



Mangalore SEZ Limited

3rd Floor, MUDA Building, Ashok nagar,

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Website: www.mangaloresez.com

CIN: U45209KA2006PLC038590

MSEZL/MNG/EN/2015-16

7 June, 2016

To,

The Director,
Southern Region, Regional Office,
Ministry of Environment and Forests,
Kendriya Sadan, 4th Floor, E&F Wings,
17th Main Road, 1st Block, Koramangala,
Bangalore – 560 034

Sir,

Sub: Six monthly Compliance Report.

Ref:

1. Environmental Clearance No: 21-383/2007-IA-III, dated 3rd April 2008.
2. Amendment to Environmental Clearance for setting up of Phase-I of Special Economic Zone at Mangalore by M/s Mangalore SEZ Ltd – regarding No: 21-383/2007-IA-III dated 13th July, 2012.
3. Amendment to Environmental Clearance for setting up of Phase-I of Special Economic Zone at Mangalore by M/s Mangalore SEZ Ltd date 27 Aug 2014.
4. Amendment to Environmental Clearance for development of Multi Product Units as Mangalore SEZ dated 18 June 2015

With reference to above, we would like to submit the compliance report as on date.

S. No.	A. SPECIFIC CONDITIONS	Compliance
(i)	No Objection Certificate from the Karnataka State Pollution Control Board shall be obtained before initiating the project.	Consent For Establishment from KSPCB obtained on 30 April 2008 and Extension of validity of Consent For Establishment obtained on 27 May 2013 and the copy was submitted to MoEF.
(ii)	The MSEZ project shall be restricted to the Phase-I of the project, proposed over 1,800 acres. The phase II of the project shall be considered by Ministry of Environment and Forests only after receipt of all requisite documents/information as laid down in the Environmental Impact Assessment Notification, 2006 and Coastal Regulation Zone Notification, 1991 as applicable.	Will be complied. MSEZL will approach MoEF with requisite documents as per EIA Notification, 2006 for Phase-2 expansions.
(iii)	All development in the Coastal Regulation Zone area shall be in accordance with the Coastal Regulation Zone Notification, 1991. No destruction of mangroves shall be undertaken except while undertaking the permissible activities in the Coastal Regulation Zone-I areas.	Will be complied.



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S. No.	A. SPECIFIC CONDITIONS	Compliance
(iv)	The project proponent shall not take up any activity in 875 acres of Coastal Regulation Zone land, other than those permissible under the Coastal Regulation Zone Notification 1991 such as pipeline corridors, pipelines roads on stilts.	Will be complied.
(v)	With regard to the containing the suspected contamination of the groundwater near Athurkodi area of Kuthethoor village, MRPL have given an undertaking vide their letter dated 19.3.2008 which is as follows:- - Implementation of recommendation of NGPRI will be started by MRPL immediately after submission of their report. - Depending upon the nature of their recommendations, we will make efforts to complete necessary actions within 6 months from the date of receipt of their report. - In addition to above, a daily vigil is already in place to take samples from different places and to monitor any suspected oil leakage. This will continue till the problem is resolved. - We are also in continuous contact with the residents in the surround areas with regard to any contamination. KSPCB and MRPL shall ensure that (a) to (d) above is implemented in a time bound manner and a monthly report on the progress of the activities provided to the Regional Office of this Ministry at Bangalore. For this purpose a separate budget would be allocated by MRPL.	This condition pertains to MRPL phase III expansion project. MRPL phase III expansion has been detached from MSEZ phase I project vide EC amendment dated 13th July 2012. MRPL shall be complying conditions relevant to them as part of their existing clearance.
(vi)	The project proponent shall obtain a report from the Wildlife Department with regard to existence of wildlife in the proposed site as claimed by the public before implementing the project.	Report from the Forest Department is obtained and submitted to the MoEF dated June 5, 2008.
(vii)	The R&R package shall be strictly in accordance with the laid down norms of the State Government.	The R&R Package is being implemented strictly as per Approved policy by State Government. In 1 st PDF 1220 families out of 1232, In 2 nd PDF 220 families out of 220 & In 3 rd PDF 138 families out of 144 families has been compensated with R&R Packages. Totally 1578 families have vacated their houses and the process is in progress for the balance.
(viii)	A marine Environment Impact Assessment and Risk Assessment along with the Disaster Management Plan shall be prepared for the outfall facilities proposed in the	NIO has carried out EIA, Risk Assessment, DMP and Bathymetry survey along with Marine Outfall pipeline



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S. No.	A. SPECIFIC CONDITIONS	Compliance
	Coastal Regulation Zone and the marine areas.	alignment. The detailed design report of the Marine Outfall facility is prepared by Master planning consultants of MSEZ under the guidance of Department of Oceanography, IIT Chennai. The design report was also vetted by NIO, Goa. The detailed project report of the facility is submitted to MoEF during November 2009. MSEZ has taken up the implementation of the above facility and completed the work by July 2014. MSEZ obtained consent for operation of treated waste water discharge line from KSPCB dated 8 Oct 2015.
(ix)	Project proponent shall put up a dedicated website and a display panel to inform the public regarding the Ambient Air Quality along with SO ₂ NO _x and other parameters as prescribed as Central Pollution Control Board (CPCB).	MSEZL has dedicated website 'www.msezl.com', wherein Environment Monitoring Parameters are periodically uploaded and made available to the public. Regarding Continuous Ambient Air Quality Monitoring MSEZL has submitted the letter to KSPCB for finalizing the location for 2 monitoring stations with drawing. Further the procurement for one station is under progress and this will be completed by end of Dec 2016.
(x)	The gaseous emissions (SO ₂ , NO _x , HC, VOC and Benzene) from various process units shall conform to the standards prescribed by the concerned State Pollution Control Board. All the measures detailed in the EMP and response to the Public Hearing shall be taken to control the point/stack and fugitive gaseous emissions from the proposed facilities, processes and storage units etc., for ensuring that the ambient air quality around the Refinery due to the expansion is maintained at the predicted 24 hourly average maximum concentration.	Noted and will be complied for MSEZ units. MRPL phase III expansion has been detached From MSEZ phase I project vide EC amendment dated 13 th July 2012. MRPL shall be complying conditions relevant to them as part of their existing clearance.
(xi)	The emission levels of the other pollutants shall also remain within the permissible levels	Noted and will be complied.
(xii)	The industrial units in the SEZ and the associated facilities shall be strictly in accordance with the norms laid down by the Karnataka State Government and CPCB.	Will be adhered.
(xiii)	The project proponent shall ensure that the greenery of the area is maintained. Further, 33% of the project area shall be dedicated for green belt development of which at least 5% shall be for mangrove afforestation. The local Forest	Since inception MSEZL has completed Green Belt development in 154 acres out of 272 acres . In the year 2015-16, during the first phase 24,750 saplings will be



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S. No.	A. SPECIFIC CONDITIONS	Compliance
	Department shall be associated for this purpose and requisite budget earmarked.	planted in 55 acres land out of which 12000 saplings already planted and the work is under progress. Another remaining 65 acres will be developed in year of 2016-17. Green Belt operation & maintenance is for 2-3 years & plants are maintained as per the good package of practises to ensure 100% survival. Slope stabilisation in about 18 acres with vetiver grass has been completed.
(xiv)	The project proponent shall ensure that the water requirement of the Mangalore city does not get affected due to the SEZ operation. Adequate provision shall be made in the reservoirs to provide for the water requirement of the cities.	Noted.
(xv)	The project proponent shall ensure that during construction and operation of the project the traffic in the city is not affected.	Noted and will be complied.
(xvi)	All precautions of the highest standards shall be incorporated in the design of the project to ensure that there is no chance of emission/leakage of hazardous chemicals including Benzene. Detailed monitoring programme shall be designed and the information provided to the public through display and dedicated website by means of online monitoring.	Noted and will be complied.
(xvii)	Low Sulphur internal fuel oil and fuel gas shall be fired in process heaters and boilers.	Noted and will be complied.
(xviii)	Quarterly monitoring of fugitive emissions shall be carried out by Fugitive Emission Detectors (GMI Leak Surveyor). Guidelines of CPCB will be followed for monitoring fugitive emissions. For control of fugitive emissions, all unsaturated hydrocarbons shall be routed to the flare system. The flare system shall be designed for smokeless burning. Flare Gas Recovery System shall be installed for reduction of Hydrocarbon loss and emission of VOCs, NOx, N ₂ O, SOx & CO ₂ to the environment.	Noted and will be complied.
(xix)	Regular Ambient Air Quality Monitoring shall be carried out. The location and results of existing monitoring stations shall be reviewed in consultation with the concerned State Pollution Control Board based on the occurrence of maximum ground level concentration and downwind direction of wind. Additional Stations shall be set up, if required. It shall be ensured that at least one	Ambient Air Quality Monitoring is being carried out regularly in five locations and the locations of monitoring are selected in consultation with KSPCB. The reports of monitored data attached as Annexure-I .



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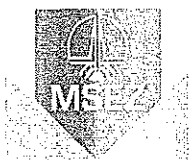
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S. No.	A. SPECIFIC CONDITIONS	Compliance
	monitoring station is set up in up-wind & in down-wind direction along with those in other directions.	
(xx)	On-line data for air emissions shall be transferred to the CPCB and SPCB regularly. The instruments used for ambient air quality monitoring shall be calibrated regularly. The monitoring protocol shall ensure continuous monitoring of all the parameters.	After installation of CAAQM stations the data will be transferred to CPCB & SPCB regularly. Presently procurement is under progress and will be completed by Dec 2016.
(xxi)	The practice of acoustic plant design shall be adopted to limit noise exposure for personnel to an 8 hr time weighted average of 90 dB (A).	Noted and will be complied.
(xxii)	All the pumps and other equipment's, where there is a likelihood of HC leakages, shall be provided with appropriate indicators and detectors. Provision for immediate isolation of such equipment, in case of a leakage shall also be made. The company shall adopt Leak Detection And Repair (LDAR) programme for quantification and control of fugitive emissions.	Noted and will be complied.
(xxiii)	The product loading gantry shall be connected to the product sphere in closed circuit through the vapour arm connected to the tanker. Data on fugitive emissions shall be regularly monitored and records shall be maintained	Noted and will be complied.
(xxiv)	The company shall ensure that no halogenated organic is sent to the flares. If any of the halogenated organic are present, then the respective streams may be incinerated, if there are no technically feasible or economically viable reduction/recovery options. Any stream containing organic carbon, other than halogenated shall be connected to proper flaring system, if not to a recovery device or an incinerator.	Noted and will be complied.
(xxv)	The new standards/norms that are being proposed by the CPCB for Petrochemical Plants and Refineries shall be applicable for the proposed expansion unit. The company shall conform to the process vent standards for organic chemicals including non-VOCs and all possible VOCs i.e., TOCs standards and process vent standards for top priority chemicals. Regular monitoring will be carried out for VOC and HC and On-line monitors for VOC measurements may be installed.	Noted and will be complied.
(xxvi)	Regular monitoring of relevant parameters for the underground water in the surrounding areas shall be undertaken and the results shall be submitted to the relevant States Pollution Control Board.	Regular monitoring of ground water is being carried in 10 locations & the reports are attached as Annexure-I . The locations are finalized in consultation with KSPCB.



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S. No.	A. SPECIFIC CONDITIONS	Compliance
(xxvii)	Solid waste generated as Pretreater and Reformer Catalysts, Sulphur guard absorbent and Alumina Balls shall be disposed off as per the authorization from the State Pollution Control Board.	Noted and will be complied. During operation stage MSEZL will dispose the solid waste as per the directions of State Pollution Control Board.
(xxviii)	Oily sludge shall be sent to melting pit treatment for recovery of oil. The recovered oil shall be recycled into the refinery system. The residual sludge will be stored in HDPE lined pit for disposal after treatment. The sludge shall be incinerated in the premises only.	Noted and will be complied.
(xxix)	The company shall strictly follow all the recommendations mentioned in the Charter on Corporate Responsibility for Environmental Protection (CREP).	Noted and will be complied.
(xxx)	The Company shall harvest surface as well as rainwater from the rooftops of the buildings proposed in the expansion project and storm water drains to recharge the ground water and use the same water for the various activities of the project to conserve fresh water.	Noted and will be complied.
(xxxi)	Occupational Health Surveillance of the workers should be done on a regular basis and records maintained as per the Factories Act.	Complied and copy is submitted.
(xxxii)	The Company shall implement all the recommendations made in the Environmental Impact Assessment /EMP report and risk assessment report.	Noted and will be complied.
(xxxiii)	The company will undertake all relevant measures, as indicated during the Public Hearing for improving the Socio-economic conditions of the surrounding area.	Noted and will be complied.
(xxxiv)	With regard to R&R colony the project proponent shall obtain all requisite clearances as prescribed by the concerned agencies.	The R&R Colonies are developed after obtaining the requisite clearances from the concerned Departments like MoEF, KSPCB, Mangalore Urban Development Authority etc.

