of OCL India Limited (OCL) is currently operating a cement plant located at Rajgangpur in Sundargarh district of Odisha state. The existing plant has production capacity of 2.9 million tonnes clinker per annum and cement manufacturing capacity 4 million tonnes cement per annum.

The limestone requirement for the proposed expansion is proposed to be met by the increased production from the existing captive mines at Lanjiberna.

2. LOCATION AND ACCESSIBILITY

The proposed site is well within the existing factory premises of OCL at Rajgangpur and has the following coordinates (as per Survey of India toposheet no. 73 B/12, scale 1:50000):

- Latitude : 22° 12' N
- Longitude : 84° 35' E

The area covered by OCL comes under Rajgangpur village of Tehsil Rajgangpur, district Sundargarh. The general elevation of land is about 250 m above mean sea level. Accessibility to the site is as per details given below:

Road

The plant is located about 43 km from Rourkela on Rourkela-Sambalpur state highway (SH-10).

Rail

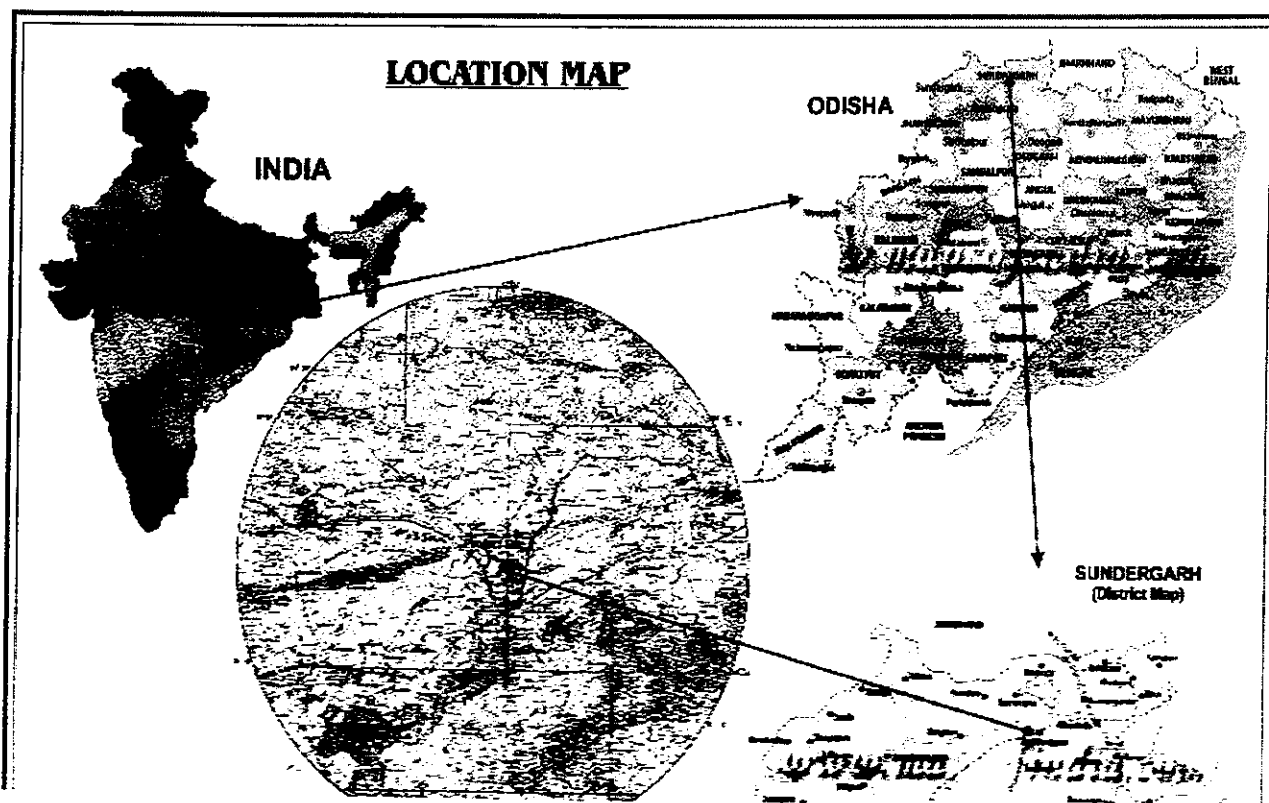
The nearest railway station is at Rajgangpur, which is about 2 km from the plant site and is located on the Howrah-Mumbai section of South Eastern Railway.

Air

The nearest airport is at Kolkatta, which is about 450 km from plant site and well connected by rail and road.

The location of the project site is depicted as in **Figure1.1**

Figure No: 1.1



OCL has affianced *Cleenviron Private Limited (NABL accredited Laboratory)*, Rourkela, Odisha, to carry out periodical environmental monitoring and to prepare Environment monitoring report. The study has been carried out as per the guidelines of Ministry of Environment & Forests (MOEF) and State Pollution Control Board, Odisha (SPCB).

3. ASPECTS CONSIDERED FOR ENVIRONMENTAL MONITORING

This report is based on the monitoring results generated from April 2017 to September 2017 covering post-monsoon and winter seasons of the year. Ambient Air Quality and Stack Emission monitoring was carried out on Quarterly once basis.

- i. Micro-meteorological Monitoring

- ii. Ambient Air Quality Monitoring
- iii. Stack Emission Monitoring

Monitoring of environmental parameters for collection of data involves field work, which is described below:

3.1 Micro-meteorological Study

For collection of micro-meteorological data like Temperature, Relative Humidity, Wind Speed, Wind Direction, & Rainfall, a weather monitoring station is fixed on the Magazine Hill Top of Lanjiberna Limestone and Dolomite Mines of M/s OCL India Ltd. Hourly data is being recorded continuously by putting up windows compatible data logging facility instrument, Make: Virtual Electronics Company, Roorkee.