S. No	B. GENERAL CONDITIONS	Compliance
(i)	The project authorities shall strictly adhere to the stipulations made by the concerned State Pollution Control Board (SPCB) and the State Government.	Noted and will be complied.
(ii)	No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment and Forests.	MSEZ obtained amendment to EC 1. Dated 13 July 2012 2. 27 Aug 2014, this involves widening of existing public road towards river side adjacent to MSEZ



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S. No	B. GENERAL CONDITIONS	Compliance
		proposed pipeline cum road Corridor in Reach-II area. 3. 18 th June 2015 for development of Multi Product Units as Mangalore SEZ. Copy of amendments is submitted.
(iii)	At no time, the emissions shall be allowed to go beyond the prescribed standards. In the event of failure of any pollution control system adopted by the units, the respective unit should be immediately put out of operation and should not be restarted until the desired efficiency has been achieved.	Noted and will be complied.
(iv)	Adequate number of influent and effluent quality monitoring stations shall be set up in consultation with the SPCB. Regular monitoring shall be carried out for relevant parameters for both surface and ground water.	The treated effluent parameters are measured through online measuring instruments installed at outlet line of Marine outfall pump house for the parameters like pH, DO, COD, TSS, and Conductivity. Further Ground water and surface water monitoring is carried out in the surrounding areas regularly & the reports are attached as Annexure-I . The locations are finalized in consultation with KSPCB.
(v)	Industrial wastewater shall be properly collected and treated so as to conform to the standards prescribed under GSR 422 (E) dated 19 th May 1993 and 31 st December, 1993 or as amended from time to time. The treated wastewater shall be utilized for plantation purpose.	Noted and will be complied.
(vi)	The overall noise levels in and around the plant area shall be limited within the prescribed standards (85dBA) 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 EPA Rules, 1989 viz. 75dBA (day time) and 70dBA (night time).	Noted and will be complied.
(vii)	The project authorities shall strictly comply with the provisions made in Manufacture, Storage and Import of Hazardous Chemicals Rules 1989 as amended in 2000 for handling of hazardous chemicals etc. Necessary approvals from Chief Controller of Explosives must be obtained before commission of the expansion project. Requisite On-site and Off-site Disaster Management Plans will be prepared and implemented.	Noted and will be complied. MRPL phase III expansion has been detached From MSEZ phase I project vide EC amendment dated 13 th July 2012. MRPL shall be complying conditions relevant to them as part of their existing clearance.



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S. No	B. GENERAL CONDITIONS	Compliance
(viii)	Authorization from the State Pollution Control Board must be obtained for collections/treatment/storage/disposal of hazardous wastes.	Noted and will be complied.
(ix)	The project authorities shall provide adequate funds both recurring and non-recurring to implement the conditions stipulated by the Ministry of Environment and Forests as well as the State Government along with the implementation schedule for all the conditions stipulated herein. The funds so provided shall not be diverted for any other purposes.	Noted and will be complied.
(x)	The stipulated conditions shall be monitored by the concerned Regional Office of this Ministry /Central Pollution Control Board/State Pollution Control Board. A six monthly compliance report and the monitored data shall be submitted to them regularly. It shall also be displayed on the Website of the Company.	Compliance report is being submitted to MoEF/KSPCB on regular basis for every six months along with Ambient Air Quality monitoring report & Ground water monitoring report. Compliance report is also displayed in the Company website.
(xi)	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 the State Pollution Control Board/ Committee and may also be seen at Website of the Ministry of Environment and Forests at http://www.envfor.nic.in . This should be advertised within seven days from the date of issue of the clearance letter at least in two local newspapers that are widely circulated in the region of which one shall be in the vernacular language of the locality concerned and a copy of the same should be forwarded to the concerned Regional office of this Ministry.	The same was carried out and the information regarding this was submitted to Ministry and KSPCB.
(xii)	The date of Financial Closure and final approval of the project by the concerned authorities and the date of commencing the land development work as well as the commissioning of the project shall be informed to the Ministry and its Regional Office.	MSEZL has taken up the land development & infrastructure works from April 2011. MSEZL Board has approved the Business Plan for Infrastructure Development during Aug. 2012.
(xiii)	Proper Housekeeping and adequate occupational health programmes shall be taken up. Regular Occupational Health Surveillance Programme for the relevant diseases shall be carried out and the records shall be maintained properly for at least 30-40 years. Sufficient preventive measures shall be adopted to avoid direct exposure to emission and other Hydrocarbons etc.	Noted and will be complied.



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S. No	B. GENERAL CONDITIONS	Compliance
(xiv)	A separate environment management cell with full fledged laboratory facilities to carry out various management and monitoring functions shall be set up under the control of a Senior Executive.	General Manager (Environment & Civil) & Environmental Engineer are in place to take care of Environmental issues. Horticulture Sr.Manager is appointed for development and maintenance of Green belt. The laboratory facilities will be set up before the Commission of the units taken up in MSEZ.

S. No	EC Amendment conditions dtd. 13 th July 2012	Compliance
(i)	Only the sector Specific shall be permitted in the SEZ & those units shall obtain separate Environmental Clearance as applicable.	Noted and will be complied.
(ii)	Proponent shall enhance the allocation for the CSR activities from 2.5 to 5 % of the total cost & item-wise details along with time bound action plan shall be prepared & submitted to the Ministry's Regional office at Bangalore. Implementation of such program shall be ensured accordingly in a time bound manner.	MSEZL has already taken up CSR activities and details of CSR activity is attached as Annexure- II
(iii)	The green belt shall be 33% all along the periphery & width of the green belt shall be minimum 50 mts.	Noted and will be complied.



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S. No	EC Amendment conditions dtd. 27 th Sep 2014	Compliance
(i)	The project proponent while carrying out the road widening works towards river side should not cause any impact to the river water flow and should be clear of river water way.	Complied.
(ii)	The project proponent to take up the bank protection works like stone pitching etc to avoid soil erosion of the banks.	River bank protection works as directed by WRDO are carried out.
(iii)	The project proponent to take up all adequate measures to mitigate the dust pollution during the road widening works.	Noted and will be complied.
(iv)	The proponent shall not dump any construction wastes etc in the river portion.	Noted and will be complied.

With Regards

GM (Civil & Environment)

Mangalore SEZ Ltd.

Encl.:

1. Monitoring reports for Air, Water & Noise Environment.
2. Environmental compliance report & Environmental Monitoring Reports from OMPL.

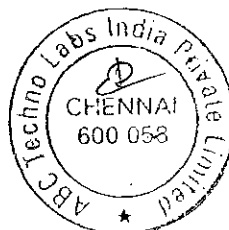
Copy to: Environmental Officer, Karnataka State Pollution Control Board, Mangalore.

ENVIRONMENTAL MONITORING REPORT
SPECIAL ECONOMIC ZONE LIMITED, MANGALORE



DECEMBER - 2015

Prepared by:



ABC Techno Labs India Private Limited

An ISO : 9001:2008, ISO : 14001:2004 & OHSAS : 18001:2007 Certified Company
(Accredited by NABL, NABET, MoEF)



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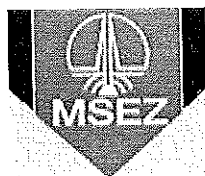


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Environmental Monitoring Report – Mangalore Special
Economic zone Limited, Mangalore.

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FIGURE

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ANNEXURE

Annexure -I	MoEF Certificate/NABL Certificate
Annexure -II	Sampling Location Map.



ENVIRONMENTAL MONITORING REPORT

1.0. Introduction:

Mangalore Special Economic Zone Limited is located 8 km aerielly to North East of New Mangalore Port and is adjacent to the existing refinery of MRPL on its West. The Industrial estate of the District, namely Baikampady is located southwest of MSEZ. The Mangalore Airport is about 5 km South East of MSEZ.

1.1. Description of the Organization:

M/s. ABC Techno Labs India Private Limited, Chennai, an ISO 9001, ISO 14001 & OHSAS 18001 Certified Company has been accredited by,

- National Accreditation Board for Education and Training (NABET), a division of Quality Council of India (QCI).
- Recognized under EP Act, 1986 by Ministry of Environment and Forest.
- National Accreditation Board for Testing and Calibration Laboratories (NABL), an autonomous body under the Department of Science & Technology, Government of India.

The certificate of authorization is enclosed in the Annexure-I.

We offer the following services,

- Environmental Impact Assessment (EIA) & Environmental Management Plan (EMP) for Infrastructure & Industrial Projects.
- Social Impact Assessment Studies including Rehabilitation & Resettlement
- Environmental Monitoring
- Environmental Audits
- Capacity Building for Environmental Management
- Solid Waste Management
- Effective Management of Resources and Wastes
- Risk Assessment & Management Studies



1.2. Scope of Work:

The scope of the work is to conduct Environmental monitoring at Special Economic Zone, Mangalore, following the guidelines and regulations of MoEF/CPCB standards. The scope of the work for the month of December 2015 is to conduct ambient air quality monitoring at five locations and ground water quality monitoring at ten locations, Sampling Locations of each category is given in annexure - II.

2.0. Ambient Air Quality Monitoring Details:

Ambient air quality monitoring (AAQM) was carried out at five locations with due consideration to the meteorological conditions of the Project area. Ambient air quality monitoring was carried out at each location on 24 hourly basis on two consecutive days per month. The details of AAQ monitoring stations are given in Table 1.1.

Table - 1.1. Details of Ambient Air Monitoring Locations

STATION CODE	NAME OF THE LOCATIONS	GEOGRAPHICAL LOCATION
AAQ1	120 ML Water Reservoir	N-12°59'13.40" E-74°52'03.00"
AAQ2	MSEZ, Permude	N-12°59'54.00" E-74°52'53.60"
AAQ3	GSS3-10 ML Water Reservoir	N-12°58'57.70" E-74°51'30.10"
AAQ4	CETP Location	N-12°59'51.40" E-74°51'24.70"
AAQ5	Bajpe	N-12°58'32.80" E-74°52'10.40"

2.1.1. Method used for Air Quality Monitoring:

Respirable Dust Sampler and Fine Particulate Samplers were used for collecting Particulate Matter of size less than 10 µm (PM₁₀) and 2.5 µm (PM_{2.5}) respectively. Gaseous Samplers were used for sampling gaseous pollutants such as SO₂, NO_x, Ammonia and Ozone (O₃). Organic vapour sampler



was used to sample Hydrocarbon. Gas analyzer was used to estimate Carbon monoxide (CO) level in ambient air.

The Analytical techniques used for ambient air quality monitoring and its minimum detectable limit for each parameter is tabulated in Table 1.2.

Table - 1.2. Analytical Techniques Used for Ambient Air Quality Monitoring

S.NO	PARAMETER	TECHNIQUE	MINIMUM DETECTABLE LIMIT
1	Particulate Matter PM ₁₀	Fine Particulate Sampler (Gravimetric method)	5.0 µg/m ³
2	Particulate Matter PM _{2.5}	Fine Particulate Sampler (Gravimetric method)	5.0 µg/m ³
3	Sulphur di Oxide	Modified West & Gaeke Method	5.0 µg/m ³
4	Nitrogen Oxide	Jacob and Hochheiser Method	5.0 µg/m ³
5	Carbon monoxide	Gas Analyser	0.1 ppm
6	Ammonia	Nessler's Method	5 µg/m ³
7	Ozone	KI Absorption and Colorimetric	5 µg/m ³
8	Benzene,	IS 5182: Pt 11: 2006	0.01 µg/m ³
9	Benzo[a]pyrene	IS 5182: Pt 12: 1991	0.1 ng/m ³
10	Lead,	IS 5182 P 22: 2004	0.1 µg/m ³
11	Arsenic, Nickel	IS 5182 P 22: 2004	1 ng/m ³

2.1.2. Micro-Meteorology :

Wind Speed, Predominant Wind Direction, Temperature, Relative Humidity between 01-12-2015 and 31-12-2015 at MSEZ is given in Table 1.3.



Environmental Monitoring Report – Mangalore Special Economic Zone Limited, Mangalore.