3.2 Ambient Air Monitoring

To assess ambient air quality, total 7 (seven) monitoring stations are fixed including 5 (five) in the Line - 1 and 2 (two) in the Line - 2. The monitoring locations are fixed according to the micro-meteorological data and in consultation with State Pollution Control Board. The monitoring was carried out for parameters like PM2.5, PM10, SO₂, NO_x, NH₃, O₃, CO, As, Ni, Pb, Benzene & Benzo(a)pyrene and monitoring was carried out once during three months from each location. For collection of samples Respirable Dust sampler with PM2.5 attachment was placed at each location, sampling and analytical techniques are followed as per the standard methods of ambient air sampling and analysis.

3.3 Stack Emission Monitoring

The essential units of the cement plant are equipped with pollution control equipments. To assess the emission level of Particulate Matter from the stacks of different units, monitoring of Stack emission levels were scheduled on quarterly once basis. Particulate Matter emission was monitored following the BIS methods for Stack monitoring.

4. SAMPLING LOCATIONS

4.1 Micro-Meteorological Study

One meteorological station was set up on the Magazine Hill Top of the Lanjiberna Limestone & Dolomite Mines to monitor wind speed, wind direction, temperature, relative humidity and rainfall on hourly basis by data logging technique. The station is at an aerial distance of around 8 kms from the project site.

4.2 Ambient Air Quality Monitoring

Five ambient air quality monitoring stations are fixed within the Line -1 and two stations are fixed in the Line – 2 area. General precautions were taken to position the Respirable Dust Samplers at all the locations. The descriptions of the Ambient Air Monitoring Stations are as follows:

A-1 Stores Building (Line – 1):

The sampling station is located within the Plant site and the station was selected to assess the present level of pollution due to the general unit operations of the Line - 1.

A-2 DITC Building Near Line - 2:

This location is nearer to the Line – 2 operational area. This was selected to assess the air quality in and around the Line – 2 unit operations.

A-3 Near Canteen Building (Line – 1):

The sampling station is located within the Plant site and the station was selected to assess the present level of pollution due to the general unit operations of the Line - 1.

A-4 Near Loco Gate (Line – 1):

The sampling station is located within the Plant site and the station was selected to assess the present level of pollution due to the general unit operations of the Line - 1.

A-5 CCR Building (Line – 1):

The sampling station is located within the Plant site and the station was selected to assess the present level of pollution due to the general unit operations of the Line - 1.

A-6 Workshop Building (Line – 1):

The sampling station is located within the Plant site and the station was selected to assess the present level of pollution due to the general unit operations of the Line - 1.

A-7 Near Water Harvesting Area of CPP (Line – 2):

This location is within the Line – 2 operational area. This was selected to assess the air quality in and around the Line – 2 unit operations.

4.3 Stack Emission Monitoring:

The stack of the different units of the Cement plant like, VRM – Line – 1, CVRM – 1, CVRM – 2, CVRM – 3, RABH Line – 2, Bolier – 1, Boiler – 2, Coal Mill Line – 1, Coal Mill Line – 2, Cooler Line – 2, were carried out for parameters like, Particulate Matter, Sulphur Dioxide and Nitrogen Oxides emission levels.

5. METHODOLOGY OF SAMPLING & ANALYTICAL PROCEDURES**5.1 Meteorological Study**

For recording various meteorological parameters like, Temperature, RH, Wind Speed, Wind Direction & Rainfall, a weather monitoring station, Make: Virtual Electronics Company, Roorkee was installed at the site. The instrument is equipped with windows based data logging software to store each data on hourly basis, which can be further down loaded to a PC and data can be interpreted as per the requirement of the report.

5.2 Ambient Air Monitoring

Air quality samples were monitored for all parameters as per NAAQS. For sampling and analysis, methods prescribed by CPCB were followed and Respirable Dust Samplers (RDS) APM 460BL – 411TE, Make: Envirotech Instruments Pvt. Ltd. were used and for PM_{2.5} sampling AAS 190 attachment for fine particulate sampling along with RDS was used where ever necessary at the site.

5.3 Stack Monitoring

Stack monitoring were carried out once in every three months from the bag filter and ESP outlet stacks of the units mentioned and the Indian standard methods for monitoring of Stack emission was followed for collecting the sample and the concentration of Particulate Matter were calculated by following the standard methods.

For collection of sample Ecotech Instruments make Stack sampler Model: ESS -100 was used at the site.

6. DATA ANALYSIS

6.1 Micro-meteorological Study:

6.1.1 Wind Speed & Wind Direction

During the entire period from 1st April to 30th September all total 4387 no. of data are recorded by the instrument and after interpretation of the collected data it was found that Calm condition prevailed over 38.55%, while considering the 24 hourly data. 29.14% calm condition prevailed from morning 6 hrs to 14hrs for the entire study period, 41.45% calm condition prevailed from 14hrs to 22hrs and 46.26% calm condition prevailed from 22hrs to 06hrs. The predominant wind directions were from East, SE & NW with average wind speed 1.48 m/sec. The wind rose diagram for the entire study period are depicted on the **Figure No: 6.1, 6.2, 6.3 & 6.4.**

6.1.2 Temperature

The maximum & minimum temperature during the entire study period were divided in to two parts as the study period was covering summer as well as monsoon seasons. The Minimum temperature during the summer season was found to be 22.8°C and the Maximum temperature was found to be 45.3°C up to the end of 30th June.

The minimum and maximum temperature during the monsoon season i.e. from July to September was found to be 20.8°C and 36.3°C. **Table No 6.1** shows a summary of micro-meteorological data collected for the entire period.

6.1.3 Rainfall

The total rain fall from 1st April to 30th September was observed to be 679.6 mm. during the study period. A month wise rainfall data recorded at the site is depicted in **Table No 6.1.**

Table No: 6.1
A Summary of the Micro-meteorological Data

Project Site : Lanjiberna Limestone & Dolomite Mines
Location : Magazine Hill Top

Sl No	Parameters	From April – September 2017
1	Predominant Wind Direction	From East, SE & NW
2	Calm Condition %	38.55
3	Average Wind Speed m/sec	1.48
4	Temperature °C	
	Summer Season	
	Minimum	22.84
	Maximum	45.31
	Monsoon Season	
	Minimum	20.8
	Maximum	36.3
5	Rain Fall in mm	
	April	2.4

SI No	Parameters	From April – September 2017
	May	18.2
	June	157.2
	July	250.6
	August	148.6
	September	102.6
	Total	679.6

Figure No: 6.1 Wind Rose Diagram for 24 Hours

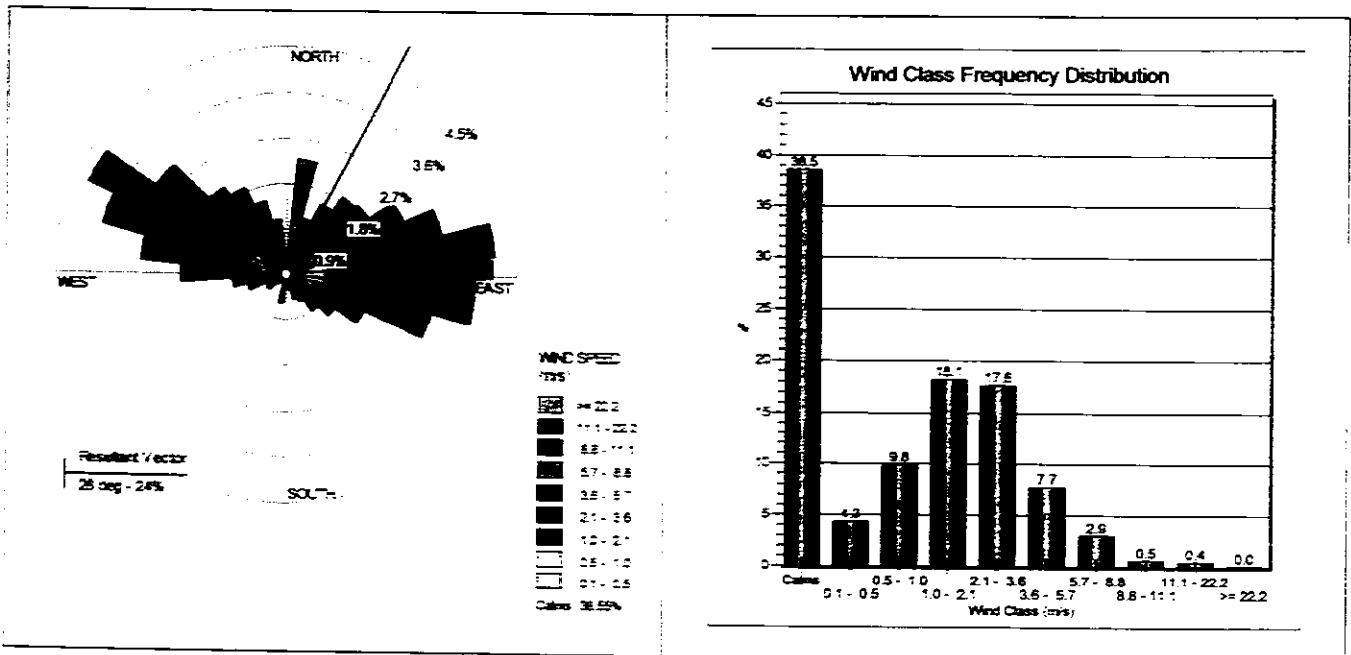


Figure No: 6.2 Wind Rose Diagram from 06 – 14 Hours

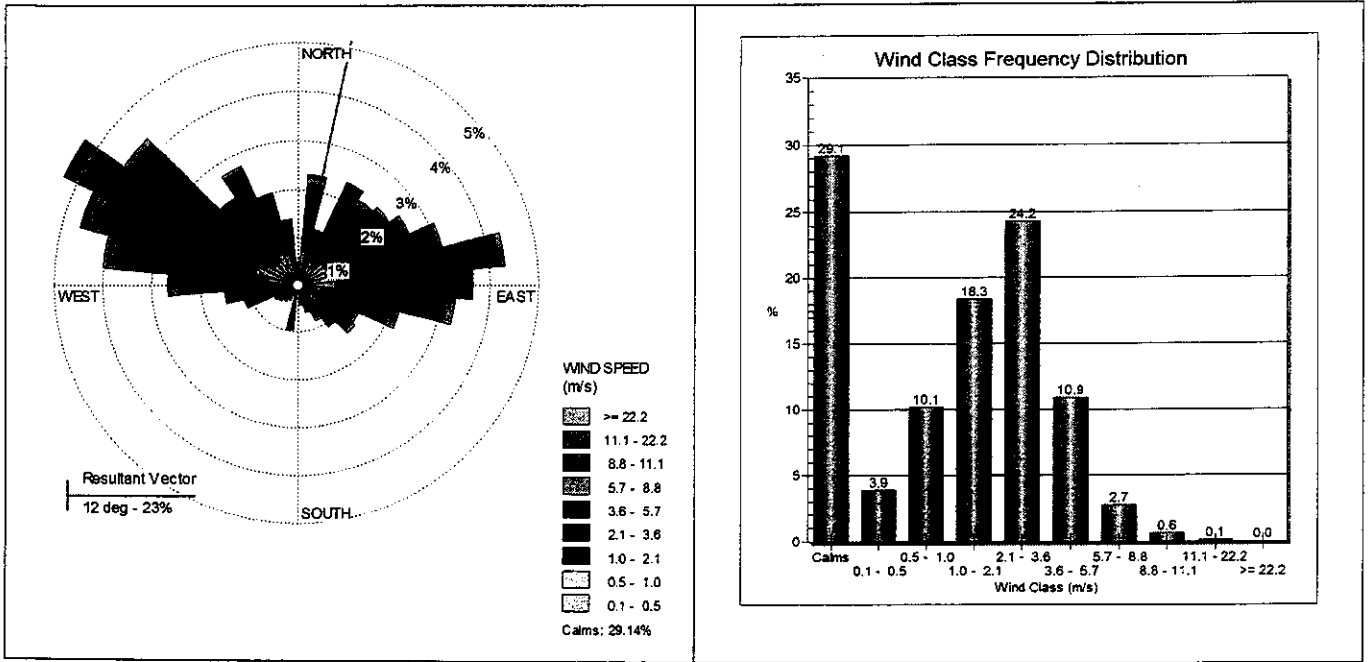


Figure No: 6.3 Wind Rose Diagram from 14 – 22 Hours

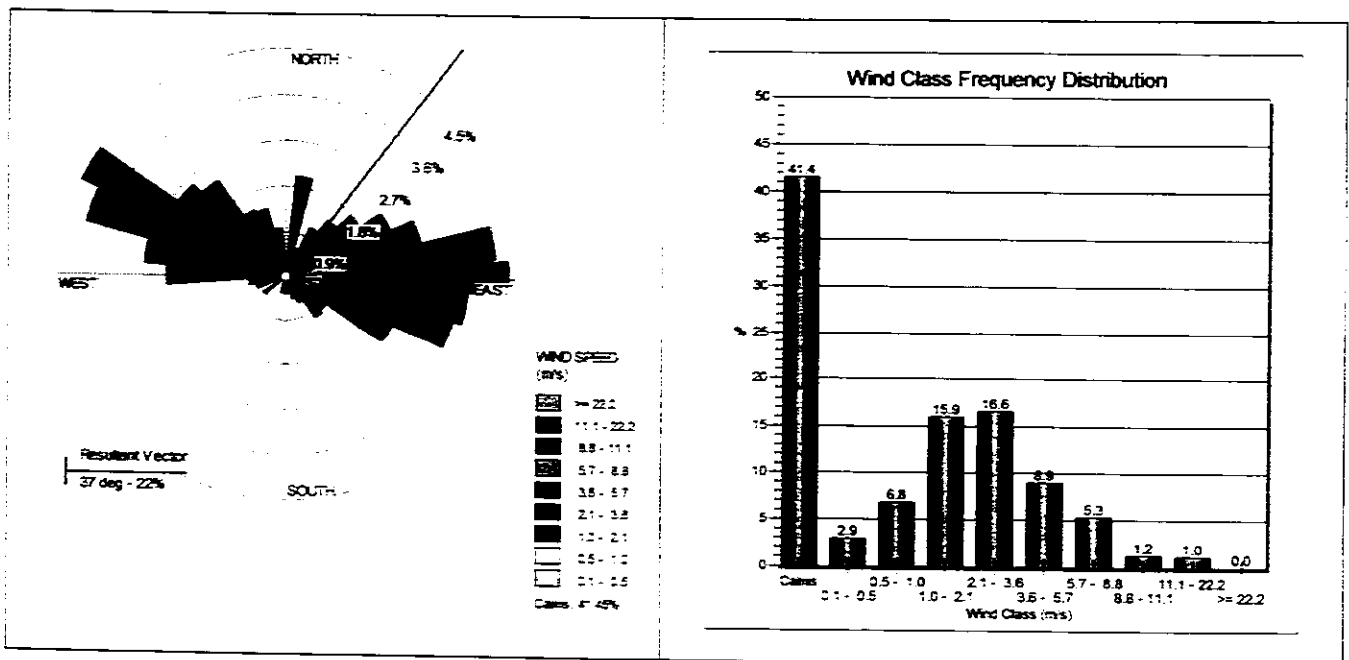


Figure No: 6.4 Wind Rose Diagram from 22 – 06 Hours

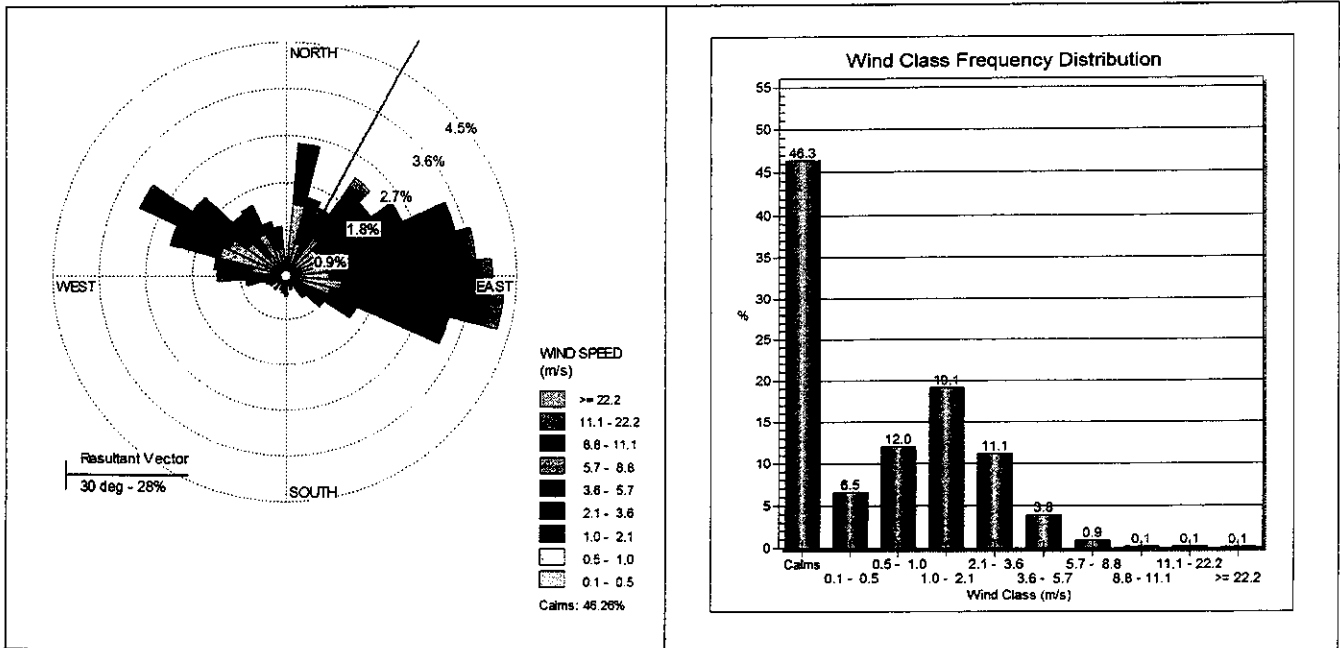


Table No: 6.2
AMBIENT AIR QUALITY DATA
 From 01.04.2017 to 30.09.2017
 Station: A-1 Stores Building (Line - 1)