Table-1.3- Micro-Meteorology

DATE	TEMPERATURE (°C)		RELATIVE HUMIDITY (%)		WIND SPEED (Km/hr)		PREDOMINANT WIND DIRECTION
	MIN	MAX	MIN	MAX	MIN	MAX	
01-12-2015	23	33	50	94	5.6	14.8	North
02-12-2015	24	33	44	95	5.6	13	East
03-12-2015	24	33	48	94	5.6	13	North
04-12-2015	23	34	43	89	5.6	11.1	East Northeast
05-12-2015	22	34	23	74	5.6	14.8	East Southeast
06-12-2015	24	34	32	79	5.6	18.5	Southeast
07-12-2015	24	34	39	84	5.6	14.8	Northwest
08-12-2015	24	31	44	89	5.6	11.1	East Southeast
09-12-2015	23	34	40	84	3.7	18.4	East Southeast
10-12-2015	23	34	47	94	5.6	13	Northwest
11-12-2015	24	33	51	94	5.6	16.7	East Southeast
12-12-2015	24	34	53	89	5.6	14.8	North
13-12-2015	24	32	57	94	3.7	14.8	West Northwest
14-12-2015	24	32	57	94	3.7	14.8	West Northwest
15-12-2015	23	32	57	94	5.6	18.5	West
16-12-2015	23	32	55	94	5.6	14.8	East Southeast
17-12-2015	23	33	49	94	5.6	18.5	West Northwest
18-12-2015	23	33	41	100	5.6	16.7	East Southeast
19-12-2015	22	33	46	94	5.6	18.5	North
20-12-2015	22	34	45	94	5.6	20.4	East Southeast
21-12-2015	23	32	56	94	5.6	14.8	East Southeast
22-12-2015	22	34	42	91	5.6	16.7	North
23-12-2015	22	34	38	94	5.6	18.5	Southeast
24-12-2015	22	34	30	94	5.6	18.5	East
25-12-2015	21	34	35	94	5.6	16.7	East Southeast
26-12-2015	22	33	34	88	3.7	16.7	East Southeast
27-12-2015	21	34	34	83	5.6	14.8	North
28-12-2015	22	34	36	89	5.6	16.7	Northwest
29-12-2015	19	35	20	78	5.6	16.7	East
30-12-2015	20	36	13	83	7.4	14.8	West Northwest
31-12-2015	20	35	13	83	5.6	14.8	East

2.1.3. Wind Rose:

The wind roses diagram for the month of **December 2015** at Mangalore SEZ is depicted in Figure 1.1.

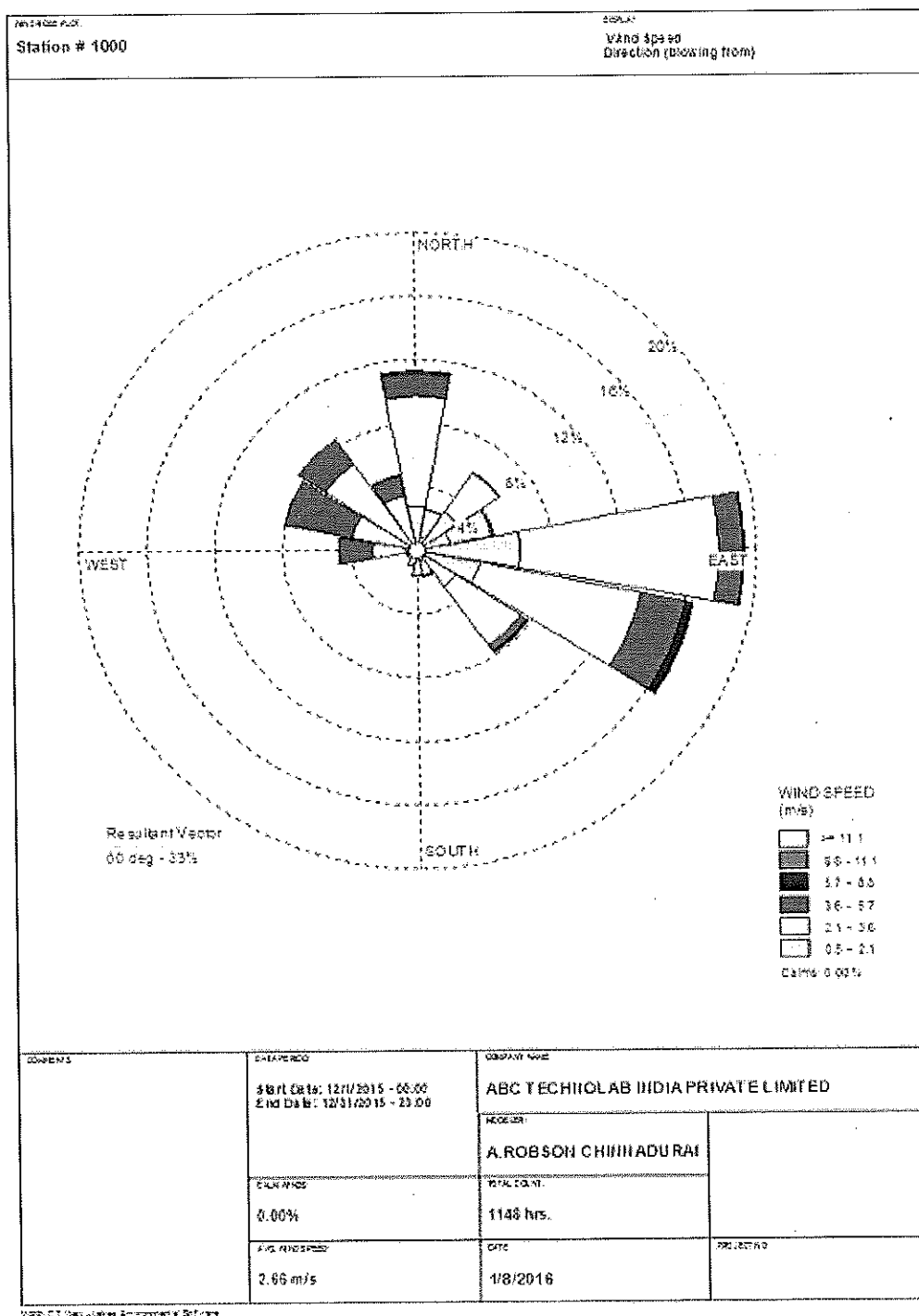


Figure 1.1. Wind Rose Diagram - December 2015



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2.1.4. AMBIENT AIR QUALITY RESULTS:

The 24 hourly average results of Ambient Air Quality Monitoring of two consecutive days for the month of **December 2015** are presented in Table-1.4(a), 1.4 (b), 1.4(c), 1.4(d), 1.4(e) and 1.4(f). The obtained results are compared with the standards prescribed by Central Pollution Control Board (CPCB) for “Industrial, Rural, Residential and other areas”.

Table 1.4 (a)- AMBIENT AIR QUALITY REPORT

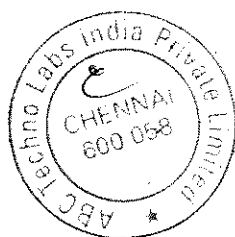
SAMPLE ID NO	ABC/MSEZ/21/AS/281215/A 1799-1800
SAMPLE DESCRIPTION	AMBIENT AIR QUALITY MONITORING.
SAMPLE DRAWN BY	ABC Techno Labs India Private Limited
NAME OF THE CLIENT	MANGALORE SPECIAL ECONOMIC ZONE LIMITED, MANGALORE
DATE SAMPLED	28-12-2015 (Monitoring duration 24hrs/day for 2 days)
REPORT DATE	06-01-2016

S.No	Location	Height GL(m)	Pollutant Concentration in $\mu\text{g}/\text{m}^3$						
			PM _{2.5}	PM ₁₀	SO ₂	NO _x	Pb	NH ₃	O ₃
1	CETP Location	2	25.1	54.6	10.1	15.8	BDL (<0.1)	17.6	11.7
2	MSEZ-GSS 3	2	26.8	60.4	11.8	18.4	BDL (<0.1)	18.1	12.5
Test Method			EPA- 40 CFR Part 50	IS 5182 Pt.23 : 2006	West & Gaeke	Jacob & Hochheister	IS 5182 P 22	Nessler's Method	KI Absorption Method
CPCB STANDARDS									
Industrial /Residential / Rural and Other Area			60	100	80	80	1	400	100

BDL- Below Detection Limit

Contd.....

For ABC Techno Labs India Private Limited.,



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Table 1.4(b) - AMBIENT AIR QUALITY REPORT

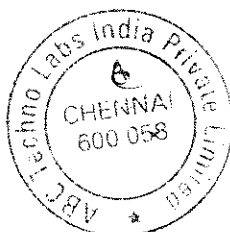
SAMPLE ID NO	ABC/MSEZ/21/AS/281215/A 1799-1800
SAMPLE DESCRIPTION	AMBIENT AIR QUALITY MONITORING.
SAMPLE DRAWN BY	ABC Techno Labs India Private Limited
NAME OF THE CLIENT	MANGALORE SPECIAL ECONOMIC ZONE LIMITED, MANGALORE
DATE SAMPLED	28-12-2015 (Monitoring duration 24hrs/day for 2 days)
REPORT DATE	06-01-2016

S.No	Location	Pollutant Concentration				CO, mg/m ³
		Benzene µg/m ³	Benzo[a]pyrene ng/m ³	Arsenic ng/m ³	Nickel ng/m ³	
1	CETP Location	BDL (<0.01)	BDL (<0.1)	BDL (<1)	BDL (<1)	BDL(<0.1)
2	MSEZ-GSS 3	BDL (<0.01)	BDL (<0.1)	BDL (<1)	BDL (<1)	0.21
Test Method		IS 5182: Pt 11: 2006	IS 5182: Pt 12: 1991	IS 5182 P 22	IS 5182 P 22	Gas Analyser
CPCB STANDARDS						
Industrial /Residential / Rural and Other Area		5	1	6	20	2

BDL- Below Detection Limit

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Table 1.4(c) - AMBIENT AIR QUALITY REPORT

SAMPLE ID NO	ABC/MSEZ/21/AS/281215/A 1801
SAMPLE DESCRIPTION	AMBIENT AIR QUALITY MONITORING.
SAMPLE DRAWN BY	ABC Techno Labs India Private Limited
NAME OF THE CLIENT	MANGALORE SPECIAL ECONOMIC ZONE LIMITED, MANGALORE
DATE SAMPLED	28-12-2015 (Monitoring duration 24hrs/day for 2 days)
REPORT DATE	06-01-2016

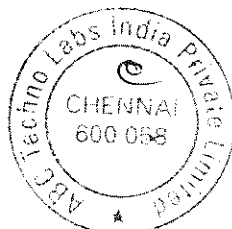
S.No	Location	Height GL(m)	Pollutant Concentration in $\mu\text{g}/\text{m}^3$						
			PM _{2.5}	PM ₁₀	SO ₂	NO _x	Pb	NH ₃	O ₃
3	Baipe	2	18.6	42.7	5.6	12.3	BDL (<0.1)	BDL(<5)	9.6
Test Method			EPA- 40 CFR Part 50	IS 5182 Pt.23 : 2006	West & Gaeke	Jacob & Hochheister	IS 5182 P 22	Nessler's Method	KI Absorption Method
CPCB STANDARDS									
Industrial /Residential / Rural and Other Area			60	100	80	80	1	400	100

BDL- Below Detection Limit

Contd.....

For ABC Techno Labs India Private Limited.,

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Table 1.4(d) - AMBIENT AIR QUALITY REPORT

SAMPLE ID NO	ABC/MSEZ/21/AS/281215/A 1801
SAMPLE DESCRIPTION	AMBIENT AIR QUALITY MONITORING.
SAMPLE DRAWN BY	ABC Techno Labs India Private Limited
NAME OF THE CLIENT	MANGALORE SPECIAL ECONOMIC ZONE LIMITED, MANGALORE
DATE SAMPLED	28-12-2015 (Monitoring duration 24hrs/day for 2 days)
REPORT DATE	06-01-2016

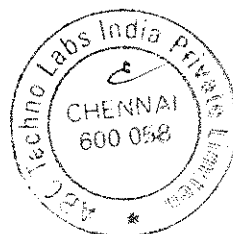
S.No	Location	Pollutant Concentration				CO, mg/m ³
		Benzene µg/m ³	Benzo[a]pyrene ng/m ³	Arsenic ng/m ³	Nickel ng/m ³	
3	Baipe	BDL (<0.01)	BDL (<0.1)	BDL (<1)	BDL (<1)	BDL (<0.1)
Test Method		IS 5182: Pt 11: 2006	IS 5182: Pt 12: 1991	IS 5182 P 22	IS 5182 P 22	Gas Analyser
CPCB STANDARDS						
Industrial /Residential / Rural and Other Area		5	1	6	20	2

BDL- Below Detection Limit

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Table 1.4(e) - AMBIENT AIR QUALITY REPORT

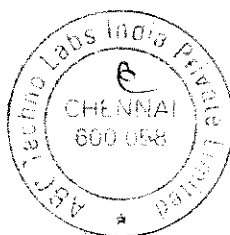
SAMPLE ID NO	ABC/MSEZ/21/AS/301215/A 1802-1803
SAMPLE DESCRIPTION	AMBIENT AIR QUALITY MONITORING.
SAMPLE DRAWN BY	ABC Techno Labs India Private Limited
NAME OF THE CLIENT	MANGALORE SPECIAL ECONOMIC ZONE LIMITED, MANGALORE
DATE SAMPLED	30-12-2015 (Monitoring duration 24hrs/day for 2 days)
REPORT DATE	06-01-2016

S.No	Location	Height GL(m)	Pollutant Concentration in $\mu\text{g}/\text{m}^3$						
			PM _{2.5}	PM ₁₀	SO ₂	NO _x	Pb	NH ₃	O ₃
4	120 ML, Water Reservoir	2	23.8	57.3	8.7	14.2	BDL (<0.1)	13.8	12.6
5	MSEZ, Permude	2	20.7	47.5	6.1	12.6	BDL (<0.1)	BDL (<5)	10.2
Test Method			EPA- 40 CFR Part 50	IS 5182 Pt.23 : 2006	West & Gaeke	Jacob & Hochheister	IS 5182 P 22	Nessler's Method	KI Absorption Method
CPCB STANDARDS									
Industrial /Residential / Rural and Other Area			60	100	80	80	1	400	100