Date	PM2.5	PM10	SO ₂	NO _x
28.06.2017	30	90	03	12
13.09.2017	19	49	< 3	12

Table No: 6.2A

Sl No	Date of Sampling	Parameters							
		NH ₃	O ₃	Lead (Pb)	Arsenic (As)	Nickel (Ni)	Benzen e (C ₆ H ₆)	Carbon Monoxide (CO)	Benzo(a)pyrene (BaP) - Particulate Phase
		µg/m ³	µg/m ³	µg/m ³	ng/m ³	ng/m ³	µg/m ³	mg/m ³	ng/m ³
		APWA 3 rd Ed. Method - 401	APWA 3 rd Ed. Method - 411	APWA 3 rd Ed. Method - 822	APWA 3 rd Ed. Method - 804	APWA 3 rd Ed. Method - 822	IS 5182 (Part - 11)	Electro-chemical Sensor	IS 5182 (Part - 12)
1.	28.06.2017	< 20	< 19.6	< 0.4	< 1.0	< 5.0	< 0.1	< 0.1	< 0.1
2.	13.09.2017	23	< 19.6	< 0.4	< 1.0	< 5.0	< 0.1	< 0.1	< 0.1

Table No: 6.3
AMBIENT AIR QUALITY DATA
 From 01.04.2017 to 30.09.2017
 Station: A-2 DITC Building Near Line - 2

Date	PM2.5	PM10	SO ₂	NO _x
30.06.2017	21	82	< 3	< 6
16.09.2017	23	65	< 3	06

Table No: 6.3A

Sl No	Date of Sampling	Parameters							
		NH ₃	O ₃	Lead (Pb)	Arsenic (As)	Nickel (Ni)	Benzen e (C ₆ H ₆)	Carbon Monoxide (CO)	Benzo(a)pyrene (BaP) – Particulate Phase
Units		µg/m ³	µg/m ³	µg/m ³	ng/m ³	ng/m ³	µg/m ³	mg/m ³	ng/m ³
Method of Analysis		APWA 3 rd Ed. Method – 401	APWA 3 rd Ed. Method – 411	APWA 3 rd Ed. Method – 822	APWA 3 rd Ed. Method – 804	APWA 3 rd Ed. Method – 822	IS 5182 (Part – 11)	Electro-chemical Sensor	IS 5182 (Part – 12)
1.	30.06.2017	< 20	< 19.6	< 0.4	< 1.0	< 5.0	< 0.1	0.60	< 0.1
2.	16.09.2017	21	< 19.6	< 0.4	< 1.0	< 5.0	< 0.1	< 0.1	< 0.1

Table No: 6.4
AMBIENT AIR QUALITY DATA
 From 01.04.2017 to 30.09.2017
 Station: A-3 Near Canteen Building (Line – 1)

Date	PM2.5	PM10	SO ₂	NO _x
28.06.2017	33	80	03	12
14.09.2017	23	60	< 3	< 6

Table No: 6.4A

Sl No	Date of Sampling	Parameters							
		NH ₃	O ₃	Lead (Pb)	Arsenic (As)	Nickel (Ni)	Benzen e (C ₆ H ₆)	Carbon Monoxide (CO)	Benzo(a)pyrene (BaP) – Particulate Phase
Units		µg/m ³	µg/m ³	µg/m ³	ng/m ³	ng/m ³	µg/m ³	mg/m ³	ng/m ³
Method of Analysis		APWA 3 rd Ed. Method - 401	APWA 3 rd Ed. Method – 411	APWA 3 rd Ed. Method – 822	APWA 3 rd Ed. Method – 804	APWA 3 rd Ed. Method - 822	IS 5182 (Part – 11)	Electro-chemical Sensor	IS 5182 (Part – 12)
1.	28.06.2017	< 20	< 19.6	< 0.40	< 1.0	< 5.0	< 0.1	< 0.1	< 0.1
2.	14.09.2017	< 20	< 19.6	< 0.40	< 1.0	< 5.0	< 0.1	< 0.1	< 0.1

Table No: 6.5
AMBIENT AIR QUALITY DATA
 From 01.04.2017 to 30.09.2017

Station: A-4 Near Loco Gate (Line – 1)

Date	PM2.5	PM10	SO ₂	NOx
28.06.2017	33	78	03	09
14.09.2017	25	73	< 3	06

Table No: 6.5A

Sl No	Date of Sampling	Parameters							
		NH ₃	O ₃	Lead (Pb)	Arsenic (As)	Nickel (Ni)	Benzen e (C ₆ H ₆)	Carbon Monoxide (CO)	Benzo(a)pyrene (BaP) – Particulate Phase
Units		µg/m ³	µg/m ³	µg/m ³	ng/m ³	ng/m ³	µg/m ³	mg/m ³	ng/m ³
Method of Analysis		APWA 3 rd Ed. Method - 401	APWA 3 rd Ed. Method - 411	APWA 3 rd Ed. Method - 822	APWA 3 rd Ed. Method - 804	APWA 3 rd Ed. Method - 822	IS 5182 (Part - 11)	Electro-chemical Sensor	IS 5182 (Part - 12)
1.	28.06.2017	< 20	< 19.6	< 0.4	< 1.0	< 5.0	< 0.1	< 0.1	< 0.1
2.	14.09.2017	20	< 19.6	< 0.4	< 1.0	< 5.0	< 0.1	< 0.1	< 0.1

Table No: 6.6
AMBIENT AIR QUALITY DATA
 From 01.04.2017 to 30.09.2017
 Station: A-5 CCR Building (Line – 1)

Date	PM2.5	PM10	SO ₂	NOx
29.06.2017	34	79	< 3	22
15.09.2017	23	76	< 3	< 6

Table No: 6.6A

Sl No	Date of Sampling	Parameters							
		NH ₃	O ₃	Lead (Pb)	Arsenic (As)	Nickel (Ni)	Benzen e (C ₆ H ₆)	Carbon Monoxide (CO)	Benzo(a)pyrene (BaP) – Particulate Phase
Units		µg/m ³	µg/m ³	µg/m ³	ng/m ³	ng/m ³	µg/m ³	mg/m ³	ng/m ³
Method of Analysis		APWA 3 rd Ed. Method - 401	APWA 3 rd Ed. Method - 411	APWA 3 rd Ed. Method - 822	APWA 3 rd Ed. Method - 804	APWA 3 rd Ed. Method - 822	IS 5182 (Part - 11)	Electro-chemical Sensor	IS 5182 (Part - 12)
1.	29.06.2017	< 20	< 19.6	< 0.4	< 1.0	< 5.0	< 0.1	< 0.1	< 0.1

2.	15.09.2017	< 20	< 19.6	< 0.4	< 1.0	< 5.0	< 0.1	< 0.1	< 0.1
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Table No: 6.7
AMBIENT AIR QUALITY DATA
 From 01.04.2017 to 30.09.2017
 Station: A-6 Workshop Building (Line – 1)

Date	PM2.5	PM10	SO ₂	NOx
29.06.2017	25	70	03	25
15.09.2017	22	59	< 3	08

Table No: 6.7A

Sl No	Date of Sampling	Parameters							
		NH ₃	O ₃	Lead (Pb)	Arsenic (As)	Nickel (Ni)	Benzen e (C ₆ H ₆)	Carbon Monoxide (CO)	Benzo(a)pyrene (BaP) – Particulate Phase
Units		µg/m ³	µg/m ³	µg/m ³	ng/m ³	ng/m ³	µg/m ³	mg/m ³	ng/m ³
Method of Analysis		APWA 3 rd Ed. Method - 401	APWA 3 rd Ed. Method - 411	APWA 3 rd Ed. Method - 822	APWA 3 rd Ed. Method - 804	APWA 3 rd Ed. Method - 822	IS 5182 (Part - 11)	Electro-chemical Sensor	IS 5182 (Part - 12)
1.	29.06.2017	< 20	< 19.6	< 0.4	< 1.0	< 5.0	< 0.1	< 0.1	< 0.1
2.	15.09.2017	< 20	< 19.6	< 0.4	< 1.0	< 5.0	< 0.1	< 0.1	< 0.1

Table No: 6.8
AMBIENT AIR QUALITY DATA
 From 01.04.2017 to 30.09.2017
 Station: A-7 Near Water Harvesting Area of CPP (Line – 2)

Date	PM2.5	PM10	SO ₂	NOx
29.06.2017	39	82	< 3	47
15.09.2017	25	73	< 3	06

Table No: 6.8A

Sl No	Date of Sampling	Parameters							
		NH ₃	O ₃	Lead (Pb)	Arsenic (As)	Nickel (Ni)	Benzen e (C ₆ H ₆)	Carbon Monoxide (CO)	Benzo(a)pyrene (BaP) – Particulate Phase

Units		$\mu\text{g}/\text{m}^3$	$\mu\text{g}/\text{m}^3$	$\mu\text{g}/\text{m}^3$	ng/m^3	ng/m^3	$\mu\text{g}/\text{m}^3$	mg/m^3	ng/m^3
Method of Analysis		APWA 3 rd Ed. Method - 401	APWA 3 rd Ed. Method - 411	APWA 3 rd Ed. Method - 822	APWA 3 rd Ed. Method - 804	APWA 3 rd Ed. Method - 822	IS 5182 (Part - 11)	Electro-chemical Sensor	IS 5182 (Part - 12)
1.	29.06.2017	32	< 19.6	< 0.4	< 1.0	< 5.0	< 0.1	< 0.1	< 0.1
2.	15.09.2017	< 20	< 19.6	< 0.4	< 1.0	< 5.0	< 0.1	< 0.1	< 0.1

6.2 Stack Emission Monitoring

The Quarterly monitoring results of stack emission from the different units of the Cement Plant are given below:

Table No 6.9: Stack Emission Monitoring Results

SI No	Location	Particulate Matter Concentration in mg/Nm^3	
		June 2017	September 2017
1	Coal Mill, Line - 2	10	08
2	RABH Kiln, Line - 2	15	06
3	Cooler, Line - 2	23	16
4	CVRM - 2, Line - 1	17	07
5	CVRM - 3, Line - 1	25	07
6	CVRM - 1, Line - 1	16	03
7	Boiler - 2 Outlet ESP	25	07
8	Boiler - 1 Outlet ESP	21	27
9	VRM, Line - 1	28	26
10	Coal Mill, Line - 1	07	06
11	Cooler, Line - 1	13	04

7. CONCLUSION

7.1 Ambient Air Quality

It is concluded from the above study that the overall ambient air quality of the Cement Plant, both Line -1 and Line - 2 of OCL India Ltd. is good and the action taken by the plant authority were quite satisfactory.

7.2 Stack Emission Monitoring

The stack emission monitoring results of all control equipments monitored is very much effective and results are all within the prescribed standards by the State Pollution Control Board, Odisha.



Cleenviron Private Limited

OPCB Empanelled Consultant and Engineers in Environmental Pollution Control & Monitoring with Accredited Laboratory.