BDL- Below Detection Limit

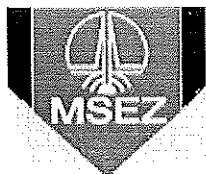
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Table 1.4(f) - AMBIENT AIR QUALITY REPORT

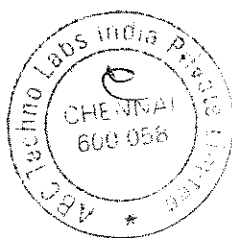
SAMPLE ID NO	ABC/MSEZ/21/AS/301215/A 1802-1803
SAMPLE DESCRIPTION	AMBIENT AIR QUALITY MONITORING.
SAMPLE DRAWN BY	ABC Techno Labs India Private Limited
NAME OF THE CLIENT	MANGALORE SPECIAL ECONOMIC ZONE LIMITED, MANGALORE
DATE SAMPLED	30-12-2015 (Monitoring duration 24hrs/day for 2 days)
REPORT DATE	06-01-2016

S.No	Location	Pollutant Concentration				CO, mg/m ³
		Benzene µg/m ³	Benzo[a]pyrene ng/m ³	Arsenic ng/m ³	Nickel ng/m ³	
4	120 ML, Water Reservoir	BDL (<0.01)	BDL (<0.1)	BDL (<1)	BDL (<1)	0.16
5	MSEZ, Permude	BDL (<0.01)	BDL (<0.1)	BDL (<1)	BDL (<1)	BDL(<0.1)
Test Method		IS 5182: Pt 11: 2006	IS 5182: Pt 12: 1991	IS 5182 P 22	IS 5182 P 22	Gas Analyser
CPCB STANDARDS						
Industrial /Residential / Rural and Other Area		5	1	6	20	2

BDL- Below Detection Limit

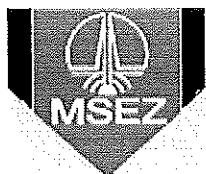
.....END OF REPORT.....

For ABC Techno Labs India Private Limited.,



A. J. Chinn
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ANNEXURE-I



NABL

National Accreditation Board for Testing and Calibration Laboratories

(An Autonomous Body under Department of Science & Technology, Govt. of India)

CERTIFICATE OF ACCREDITATION

ABC TECHNO LABS INDIA PRIVATE LIMITED

has been assessed and accredited in accordance with the standard

ISO/IEC 17025:2005

"General Requirements for the Competence of Testing & Calibration Laboratories"

for its facilities at

No. 95, D/3, Industrial Estate, Ambattur, Chennai, Tamil Nadu

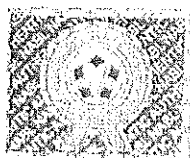
in the discipline of

CHEMICAL TESTING

(To see the scope of accreditation of this laboratory, you may also visit NABL website www.nabl-india.org)

Certificate Number T-1586

Issue Date 08/10/2015



Valid Until 07/10/2017

This certificate remains valid for the Scope of Accreditation as specified in the annexure subject to continued satisfactory compliance to the above standard & the additional requirements of NABL.

Signed for and on behalf of NABL

N. Venkateswaran

N. Venkateswaran
Program Manager

Anil Relia

Anil Relia
Director

Prof. S. K. Joshi

Prof. S. K. Joshi
Chairman



भारत का राजपत्र The Gazette of India

असाधारण
EXTRAORDINARY

भाग II—खण्ड 3—उप-खण्ड (ii)
PART II—Section 3—Sub-section (ii)

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No.1573]

NEW DELHI, WEDNESDAY, AUGUST 6, 2014/SHRAVANA 15, 1936

पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय

अधिसूचना

नई दिल्ली, 6 अगस्त, 2014

का.आ. 2003(अ).— केन्द्रीय सरकार, पर्यावरण (संरक्षण) नियमावली, 1986 के नियम 10 के साथ पठित पर्यावरण (संरक्षण) अधिनियम, 1986 (1986 का 29) की धारा 12 की उप-धारा (1) के खंड (ख) और धारा 13 द्वारा प्रदत्त शक्तियों का प्रयोग करते हुए, भारत सरकार के पर्यावरण और वन मंत्रालय की अधिसूचना संख्यांक का.आ.1174(अ), तारीख 18 जुलाई, 2007 में निम्नलिखित और संशोधन करती है, अर्थात् :—

2. उक्त अधिसूचना से उपाबद्ध सारणी में,

(क) क्रम संख्यांक 120 और उससे संबंधित प्रविष्टियों के पश्चात् निम्नलिखित क्रम संख्यांक और प्रविष्टियां अंतःस्थापित की जाएंगी अर्थात् :—

(1)	(2)	(3)	(4)
" 121	मैसर्स एबीसी टक्नो लैब्स इंडिया प्राइवेट लिमिटेड, सं० 95-डी/3, इंडस्ट्रियल एस्टेट, अम्बतूर, चेन्नई - 600058 (तमिलनाडु)	(1) डॉ० जी सुंदर (2) श्री पी० सैथिल कुमार (3) श्री ए० रॉबसन चिन्नदुरै	06.08.2014 से 05.08.2019
122	मैसर्स एडवर्ड फुड रिसर्च एंड एनैलसिस सेन्टर, सुभाष नगर, पी०ओ० नीलगंज बाजार, पी०एस० बारासात, जिला० नार्थ 24 पीजीएस, कोलकाता - 700121 (पश्चिम बंगाल)	(1) डॉ० देवोतम बनर्जी (2) श्री अलोके कुमार दत्ता (3) श्री सुरेश कुमार मंडल	06.08.2014 से 05.08.2019
123	मैसर्स कीवी ईको लेबोरेटरीज प्राइवेट लिमिटेड, प्लॉट सं० 19, एसवाई सं० 343, एलिप, इंडस्ट्रियल एस्टेट, गजुलमरम गाँव, कुथुल्लपुर (एमडी), जिला रंगारेड्डी, (तेलंगाना)	(1) डॉ० रजनी कुमारी (2) श्री एन०पी० विश्वनाथ (3) डॉ० पी० सरिता	06.08.2014 से 05.08.2019
124	मैसर्स नवेगा इंवायरो इंजीनियर्स एंड कन्सल्टेन्ट, रवि चैंबर्स, प्लॉट नं० 100/1, मकान सं० 1-96/100, कवुरि हिल्स, मधापुर, हैदराबाद - 500033 (तेलंगाना)	(1) श्री चेल्लि चिरंजीवी (2) श्री चलापथी कोदैअह गिरी (3) सुश्री अश्वनीदेवी कोमारी रेड्डी	06.08.2014 से 05.08.2019
125	मैसर्स कल्याणी लेबोरेटरीज प्राइवेट लिमिटेड, प्लॉट सं० 841 - ए, रसुलगढ़, भुवनेश्वर - 751010 (ओडिशा)	(1) डॉ० देबाशीष बिस्वाल (2) डॉ० रेखा नायक	06.08.2014 से

		(3) श्री दिगम्बर अरुखा	05.08.2019
126	मैसर्स भरुच इन्वायरो इन्फ्रास्ट्रक्चर लिमिटेड (बीईआईएल), ऐनलिटिकल रिसर्च लेबोरेटरी, प्लॉट सं० 9701 - 16, जीआईडीसी, अंकलेश्वर, जिला भरुच- 393002 (गुजरात)	(1) डॉ० हितेंद्र कुमार जानी (2) श्री नरेन्द्र बी० पटेल (3) श्री धर्मेस आई० पटेल	06.08.2014 से 05.08.2019 ।"

[फा०सं० क्यू-15018/23/2013-सीपीडब्ल्यू]

डॉ. राशिद हसन, सलाहकार

टिप्पण : मूल अधिसूचना भारत के राजपत्र, असाधारण, में संख्यांक. का.आ. 1174(अ), तारीख 18 जुलाई, 2007 द्वारा प्रकाशित की गई थी और तत्पश्चात् अधिसूचना सं० का.आ. 1539(अ), तारीख 13 सितंबर, 2007, का.आ. 1811(अ), तारीख 24 अक्टूबर, 2007, का.आ. 55(अ), तारीख 9 जनवरी, 2008, का.आ. 428(अ), तारीख 4 मार्च, 2008, का.आ. 865(अ), तारीख 11 अप्रैल, 2008, का.आ. 1894(अ), तारीख 31 जुलाई, 2008, का.आ. 2728(अ), तारीख 25 नवंबर, 2008, का.आ. 1356(अ), तारीख 27 मई, 2009, का.आ.1802(अ) तारीख 22 जुलाई, 2009, का.आ. 2399(अ) तारीख 18 सितंबर, 2009, का.आ. 3122(अ), तारीख 7 दिसंबर, 2009, का.आ. 3123(अ), तारीख 7 दिसंबर, 2009, का.आ. 142(अ), तारीख 21 जनवरी, 2010, का.आ. 619(अ), तारीख 19 मार्च, 2010, का.आ. 1662(अ), तारीख 13 जुलाई, 2010, का.आ. 2390(अ), तारीख 30 सितंबर, 2010, का.आ. 2904 (अ), तारीख 8 दिसंबर, 2010, का.आ. 181(अ), तारीख 28 जनवरी, 2011, का.आ. 692(अ), तारीख 5 अप्रैल, 2011, का.आ. 1537(अ), तारीख 6 जुलाई, 2011, का.आ. 1754(अ), तारीख 28 जुलाई, 2011, का.आ. 2609(अ), तारीख 22 नवंबर, 2011, का.आ. 264(अ), तारीख 13 फरवरी, 2012, का.आ. 1150(अ), तारीख 22 मई, 2012, का.आ. 2039(अ), तारीख 5 सितंबर, 2012, का.आ. 2802(अ), तारीख 27 नवंबर, 2012 और का.आ. 2850(अ), तारीख 7 दिसंबर, 2012 तथा का.आ. 592(अ), तारीख 8 मार्च, 2013, का.आ. 945(अ), तारीख 8 अप्रैल, 2013, का.आ.2287(अ), तारीख 27 जुलाई, 2013, का.आ.2288(अ), तारीख 27 जुलाई, 2013 और का.आ.3489(अ), तारीख 26 नवंबर, 2013, का.आ. 21(अ), तारीख 3 जनवरी, 2014, का.आ. 561(अ), तारीख 26 फरवरी, 2014, का.आ. 1205 (अ), तारीख 5 मई, 2014, का.आ. 1190 (अ), तारीख 2 मई, 2014, और का.आ. 1680 (अ), तारीख 2 जुलाई, 2014, द्वारा उसका संशोधन किया गया ।

MINISTRY OF ENVIRONMENT, FORESTS AND CLIMATE CHANGE NOTIFICATION

New Delhi, the 6th August, 2014

S.O. 2003(E).—In exercise of the powers conferred by clause (b) of sub-section (1) of Section 12 and Section 13 of the Environment (Protection) Act, 1986 (29 of 1986) read with rule 10 of the Environment (Protection) Rules, 1986, the Central Government hereby makes the following further amendments in the notification of the Government of India in the Ministry of Environment and Forests, number S.O. 1174(E), dated the 18th July, 2007, namely :—

In the TABLE to the said notification,—

(a) after serial number 120 and the entries relating thereto, the following serial numbers and entries shall be inserted, namely :—

(1)	(2)	(3)	(4)
"121	M/s. ABC Techno Labs India Private Limited, No. 95-D/3, Industrial Estate, Ambattur, Chennai – 600 058 (Tamil Nadu)	(1) Dr. G. Sunder (2) Mr.P. Senthil Kumar (3) Mr. A. Robson Chinnadurai	06.08. 2014 to 05.08. 2019
122	M/s. Edward Food Research and Analysis Centre Ltd., Subhas Nagar, P.O. Nilgunj Bazar, P.S.: Barasat, District- North 24 PGS, Kolkata - 700121 (West Bengal)	(1) Dr. Devottam Banerjee (2) Mr. Alope Kumar Datta (3) Mr. Suresh Kumar Mandal	06 .08. 2014 to 05.08. 2019
123	M/s. Kiwis Eco Laboratories Private Limited, Plot No. 19, Sy. No.342, ALEAP Industrial Estate, Gajularamaram Village - Quthbullpur (MD), District Rangareddy - 500090 (Thelangana)	(1) Dr. Rajani Kumari (2) Mr. N.P. Viswanath (3) Dr. P. Saritha	06 .08. 2014 to 05.08. 2019
124	M/s. Navega Enviro Engineers and Consultants, Ravi Chambers, Plot No.100/1, H.No.1-96/100, Kavuri Hills, Madhapur, Hyderabad - 500033	(1) Mr. Chelli Chiranjeevi (2) Mr. Chalapathi Kondaiah Gari	06 .08. 2014 to 05.08. 2019