TEST REPORT FOR EFFLUENT WATER QUALITY ANALYSIS

FORMAT NO: CPL/FM/46

REPORT NO: CPL/REW/AUG-17/9

REPORT ISSUE DATE: 19.08.2017

SAMPLE DRAWN BY CLEENVIRON PRIVATE LIMITED

Name of the Customer : **OCL INDIA LIMITED**
 Address of the Customer : At/Po: Rajgangpur – 770017, Dist: Sundargarh, Odisha
 Sample ID No : **CPL/REW/AUG-17/6**
 Sample Description : Effluent Water
 Date of Sampling : 08.08.2017
 Location of Sampling : ETP Outlet
 Sampling Method : APHA 22ND Edition, 1060
 Sampling Deviation (if any) : Nil
 Condition of Sample while receipt : Sealed
 Appearance of Sample while receipt : Clear
 Type of Container used for sampling : Narrow Mouth Plastic & Wide Mouth Glass Bottles
 Sample Received on : 08.08.2017
 Date of Test : 08.08.2017 – 16.08.2017

Sl No	Parameters	Method of Analysis	Results Obtained	Unit	Permissible Limit as per EPA 1986 and as amended for Effluent Discharged into Inland Surface Water
	pH Value	APHA 22 nd Edition, 4500 H+B	7.33	-	5.5 – 9.0
	Turbidity	APHA 22 nd Edition, 2130 B	8.4	NTU	-
	Total Suspended Solids	APHA 22 nd Edition, 2540 D	5.48	mg/l	100
	Total Dissolved Solids	APHA 22 nd Edition, 2540 B	682	mg/l	-
	Oil & Grease	APHA 22 nd Edition, 5520 B	0.1	mg/l	10
	BOD 5days at 20°C	APHA 22 nd Edition, 5210 D	04	mg/l	30
	Chemical Oxygen Demand	APHA 22 nd Edition, 5220 D	11.388	mg/l	250
	Total Chromium (as Cr)	APHA 22 nd Edition, 3111 B	0.35	mg/l	2.0
	Hexavalent Chromium (as Cr ⁶⁺)	APHA 22 nd Edition, 3500 Cr B	0.1544	mg/l	0.1
	Iron (as Fe)	APHA 22 nd Edition, 3500 Fe B	0.62	mg/l	3.0
	Phenolic Compounds (as C ₆ H ₅ CH)	MERCK	0.1758	mg/l	1.0
	Reactive Silica (as SiO ₂)	MERCK	12.5462	mg/l	-
	Ammonical Nitrogen (as NH ₄ – N)	MERCK	0.0107	mg/l	5
	Total Nitrogen (as N)	MERCK	0.0957	mg/l	10
	Fecal Coliform	RAKIRO	10 ²	Nos/ml	100

Subhanga Praharaj
 Managing Director/QM

Verified By



Test Done By

*****END OF TEST REPORT*****

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Cleenviron Private Limited

OPCB Empanelled Consultant and Engineers in Environmental Pollution Control & Monitoring with Accredited Laboratory.

TEST REPORT FOR STACK EMISSION MONITORING

FORMAT NO: CPL/FM42

REPORT ISSUE DATE: 20.09.2017

REPORT NO: CPL/R/SE/SEPT-17/31

SAMPLE DRAWN BY CLEENVIRON PRIVATE LIMITED

Name of the Customer :
 Address of the Customer :
 Sample ID No :
 Name of Stack Monitored :
 Stack Connected To :
 Shape of Stack :
 Date of Sampling :
 Time of Sampling :
 Method of Sampling :
 Sample Received on :
 Date of Test :

OCL INDIA LIMITED
 CEMENT DIVISION, AT/PO: RAJGANGPUR - 770017, SUNDARGARH, ODISHA
CPL/SE/SEPT-17/16
 VRM, LINE - 1
 ESP
 Circular
 13.09.2017
 15.00 Hrs
 IS 11255 (Part - 1), (Part - 2) : 1985 & (Part - 7): 2005
 13.09.2017
 14.09.2017

Ambient Temperature in °C : 36
 Stack Temperature in °C : 111
 Average Stack Gas Velocity in m/sec : 14.71
 Iso-kinetic Flow Rate in LPM : 22
 Duration of Sampling in minute : 46

Particulate Matter Concentration : 26 mg/Nm³
 Emission Limit Prescribed by OPCB : 30 mg/Nm³
 Sulphur Dioxide as SO₂ : 1.95 mg/Nm³
 Nitrogen Dioxide as NO₂ : 43.3mg/Nm³

Subhanga Praharaj
 Subhanga Praharaj
 Managing Director/QM

Harsh
 Verified By

P. Sareni
 Test Done By

END OF TEST REPORT

Page 1 of 1

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Cleenviron Private Limited

OPCB Empanelled Consultant and Engineers in Environmental Pollution Control & Monitoring with Accredited Laboratory.

TEST REPORT FOR STACK EMISSION MONITORING

FORMAT NO: CPL/FM/42

REPORT NO: CPL/R/SE/SEPT-17/34

REPORT ISSUE DATE: 20.09.2017

SAMPLE DRAWN BY CLEENVIRON PRIVATE LIMITED

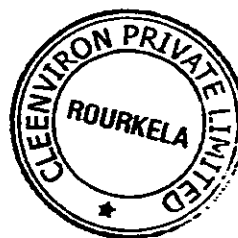
Name of the Customer	:	OCL INDIA LIMITED
Address of the Customer	:	CPP DIVISION, AT/PO: RAJGANGPUR - 770017, SUNDARGARH, ODISHA
Sample ID No	:	CPL/SE/SEPT-17/19
Name of Stack Monitored	:	Cooler ESP, Line - 1
Stack Connected To	:	ESP
Shape of Stack	:	Circular
Date of Sampling	:	14.09.2017
Time of Sampling	:	10.50 Hrs
Method of Sampling	:	IS 11255 (Part - 1) : 1985
Sample Received on	:	14.09.2017
Date of Test	:	15.09.2017

Ambient Temperature in °C	:	34
Stack Temperature in °C	:	288
Average Stack Gas Velocity in m/sec	:	6.85
Iso-kinetic Flow Rate in LPM	:	16
Duration of Sampling in minute	:	62

Particulate Matter Concentration	:	04 mg/Nm³
Emission Limit Prescribed by OPCB	:	30 mg/Nm³

Subhanga Senapati
 Subhanga Senapati
 Managing Director/QM

Abeyk
 Verified By



P. Caseni
 Test Done By

END OF TEST REPORT

Page 1 of 1

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Regional Office

DA-24, KOPERNAGAR, ROURKELA - 769014, Dist: SUNDARGARH, ODISHA

Branch Office & Laboratory

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Cleenviron Private Limited

OPCB Empanelled Consultant and Engineers in Environmental Pollution Control & Monitoring with Accredited Laboratory.