	(Telangana)	(3) Ms. Aswinidevi Kommireddy	
125	M/s. Kalyani Laboratories Private Limited, Plot No. 841-A, Rasulgarh Bhubaneswar-751010 (Odisha)	(1) Dr. Debasis Biswal (2) Dr. Rekha Nayak (3) Mr. Digambar Arukha	06 .08. 2014 to 05.08. 2019
126	M/s. Bharuch Enviro Infrastructure Limited (BEIL), Analytical Research Laboratory, Plot No. 9701-16, GIDC, Ankleshwar, District-Bharuch – 393002 (Gujarat)	(1) Dr. Hitendra Kumar Jani (2) Mr. Narendra B. Patel (3) Mr. Dharmesh I. Patel	06 .08. 2014 to 05.08. 2019. "

[F. No. Q.15018/23/2013-CPW]

Dr. RASHID HASAN, Advisor

Note.—The principal notification was published in the Gazette of India, Extraordinary *vide* number S.O. 1174 (E), dated the 18th July, 2007 and subsequently amended *vide* notification numbers S.O. 1539 (E), dated the 13th September, 2007, S.O.1811(E), dated the 24th October, 2007, S.O.55(E), dated the 9th January, 2008, S.O.428(E), dated the 4th March, 2008, S.O.865(E) dated the 11th April, 2008, S.O.1894(E), dated the 31st July, 2008, S.O.2728(E), dated the 25th November, 2008, S.O.1356(E), dated the 27th May, 2009, S.O.1802(E), dated the 22nd July, 2009, S.O. 2399(E), dated the 18th September, 2009, S.O.3122(E), dated the 7th December, 2009, S.O.3123(E), dated the 7th December, 2009, No. S.O. 142(E), dated the 21st January, 2010, S.O.619(E), dated the 19th March, 2010, S.O.1662(E) dated the 13th July, 2010, S.O.2390(E), dated the 30th September, 2010, S.O.2904(E), dated the 8th December, 2010, S.O.181(E), dated the 28th January, 2011, S.O. 692(E), dated the 5th April, 2011, S.O.1537(E), dated the 6th July, 2011, S.O.1754(E), dated the 28th July, 2011, S.O. 2609 (E) dated the 22nd November, 2011, S.O.264 (E), dated the 13th February, 2012, S.O.1150(E), dated the 22nd May, 2012, S.O. 2039(E), dated the 5th September, 2012, S.O. 2802(E), dated the 27th November, 2012, S.O. 2850(E), dated the 7th December, 2012, S.O. 592 (E), dated the 8th March, 2013, S.O.945(E), dated the 8th April, 2013, S.O.2287(E), dated the 27th July, 2013, S.O.2288(E), dated the 27th July, 2013, S.O.3489(E) dated the 26th November, 2013, S.O.21(E), dated 3rd January, 2014, S.O.561(E), the 26th February, 2014, S.O.1205(E), dated the 5th May, 2014, S.O.1190(E), dated the 2nd May, 2014 and S.O.1680(E), dated the 2nd July, 2014.



ANNEXURE-II

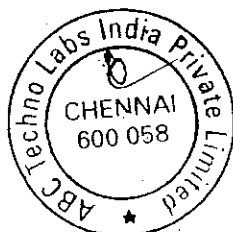


ENVIRONMENTAL MONITORING REPORT
SPECIAL ECONOMIC ZONE LIMITED, MANGALORE



JANUARY - 2016

Prepared by:



ABC Techno Labs India Private Limited

An ISO : 9001:2008, ISO :14001:2004 & OHSAS : 18001:2007 Certified Company

(Accredited by NABL, NABET, MoEF)

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Environmental Monitoring Report – Mangalore Special
Economic zone Limited, Mangalore.

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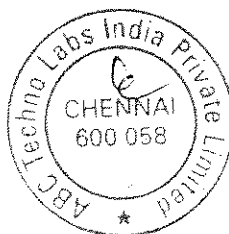
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ANNEXURE

Annexure -I	MoEF Certificate/NABL Certificate
Annexure -II	Sampling Location Map.





ENVIRONMENTAL MONITORING REPORT

1.0. Introduction:

Mangalore Special Economic Zone Limited is located 8 km aerielly to North East of New Mangalore Port and is adjacent to the existing refinery of MRPL on its West. The Industrial estate of the District, namely Baikampady is located southwest of MSEZ. The Mangalore Airport is about 5 km South East of MSEZ.

1.1. Description of the Organization:

M/s. **ABC Techno Labs India Private Limited, Chennai**, an ISO 9001, ISO 14001 & OHSAS 18001 Certified Company has been accredited by,

- National Accreditation Board for Education and Training (NABET), a division of Quality Council of India (QCI).
- Recognized under EP Act, 1986 by Ministry of Environment and Forest.
- National Accreditation Board for Testing and Calibration Laboratories (NABL), an autonomous body under the Department of Science & Technology, Government of India.

The certificate of authorization is enclosed in the Annexure-I.

We offer the following services,

- Environmental Impact Assessment (EIA) & Environmental Management Plan (EMP) for Infrastructure & Industrial Projects.
- Social Impact Assessment Studies including Rehabilitation & Resettlement
- Environmental Monitoring
- Environmental Audits
- Capacity Building for Environmental Management
- Solid Waste Management
- Effective Management of Resources and Wastes
- Risk Assessment & Management Studies



1.2. Scope of Work:

The scope of the work is to conduct Environmental monitoring at Special Economic Zone, Mangalore, following the guidelines and regulations of MoEF/CPCB standards. The scope of the work for the month of January 2016 is to conduct ambient air quality monitoring at five locations and ground water quality monitoring at ten locations, Sampling Locations of each category is given in annexure - II.

2.0. Ambient Air Quality Monitoring Details:

Ambient air quality monitoring (AAQM) was carried out at five locations with due consideration to the meteorological conditions of the Project area. Ambient air quality monitoring was carried out at each location on 24 hourly basis on two consecutive days per month. The details of AAQ monitoring stations are given in Table 1.1.

Table - 1.1. Details of Ambient Air Monitoring Locations

STATION CODE	NAME OF THE LOCATIONS	GEOGRAPHICAL LOCATION
AAQ1	120 ML Water Reservoir	N-12°59'13.40" E-74°52'03.00"
AAQ2	MSEZ, Permude	N-12°59'54.00" E-74°52'53.60"
AAQ3	GSS3-10 ML Water Reservoir	N-12°58'57.70" E-74°51'30.10"
AAQ4	CETP Location	N-12°59'51.40" E-74°51'24.70"
AAQ5	Bajpe	N-12°58'32.80" E-74°52'10.40"

2.1.1. Method used for Air Quality Monitoring:

Respirable Dust Sampler and Fine Particulate Samplers were used for collecting Particulate Matter of size less than 10 μm (PM_{10}) and 2.5 μm ($\text{PM}_{2.5}$) respectively. Gaseous Samplers were used for sampling gaseous pollutants such as SO_2 , NO_x Ammonia and Ozone (O_3). Organic vapour sampler



was used to sample Hydrocarbon. Gas analyzer was used to estimate Carbon monoxide (CO) level in ambient air.

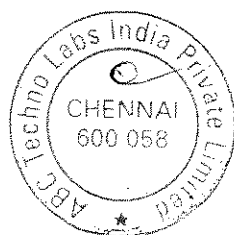
The Analytical techniques used for ambient air quality monitoring and its minimum detectable limit for each parameter is tabulated in Table 1.2.

Table - 1.2. Analytical Techniques Used for Ambient Air Quality Monitoring

S.NO	PARAMETER	TECHNIQUE	MINIMUM DETECTABLE LIMIT
1	Particulate Matter PM ₁₀	Fine Particulate Sampler (Gravimetric method)	5.0 µg/m ³
2	Particulate Matter PM _{2.5}	Fine Particulate Sampler (Gravimetric method)	5.0 µg/m ³
3	Sulphur di Oxide	Modified West & Gaeke Method	5.0 µg/m ³
4	Nitrogen Oxide	Jacob and Hochheiser Method	5.0 µg/m ³
5	Carbon monoxide	Gas Analyser	0.1 ppm
6	Ammonia	Nessler's Method	5 µg/m ³
7	Ozone	KI Absorption and Colorimetric	5 µg/m ³
8	Benzene,	IS 5182: Pt 11: 2006	0.01 µg/m ³
9	Benzo[a]pyrene	IS 5182: Pt 12: 1991	0.1 ng/m ³
10	Lead,	IS 5182 P 22: 2004	0.1 µg/m ³
11	Arsenic, Nickel	IS 5182 P 22: 2004	1 ng/m ³

2.1.2. Micro-Meteorology :

Wind Speed, Predominant Wind Direction, Temperature, Relative Humidity between 01-01-2016 and 31-01-2016 at MSEZ is given in Table 1.3.

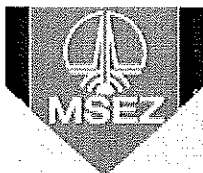




Environmental Monitoring Report - Mangalore Special Economic Zone Limited, Mangalore.

Table-1.3- Micro-Meteorology

DATE	TEMPERATURE (°C)		RELATIVE HUMIDITY (%)		WIND SPEED (Km/hr)		PREDOMINANT WIND DIRECTION
	MIN	MAX	MIN	MAX	MIN	MAX	
01-01-2016	20	34	18	73	5.6	14.8	Southeast
02-01-2016	18	35	10	73	5.6	14.8	East
03-01-2016	19	35	15	78	5.6	14.8	East
04-01-2016	20	35	15	83	5.6	16.7	East
05-01-2016	19	33	21	78	5.6	14.8	East Southeast
06-01-2016	20	34	15	88	5.6	18.5	East Southeast
07-01-2016	20	34	30	83	5.6	14.8	East
08-01-2016	21	33	43	94	5.6	14.8	West Northwest
09-01-2016	22	34	21	83	5.6	16.7	East
10-01-2016	19	33	18	83	5.6	18.5	East
11-01-2016	20	34	23	83	5.6	14.8	East
12-01-2016	20	33	29	88	5.6	16.7	West Northwest
13-01-2016	20	32	31	88	5.6	14.8	East
14-01-2016	21	32	42	88	5.6	18.5	North
15-01-2016	21	32	38	88	5.6	14.8	East
16-01-2016	21	32	36	88	5.6	14.8	North
17-01-2016	20	33	27	88	5.6	14.8	East
18-01-2016	20	30	45	88	5.6	14.8	East Northeast
19-01-2016	22	30	50	83	5.6	16.7	North
20-01-2016	22	33	34	88	5.6	18.5	North
21-01-2016	21	33	40	89	5.6	105.6	West
22-01-2016	21	35	39	94	5.6	18.5	West
23-01-2016	23	34	38	94	5.6	16.7	East
24-01-2016	23	34	38	89	5.6	16.7	East
25-01-2016	23	33	38	84	5.6	20.4	West
26-01-2016	22	34	26	100	5.6	22.2	North
27-01-2016	22	32	33	83	5.6	20.4	Northwest
28-01-2016	20	31	44	94	5.6	18.5	West Northwest
29-01-2016	21	32	50	100	5.6	20.4	North
30-01-2016	22	33	28	94	5.6	18.5	East Northeast
31-01-2016	21	36	22	94	5.6	22.2	West



2.1.3. Wind Rose:

The wind roses diagram for the month of **January 2016** at Mangalore SEZ is depicted in Figure 1.1.

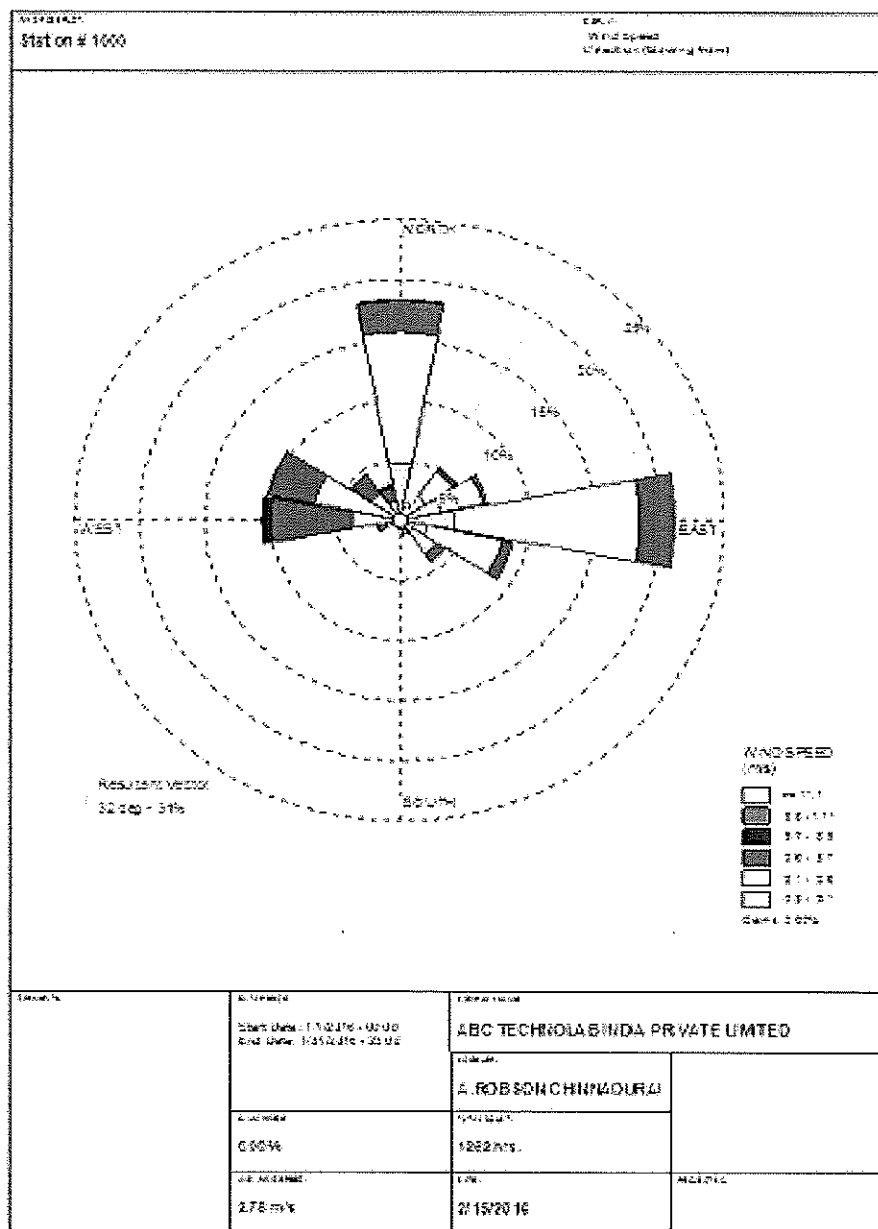
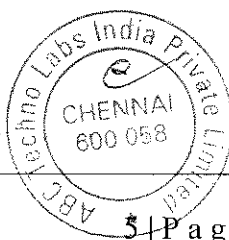


Figure 1.1. Wind Rose Diagram – January 2016





Environmental Monitoring Report – Mangalore Special Economic Zone Limited, Mangalore.

2.1.4. AMBIENT AIR QUALITY RESULTS:

The 24 hourly average results of Ambient Air Quality Monitoring of two consecutive days for the month of **January 2016** are presented in Table-1.4(a), 1.4 (b), 1.4(c), 1.4(d), 1.4(e) and 1.4(f). The obtained results are compared with the standards prescribed by Central Pollution Control Board (CPCB) for “Industrial, Rural, Residential and other areas”.

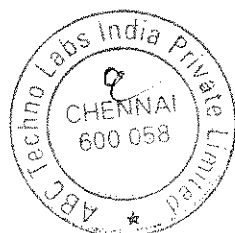
Table 1.4 (a)- AMBIENT AIR QUALITY REPORT

SAMPLE ID NO	ABC/MSEZ/22/AS/280116/A 2128-2129
SAMPLE DESCRIPTION	AMBIENT AIR QUALITY MONITORING.
SAMPLE DRAWN BY	ABC Techno Labs India Private Limited
NAME OF THE CLIENT	MANGALORE SPECIAL ECONOMIC ZONE LIMITED, MANGALORE
DATE SAMPLED	28-01-2016 (Monitoring duration 24hrs/day for 2 days)
REPORT DATE	11-01-2016

S.No	Location	Height GL(m)	Pollutant Concentration in $\mu\text{g}/\text{m}^3$						
			PM _{2.5}	PM ₁₀	SO ₂	NO _x	Pb	NH ₃	O ₃
1	CETP Location	2	23.8	52.6	11.1	15.2	BDL (<0.1)	14.5	11.1
2	MSEZ-GSS 3	2	25.4	58.4	12.3	19.3	BDL (<0.1)	17.1	13.4
Test Method			EPA- 40 CFR Part 50	IS 5182 Pt.23 : 2006	West & Gaeke	Jacob & Hochheister	IS 5182 P 22	Nessler's Method	KI Absorption Method
CPCB STANDARDS									
Industrial /Residential / Rural and Other Area			60	100	80	80	1	400	100

BDL- Below Detection Limit

Contd.....



For ABC Techno Labs India Private Limited.,

[Signature]
AUTHORIZED SIGNATORY 15/01/16



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Table 1.4(b) - AMBIENT AIR QUALITY REPORT

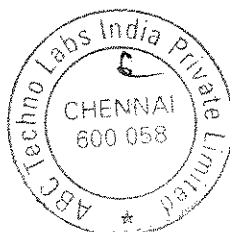
SAMPLE ID NO	ABC/MSEZ/22/AS/280116/A 2128-2129
SAMPLE DESCRIPTION	AMBIENT AIR QUALITY MONITORING.
SAMPLE DRAWN BY	ABC Techno Labs India Private Limited
NAME OF THE CLIENT	MANGALORE SPECIAL ECONOMIC ZONE LIMITED, MANGALORE
DATE SAMPLED	28-01-2016 (Monitoring duration 24hrs/day for 2 days)
REPORT DATE	11-01-2016

S.No	Location	Pollutant Concentration				CO, mg/m ³
		Benzene µg/m ³	Benzo[a]pyrene ng/m ³	Arsenic ng/m ³	Nickel ng/m ³	
1	CETP Location	BDL (<0.01)	BDL (<0.1)	BDL (<1)	BDL (<1)	BDL(<0.1)
2	MSEZ-GSS 3	BDL (<0.01)	BDL (<0.1)	BDL (<1)	BDL (<1)	0.23
Test Method		IS 5182: Pt 11: 2006	IS 5182: Pt 12: 1991	IS 5182 P 22	IS 5182 P 22	Gas Analyser
CPCB STANDARDS						
Industrial /Residential / Rural and Other Area		5	1	6	20	2

BDL- Below Detection Limit

Contd.....

For ABC Techno Labs India Private Limited.,



A. J. [Signature]
AUTHORIZED SIGNATORY



Environmental Monitoring Report – Mangalore Special Economic Zone Limited, Mangalore.

Table 1.4(c) - AMBIENT AIR QUALITY REPORT

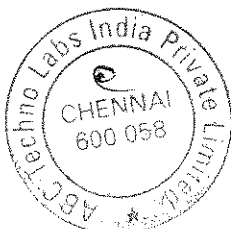
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SAMPLE DRAWN BY	ABC Techno Labs India Private Limited
NAME OF THE CLIENT	MANGALORE SPECIAL ECONOMIC ZONE LIMITED, MANGALORE
DATE SAMPLED	28-01-2016 (Monitoring duration 24hrs/day for 2 days)
REPORT DATE	11-01-2016

S.No	Location	Height GL(m)	Pollutant Concentration in $\mu\text{g}/\text{m}^3$						
			PM _{2.5}	PM ₁₀	SO ₂	NO _x	Pb	NH ₃	O ₃
3	Baipe	2	20.3	47.7	6.1	13.2	BDL (<0.1)	BDL(<5)	10.2
Test Method			EPA- 40 CFR Part 50	IS 5182 Pt.23 : 2006	West & Gaeke	Jacob & Hochheister	IS 5182 P 22	Nessler's Method	KI Absorption Method
CPCB STANDARDS									
Industrial /Residential / Rural and Other Area			60	100	80	80	1	400	100

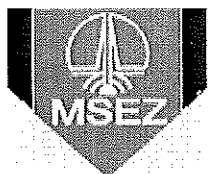
BDL- Below Detection Limit

Contd.....

For ABC Techno Labs India Private Limited.,



[Signature]
AUTHORIZED SIGNATORY 15/02/16



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Table 1.4(d) - AMBIENT AIR QUALITY REPORT

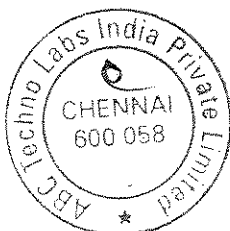
SAMPLE ID NO	ABC/MSEZ/22/AS/280116/A 2130
SAMPLE DESCRIPTION	AMBIENT AIR QUALITY MONITORING.
SAMPLE DRAWN BY	ABC Techno Labs India Private Limited
NAME OF THE CLIENT	MANGALORE SPECIAL ECONOMIC ZONE LIMITED, MANGALORE
DATE SAMPLED	28-01-2016 (Monitoring duration 24hrs/day for 2 days)
REPORT DATE	11-01-2016

S.No	Location	Pollutant Concentration				CO, mg/m ³
		Benzene µg/m ³	Benzo[a]pyrene ng/m ³	Arsenic ng/m ³	Nickel ng/m ³	
3	Baipe	BDL (<0.01)	BDL (<0.1)	BDL (<1)	BDL (<1)	BDL(<0.1)
Test Method		IS 5182: Pt 11: 2006	IS 5182: Pt 12: 1991	IS 5182 P 22	IS 5182 P 22	Gas Analyser
CPCB STANDARDS						
Industrial /Residential / Rural and Other Area		5	1	6	20	2

BDL- Below Detection Limit

Contd.....

For ABC Techno Labs India Private Limited.,



[Signature]
18/02/16
AUTHORIZED SIGNATORY



Environmental Monitoring Report – Mangalore Special Economic Zone Limited, Mangalore.

Table 1.4(e) - AMBIENT AIR QUALITY REPORT

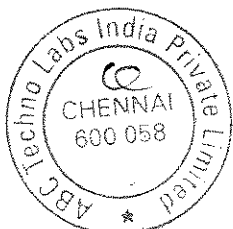
SAMPLE ID NO	ABC/MSEZ/22/AS/300116/A 2131-2132
SAMPLE DESCRIPTION	AMBIENT AIR QUALITY MONITORING.
SAMPLE DRAWN BY	ABC Techno Labs India Private Limited
NAME OF THE CLIENT	MANGALORE SPECIAL ECONOMIC ZONE LIMITED, MANGALORE
DATE SAMPLED	28-01-2016 (Monitoring duration 24hrs/day for 2 days)
REPORT DATE	11-01-2016

S.No	Location	Height GL(m)	Pollutant Concentration in $\mu\text{g}/\text{m}^3$						
			PM _{2.5}	PM ₁₀	SO ₂	NO _x	Pb	NH ₃	O ₃
4	120 ML, Water Reservoir	2	22.5	55.4	9.7	12.7	BDL (<0.1)	16.2	11.8
5	MSEZ, Permude	2	18.2	44.6	5.5	11.6	BDL (<0.1)	BDL (<5)	9.7
Test Method			EPA- 40 CFR Part 50	IS 5182 Pt.23 : 2006	West & Gaeke	Jacob & Hochheister	IS 5182 P 22	Nessler's Method	KI Absorption Method
CPCB STANDARDS									
Industrial /Residential / Rural and Other Area			60	100	80	80	1	400	100

BDL- Below Detection Limit

Contd.....

For ABC Techno Labs India Private Limited,



[Signature] 15/12/16
AUTHORIZED SIGNATORY



Environmental Monitoring Report – Mangalore Special Economic Zone Limited, Mangalore.

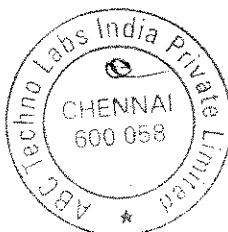
Table 1.4(f) - AMBIENT AIR QUALITY REPORT

SAMPLE ID NO	ABC/MSEZ/22/AS/300116/A 2131-2132
SAMPLE DESCRIPTION	AMBIENT AIR QUALITY MONITORING.
SAMPLE DRAWN BY	ABC Techno Labs India Private Limited
NAME OF THE CLIENT	MANGALORE SPECIAL ECONOMIC ZONE LIMITED, MANGALORE
DATE SAMPLED	28-01-2016 (Monitoring duration 24hrs/day for 2 days)
REPORT DATE	11-01-2016

S.No	Location	Pollutant Concentration				CO, mg/m ³
		Benzene µg/m ³	Benzo[a]pyrene ng/m ³	Arsenic ng/m ³	Nickel ng/m ³	
4	120 ML, Water Reservoir	BDL (<0.01)	BDL (<0.1)	BDL (<1)	BDL (<1)	0.15
5	MSEZ, Permude	BDL (<0.01)	BDL (<0.1)	BDL (<1)	BDL (<1)	BDL(<0.1)
Test Method		IS 5182: Pt 11: 2006	IS 5182: Pt 12: 1991	IS 5182 P 22	IS 5182 P 22	Gas Analyser
CPCB STANDARDS						
Industrial /Residential / Rural and Other Area		5	1	6	20	2

BDL- Below Detection Limit

.....END OF REPORT.....