TEST REPORT FOR STACK EMISSION MONITORING

FORMAT NO: CPLJPM42

REPORT ISSUE DATE: 20.09.2017

REPORT NO: CPL/R/SE/SEPT-17/33

SAMPLE DRAWN BY CLEENVIRON PRIVATE LIMITED

Name of the Customer
 Address of the Customer
 Sample ID No
 Name of Stack Monitored
 Stack Connected To
 Shape of Stack
 Date of Sampling
 Time of Sampling
 Method of Sampling
 Sample Received on
 Date of Test

OCL INDIA LIMITED
 CPP DIVISION, AT/PO: RAJGANGPUR - 770017, SUNDARGARH, ODISHA
CPL/SE/SEPT-17/18
 CVRM - 2, Line - 1
 Bag filter
 Circular
 14.09.2017
 15.15 Hrs
 IS 11255 (Part - 1) : 1985
 14.09.2017
 15.09.2017

Ambient Temperature in °C : 35
 Stack Temperature in °C : 85
 Average Stack Gas Velocity in m/sec : 10.44
 Iso-kinetic Flow Rate in LPM : 17
 Duration of Sampling in minute : 40

Particulate Matter Concentration : 07 mg/Nm³
 Emission Limit Prescribed by OPCB : 30 mg/Nm³

Subhangra Prabhakar
 Subhangra Prabhakar
 Managing Director/QM

Moyak
 Verified By



P. Sareni
 Test Done By

END OF TEST REPORT

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TEST REPORT FOR STACK EMISSION MONITORING

FORMAT NO: CPLJFM/42

REPORT ISSUE DATE: 05.07.2017

REPORT NO: CPL/R/SE/JUL-17/2

SAMPLE DRAWN BY CLEENVIIRON PRIVATE LIMITED

Name of the Customer :
Address of the Customer :

OCL INDIA LIMITED
CEMENT DIVISION, AT/PO: RAJGANGPUR - 770017, SUNDARGARH, ODISHA

Sample ID No :
Name of Stack Monitored :
Stack Connected To :
Shape of Stack :
Date of Sampling :
Time of Sampling :
Method of Sampling :
Sample Received on :
Date of Test :

CPL/SE/JUN-17/28
VRM, LINE - 1
ESP
Circular
27.06.2017
17.45 Hrs
IS 11255 (Part - 1) & (Part - 2) : 1985
27.06.2017
28.06.2017

Ambient Temperature in °C :
Stack Temperature in °C :
Average Stack Gas Velocity in m/sec :
Iso-kinetic Flow Rate in LPM :
Duration of Sampling in minute :

31
117
15.40
22
30

Particulate Matter Concentration :
Emission Limit Prescribed by QPCB :
Sulphur Dioxide as SO₂ :
Nitrogen Oxides as NO_x :

28 mg/Nm³
30 mg/Nm³
32.82 mg/Nm³
436.58mg/Nm³

Subhanga Praharaj
Managing Director/QM

Verified By

P. Saseeni
Test Done By



-----END OF TEST REPORT-----

Page 1 of 1

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Cleenviron Private Limited

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TEST REPORT FOR STACK EMISSION MONITORING

FORMAT NO: CPLJFM/42

REPORT ISSUE DATE: 05.07.2017

REPORT NO: CPL/R/SE/JUL-17/10

SAMPLE DRAWN BY CLEENVI PRIVATE LIMITED

Name of the Customer
Address of the Customer

OCL INDIA LIMITED
CEMENT DIVISION, AT/PO: RAJGANGPUR - 770017, SUNDARGARH, ODISHA

Sample ID No
Name of Stack Monitored
Stack Connected To
Shape of Stack
Date of Sampling
Time of Sampling
Method of Sampling
Sample Received on
Date of Test

CPL/SE/JUN-17/30
Cooler, LINE - 1
ESP
Circular
27.06.2017
14.55 Hrs
IS 11255 (Part - 1): 1985
27.06.2017
28.06.2017

Ambient Temperature in °C
Stack Temperature in °C
Average Stack Gas Velocity in m/sec
Iso-kinetic Flow Rate in LPM
Duration of Sampling in minute

29
275
8.22
19
30

Particulate Matter Concentration
Emission Limit Prescribed by QPCB

13 mg/Nm³
30 mg/Nm³

Subhanga Praharaj
Managing Director/QM

Verified By

P. Sateri
Test Done By



END OF TEST REPORT

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TEST REPORT FOR STACK EMISSION MONITORING

FORMAT NO: CPLJFM/42

REPORT ISSUE DATE: 05.07.2017

REPORT NO: CPL/R/SE/JUL-17/9

SAMPLE DRAWN BY CLEENVI PRIVATE LIMITED

Name of the Customer
Address of the Customer

OCL INDIA LIMITED
CEMENT DIVISION, AT/PO: RAJGANGPUR - 770017, SUNDARGARH, ODISHA

Sample ID No
Name of Stack Monitored
Stack Connected To
Shape of Stack
Date of Sampling
Time of Sampling
Method of Sampling
Sample Received on
Date of Test

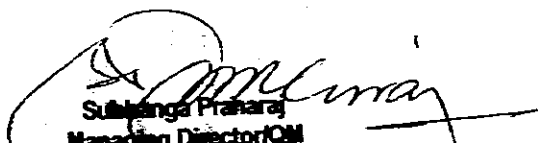
CPL/SE/JUN-17/34
CVRM - 2, LINE - 1
Bag Filter
Circular
28.06.2017
16.36 Hrs
IS 11255 (Part - 1): 1985
28.06.2017
29.06.2017

Ambient Temperature in °C
Stack Temperature in °C
Average Stack Gas Velocity in m/sec
Iso-kinetic Flow Rate in LPM
Duration of Sampling in minute

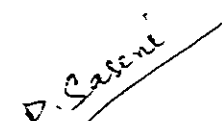
28
78
11.56
19
30

Particulate Matter Concentration
Emission Limit Prescribed by OPCB

17 mg/Nm³
30 mg/Nm³


Subhanga Prasad
Managing Director/QM


Verified By


Test Done By



END OF TEST REPORT

Page 1 of 1

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