For ABC Techno Labs India Private Limited.,

[Signature]
AUTHORIZED SIGNATORY



ANNEXURE-I



NABL

National Accreditation Board for Testing and Calibration Laboratories

(An Autonomous Body under Department of Science & Technology, Govt. of India)

CERTIFICATE OF ACCREDITATION

ABC TECHNO LABS INDIA PRIVATE LIMITED

has been assessed and accredited in accordance with the standard

ISO/IEC 17025:2005

"General Requirements for the Competence of Testing & Calibration Laboratories"

for its facilities at

No. 95, D/3, Industrial Estate, Ambattur, Chennai, Tamil Nadu

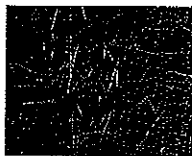
in the discipline of

CHEMICAL TESTING

(To see the scope of accreditation of this laboratory, you may also visit NABL website www.nabl-india.org)

Certificate Number T-1586

Issue Date 08/10/2015



Valid Until 07/10/2017

This certificate remains valid for the Scope of Accreditation as specified in the annexure subject to continued satisfactory compliance to the above standard & the additional requirements of NABL.

Signed for and on behalf of NABL

N. Venkateswaran
Program Manager

Anil Rella
Director

Prof. S. K. Joshi
Chairman



भारत का राजपत्र The Gazette of India

असाधारण
EXTRAORDINARY

भाग II—खण्ड 3—उप-खण्ड (ii)
PART II—Section 3—Sub-section (ii)

प्राधिकार से प्रकाशित
PUBLISHED BY AUTHORITY

सं. 1573]

नई दिल्ली, बुधवार, अगस्त 6, 2014/श्रावण 15, 1936

No.1573]

NEW DELHI, WEDNESDAY, AUGUST 6, 2014/SHRAVANA 15, 1936

पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय

अधिसूचना

नई दिल्ली, 6 अगस्त, 2014

का.आ. 2003(अ).— केन्द्रीय सरकार, पर्यावरण (संरक्षण) नियमावली, 1986 के नियम 10 के साथ पठित पर्यावरण (संरक्षण) अधिनियम, 1986 (1986 का 29) की धारा 12 की उप-धारा (1) के खंड (ख) और धारा 13 द्वारा प्रदत्त शक्तियों का प्रयोग करते हुए, भारत सरकार के पर्यावरण और वन मंत्रालय की अधिसूचना संख्यांक का.आ.1174(अ), तारीख 18 जुलाई, 2007 में निम्नलिखित और संशोधन करती है, अर्थात् :—

2. उक्त अधिसूचना से उपाबद्ध सारणी में,

(क) क्रम संख्यांक 120 और उससे संबंधित प्रविष्टियों के पश्चात् निम्नलिखित क्रम संख्यांक और प्रविष्टियां अंतःस्थापित की जाएंगी अर्थात् :—

(1)	(2)	(3)	(4)
" 121	मैसर्स एबीसी टक्को लैब्स इंडिया प्राइवेट लिमिटेड, सं० 95-डी/3, इंडस्ट्रियल एस्टेट, अम्बतूर, चेन्नई - 600058 (तमिलनाडु)	(1) डॉ० जी सुंदर (2) श्री पी० सैथिल कुमार (3) श्री ए० रॉबसन चिन्नदुरै	06.08.2014 से 05.08.2019
122	मैसर्स एडवर्ड फुड रिसर्च एंड एनैलसिस सेन्टर, सुभाष नगर, पी०ओ० नीलगंज बाजार, पी०एस० बारासात, जिला० नार्थ 24 पीजीएस, कोलकाता - 700121 (पश्चिम बंगाल)	(1) डॉ० देवोतम बनर्जी (2) श्री अलोके कुमार दत्ता (3) श्री सुरेश कुमार मंडल	06.08.2014 से 05.08.2019
123	मैसर्स कीवी ईको लेबोरेटरीज प्राइवेट लिमिटेड, प्लॉट सं० 19, एसवाई सं० 343, एलिप, इंडस्ट्रियल एस्टेट, गजुलमरम गाँव, कुथुल्लपुर (एमडी), जिला रंगारेड्डी, (तेलंगाना)	(1) डॉ० रजनी कुमारी (2) श्री एन०पी० विश्वनाथ (3) डॉ० पी० सरिता	06.08.2014 से 05.08.2019
124	मैसर्स नवेगा इंवायरो इंजीनियर्स एंड कन्सल्टेंट, रवि चैंबर्स, प्लॉट नं० 100/1, मकान सं० 1-96/100, कवुरि हिल्स, मधापुर, हैदराबाद - 500033 (तेलंगाना)	(1) श्री चेल्लि चिरंजीवी (2) श्री चलापथी कोदैंअह गिरी (3) सुश्री अश्वनीदेवी कोमारी रेड्डी	06.08.2014 से 05.08.2019
125	मैसर्स कल्याणी लेबोरेटरीज प्राइवेट लिमिटेड, प्लॉट सं० 841 - ए, रसुलगढ़, भुवनेश्वर - 751010 (ओडिशा)	(1) डॉ० देबाशीष बिस्वाल (2) डॉ० रेखा नायक	06.08.2014 से

		(3) श्री दिगम्बर अरुखा	05.08.2019
126	मैसर्स भरुच इन्वायरो इन्फ्रास्ट्रक्चर लिमिटेड (बीईआईएल), ऐनलिटिकल रिसर्च लेबोरेटरी, प्लॉट सं० 9701 - 16, जीआईडीसी, अंकलेश्वर, जिला भरुच- 393002 (गुजरात)	(1) डॉ० हितेंद्र कुमार जानी (2) श्री नरेन्द्र बी० पटेल (3) श्री धर्मेस आई० पटेल	06.08.2014 से 05.08.2019 ।"

[फा०सं० क्यू-15018/23/2013-सीपीडब्ल्यू]

डॉ. राशिद हसन, सलाहकार

टिप्पण : मूल अधिसूचना भारत के राजपत्र, असाधारण, में संख्यांक. का.आ. 1174(अ), तारीख 18 जुलाई, 2007 द्वारा प्रकाशित की गई थी और तत्पश्चात् अधिसूचना सं० का.आ. 1539(अ), तारीख 13 सितंबर, 2007, का.आ. 1811(अ), तारीख 24 अक्तूबर, 2007, का.आ. 55(अ), तारीख 9 जनवरी, 2008, का.आ. 428(अ), तारीख 4 मार्च, 2008, का.आ. 865(अ), तारीख 11 अप्रैल, 2008, का.आ. 1894(अ), तारीख 31 जुलाई, 2008, का.आ. 2728(अ), तारीख 25 नवंबर, 2008, का.आ. 1356(अ), तारीख 27 मई, 2009, का.आ.1802(अ) तारीख 22 जुलाई, 2009, का.आ. 2399(अ) तारीख 18 सितंबर, 2009, का.आ. 3122(अ), तारीख 7 दिसंबर, 2009, का.आ. 3123(अ), तारीख 7 दिसंबर, 2009, का.आ. 142(अ), तारीख 21 जनवरी, 2010, का.आ. 619(अ), तारीख 19 मार्च, 2010, का.आ. 1662(अ), तारीख 13 जुलाई, 2010, का.आ. 2390(अ), तारीख 30 सितंबर, 2010, का.आ. 2904 (अ), तारीख 8 दिसंबर, 2010, का.आ. 181(अ), तारीख 28 जनवरी, 2011, का.आ. 692(अ), तारीख 5 अप्रैल, 2011, का.आ. 1537(अ), तारीख 6 जुलाई, 2011, का.आ. 1754(अ), तारीख 28 जुलाई, 2011, का.आ. 2609(अ), तारीख 22 नवंबर, 2011, का.आ. 264(अ), तारीख 13 फरवरी, 2012, का.आ. 1150(अ), तारीख 22 मई, 2012, का.आ. 2039(अ), तारीख 5 सितंबर, 2012, का.आ. 2802(अ), तारीख 27 नवंबर, 2012 और का.आ. 2850(अ), तारीख 7 दिसंबर, 2012 तथा का.आ. 592(अ), तारीख 8 मार्च, 2013, का.आ. 945(अ), तारीख 8 अप्रैल, 2013, का.आ.2287(अ), तारीख 27 जुलाई, 2013, का.आ.2288(अ), तारीख 27 जुलाई, 2013 और का.आ.3489(अ), तारीख 26 नवंबर, 2013, का.आ. 21(अ), तारीख 3 जनवरी, 2014, का.आ. 561(अ), तारीख 26 फरवरी, 2014, का.आ. 1205 (अ), तारीख 5 मई, 2014, का.आ. 1190 (अ), तारीख 2 मई, 2014, और का.आ. 1680 (अ), तारीख 2 जुलाई, 2014, द्वारा उसका संशोधन किया गया ।

MINISTRY OF ENVIRONMENT, FORESTS AND CLIMATE CHANGE NOTIFICATION

New Delhi, the 6th August, 2014

S.O. 2003(E).—In exercise of the powers conferred by clause (b) of sub-section (1) of Section 12 and Section 13 of the Environment (Protection) Act, 1986 (29 of 1986) read with rule 10 of the Environment (Protection) Rules, 1986, the Central Government hereby makes the following further amendments in the notification of the Government of India in the Ministry of Environment and Forests, number S.O. 1174(E), dated the 18th July, 2007, namely :—

In the TABLE to the said notification,—

(a) after serial number 120 and the entries relating thereto, the following serial numbers and entries shall be inserted, namely :—

(1)	(2)	(3)	(4)
"121	M/s. ABC Techno Labs India Private Limited, No. 95-D/3, Industrial Estate, Ambattur, Chennai – 600 058 (Tamil Nadu)	(1) Dr. G. Sunder (2) Mr.P. Senthil Kumar (3) Mr. A. Robson Chinnadurai	06.08. 2014 to 05.08. 2019
122	M/s. Edward Food Research and Analysis Centre Ltd., Subhas Nagar, P.O. Nilgunj Bazar, P.S.: Barasat, District- North 24 PGS, Kolkata - 700121 (West Bengal)	(1) Dr. Devottam Banerjee (2) Mr. Alope Kumar Datta (3) Mr. Suresh Kumar Mandal	06 .08. 2014 to 05.08. 2019
123	M/s. Kiwis Eco Laboratories Private Limited, Plot No. 19, Sy. No.342, ALEAP Industrial Estate, Gajularamaram Village - Quthbullpur (MD), District Rangareddy - 500090 (Thelangana)	(1) Dr. Rajani Kumari (2) Mr. N.P. Viswanath (3) Dr. P. Saritha	06 .08. 2014 to 05.08. 2019
124	M/s. Navega Enviro Engineers and Consultants, Ravi Chambers, Plot No.100/1, H.No.1-96/100, Kavuri Hills, Madhapur, Hyderabad - 500033	(1) Mr. Chelli Chiranjeevi (2) Mr. Chalapathi Kondaiah Gari	06 .08. 2014 to 05.08. 2019

	(Thelangana)	(3) Ms. Aswinidevi Kommireddy	
125	M/s. Kalyani Laboratories Private Limited, Plot No. 841-A, Rasulgarh Bhubaneswar-751010 (Odisha)	(1) Dr. Debasis Biswal (2) Dr. Rekha Nayak (3) Mr. Digambar Arukha	06 .08. 2014 to 05.08. 2019
126	M/s. Bharuch Enviro Infrastructure Limited (BEIL), Analytical Research Laboratory, Plot No. 9701-16, GIDC, Ankleshwar, District-Bharuch – 393002 (Gujarat)	(1) Dr. Hitendra Kumar Jani (2) Mr. Narendra B. Patel (3) Mr. Dharmesh I. Patel	06 .08. 2014 to 05.08. 2019. "

[F. No. Q.15018/23/2013-CPW]

Dr. RASHID HASAN, Advisor

Note.—The principal notification was published in the Gazette of India, Extraordinary *vide* number S.O. 1174 (E), dated the 18th July, 2007 and subsequently amended *vide* notification numbers S.O. 1539 (E), dated the 13th September, 2007, S.O.1811(E), dated the 24th October, 2007, S.O.55(E), dated the 9th January, 2008, S.O.428(E), dated the 4th March, 2008, S.O.865(E) dated the 11th April, 2008, S.O.1894(E), dated the 31st July, 2008, S.O.2728(E), dated the 25th November, 2008, S.O.1356(E), dated the 27th May, 2009, S.O.1802(E), dated the 22nd July, 2009, S.O. 2399(E), dated the 18th September, 2009, S.O.3122(E), dated the 7th December, 2009, S.O.3123(E), dated the 7th December, 2009, No. S.O. 142(E), dated the 21st January, 2010, S.O.619(E), dated the 19th March, 2010, S.O.1662(E) dated the 13th July, 2010, S.O.2390(E), dated the 30th September, 2010, S.O.2904(E), dated the 8th December, 2010, S.O.181(E), dated the 28th January, 2011, S.O. 692(E), dated the 5th April, 2011, S.O.1537(E), dated the 6th July, 2011, S.O.1754(E), dated the 28th July, 2011, S.O. 2609 (E) dated the 22nd November, 2011, S.O.264 (E), dated the 13th February, 2012, S.O.1150(E), dated the 22nd May, 2012, S.O. 2039(E), dated the 5th September, 2012, S.O. 2802(E), dated the 27th November, 2012, S.O. 2850(E), dated the 7th December, 2012, S.O. 592 (E), dated the 8th March, 2013, S.O.945(E), dated the 8th April, 2013, S.O.2287(E), dated the 27th July, 2013, S.O.2288(E), dated the 27th July, 2013, S.O.3489(E) dated the 26th November, 2013, S.O.21(E), dated 3rd January, 2014, S.O.561(E), the 26th February, 2014, S.O.1205(E), dated the 5th May, 2014, S.O.1190(E), dated the 2nd May, 2014 and S.O.1680(E), dated the 2nd July, 2014.



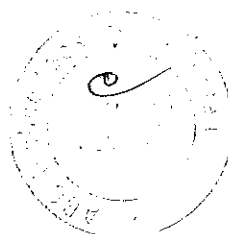
ANNEXURE-II

ENVIRONMENTAL MONITORING REPORT
SPECIAL ECONOMIC ZONE LIMITED, MANGALORE



FEBRUARY - 2016

Prepared by:



ABC Techno Labs India Private Limited

An ISO : 9001:2008, ISO :14001:2004 & OHSAS : 18001:2007 Certified Company
(Accredited by NABL, NABET, MoEF)



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Corporate Office:

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Chennai, Tamil Nadu, India - 600 040.
Ph:+91 -44 -2616 1123/ 24 /25. Fax: +91 -44 -2616 3456

Lab:

NO.95D/3, 3rd Cross Street, Sector 2, South Phase,
Ambattur Industrial Estate, Chennai - 600 058.
Ph:+91- 44 -2625 7788, 2635 7788 Fax:+91-44 -2625 7799



Environmental Monitoring Report – Mangalore Special
Economic zone Limited, Mangalore.

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2.1.1	METHOD USED FOR AIR QUALITY MONITORING	2
2.1.2	MICRO-METEOROLOGY	3
2.1.3	WIND ROSE	5
2.1.4	AMBIENT AIR QUALITY RESULTS	6
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FIGURE

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ANNEXURE

Anneure -I	MoEF Certificate
Anneure -II	Sampling Location Map.



ENVIRONMENTAL MONITORING REPORT

1.0. Introduction:

Mangalore Special Economic Zone Limited is located 8 km aerielly to North East of New Mangalore Port and is adjacent to the existing refinery of MRPL on its West. The Industrial estate of the District, namely Baikampady is located southwest of MSEZ. The Mangalore Airport is about 5 km South East of MSEZ.

1.1. Description of the Organization:

M/s. **ABC Techno Labs India Private Limited, Chennai**, an ISO 9001, ISO 14001 & OHSAS 18001 Certified Company has been accredited by,

- National Accreditation Board for Education and Training (NABET), a division of Quality Council of India (QCI).
- National Accreditation Board for Testing and Calibration Laboratories (NABL), an autonomous body under the Department of Science & Technology, Government of India.
- Recognized under EP Act, 1986 by Ministry of Environment and Forest.

The certificate of authorization is enclosed in the Annexure-I.

We offer the following services,

- Environmental Impact Assessment (EIA) & Environmental Management Plan (EMP) for Infrastructure & Industrial Projects.
- Social Impact Assessment Studies including Rehabilitation & Resettlement
- Environmental Monitoring
- Environmental Audits
- Capacity Building for Environmental Management
- Solid Waste Management
- Effective Management of Resources and Wastes
- Risk Assessment & Management Studies



1.2. Scope of Work:

The scope of the work is to conduct Environmental monitoring at Special Economic Zone, Mangalore, following the guidelines and regulations of MoEF/CPCB standards. The scope of the work for the month of February 2016 is to conduct ambient air quality monitoring at five locations, Ground water quality monitoring at eight locations, Noise level monitoring at two locations. Sampling Locations of each category is given in annexure - II.

2.0. Ambient Air Quality Monitoring Details:

Ambient air quality monitoring (AAQM) was carried out at five locations with due consideration to the meteorological conditions of the Project area. Ambient air quality monitoring was carried out at each location on 24 hourly basis on two consecutive days per month. The details of AAQ monitoring stations are given in **Table 1.1**.

Table - 1.1. Details of Ambient Air Monitoring Locations

STATION CODE	NAME OF THE LOCATIONS	GEOGRAPHICAL LOCATION
AAQ1	120 ML Water Reservoir	N-12°59'13.40" E-74°52'03.00"
AAQ2	MSEZ, Permude	N-12°59'54.00" E-74°52'53.60"
AAQ3	GSS3-10 ML Water Reservoir	N-12°58'57.70" E-74°51'30.10"
AAQ4	CETP Location	N-12°59'51.40" E-74°51'24.70"
AAQ5	Bajpe	N-12°58'32.80" E-74°52'10.40"

2.1.1. Method used for Air Quality Monitoring:

Respirable Dust Sampler and Fine Particulate Samplers were used for collecting Particulate Matter of size less than 10 μm (PM_{10}) and 2.5 μm ($\text{PM}_{2.5}$) respectively. Gaseous Samplers were used for sampling gaseous pollutants such as SO_2 , NO_x Ammonia and Ozone (O_3). Organic vapour sampler



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was used to sample Hydrocarbon. Gas analyzer was used to estimate Carbon monoxide (CO) level in ambient air.

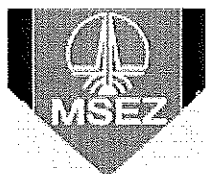
The Analytical techniques used for ambient air quality monitoring and its minimum detectable limit for each parameter is tabulated in **Table 1.2.**

Table - 1.2. Analytical Techniques Used for Ambient Air Quality Monitoring

S.NO	PARAMETER	TECHNIQUE	MINIMUM DETECTABLE LIMIT
1	Particulate Matter PM ₁₀	Fine Particulate Sampler (Gravimetric method)	5.0 µg/m ³
2	Particulate Matter PM _{2.5}	Fine Particulate Sampler (Gravimetric method)	5.0 µg/m ³
3	Sulphur di Oxide	Modified West & Gaeke Method	5.0 µg/m ³
4	Nitrogen Oxide	Jacob and Hochheiser Method	5.0 µg/m ³
5	Carbon monoxide	Gas Analyser	0.1 ppm
6	Ammonia	Nessler's Method	5 µg/m ³
7	Ozone	KI Absorption and Colorimetric	5 µg/m ³
8	Benzene,	IS 5182: Pt 11: 2006	0.01 µg/m ³
9	Benzo[a]pyrene)	IS 5182: Pt 12: 1991	0.1 ng/m ³
10	Lead,	IS 5182 P 22: 2004	0.1 µg/m ³
11	Arsenic, Nickel	IS 5182 P 22: 2004	1 ng/m ³

2.1.2. Micro-Meteorology :

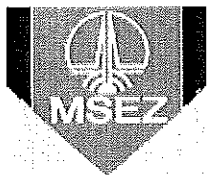
Wind Speed, Predominant Wind Direction, Temperature, Relative Humidity between 01-02-2016 and 29-02-2016 at MSEZ is given in Table 1.3.



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Table-1.3- Micro-Meteorology

DATE	TEMPERATURE (°C)		RELATIVE HUMIDITY (%)		WIND SPEED (Km/hr)		PREDOMINANT WIND DIRECTION
	MIN	MAX	MIN	MAX	MIN	MAX	
01-02-2016	28	36	12	89	5.6	14.8	East North East
02-02-2016	27	34	26	89	5.6	18.5	East
03-02-2016	20	32	34	96	3.7	14.8	East
04-02-2016	20	33	39	89	5.6	16.7	East
05-02-2016	22	32	43	94	5.6	16.7	East
06-02-2016	22	32	49	94	5.6	16.7	North East
07-02-2016	23	32	43	89	5.6	18.5	North
08-02-2016	22	33	46	89	5.6	198.2	North
09-02-2016	23	32	50	89	5.6	18.5	North
10-02-2016	23	33	50	94	5.6	18.5	North West
11-02-2016	24	32	47	89	5.6	22.2	North
12-02-2016	23	32	50	89	5.6	16.7	North
13-02-2016	22	31	44	89	5.6	18.5	North
14-02-2016	22	32	44	83	5.6	22.2	North West
15-02-2016	22	33	40	89	5.6	18.5	North
16-02-2016	21	32	35	89	5.6	22.2	North West
17-02-2016	22	35	32	89	5.6	20.4	North West
18-02-2016	23	37	23	94	5.6	22.2	East South East
19-02-2016	24	35	31	89	9.3	25.9	West
20-02-2016	23	34	37	94	5.6	18.5	West
21-02-2016	23	33	48	94	5.6	18.5	West
22-02-2016	25	34	54	94	5.6	18.5	West North West
23-02-2016	24	33	53	94	5.6	22.2	West
24-02-2016	25	33	52	89	5.6	20.4	West North West
25-02-2016	24	33	46	94	5.6	18.5	North
26-02-2016	24	33	32	83	5.6	18.5	West
27-02-2016	23	34	40	94	5.6	22.2	East
28-02-2016	24	35	40	89	5.6	22.2	East North East
29-02-2016	24	35	41	89	5.6	18.5	West North West



2.1.3. Wind Rose:

The wind roses diagram for the month of **February 2016** at Mangalore SEZ is depicted in Figure 1.1.

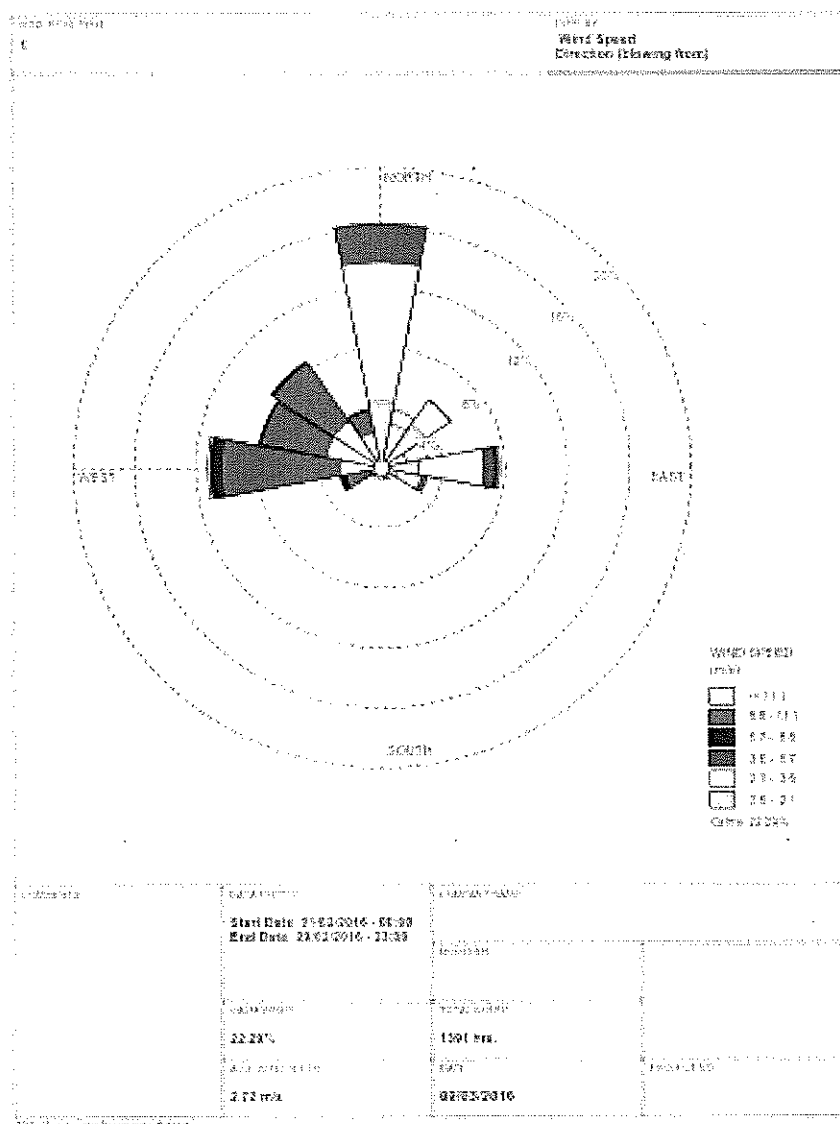


Figure 1.1. Wind Rose Diagram – February 2016



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2.1.4. AMBIENT AIR QUALITY RESULTS:

The 24 hourly average results of Ambient Air Quality Monitoring of two consecutive days for the month of **February 2016** are presented in Table-1.4(a), 1.4 (b), 1.4(c), 1.4(d), 1.4(e) and 1.4(f). The obtained results are compared with the standards prescribed by Central Pollution Control Board (CPCB) for “Industrial, Rural, Residential and other areas”.

Table 1.4 (a)- AMBIENT AIR QUALITY REPORT

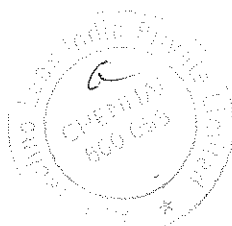
SAMPLE ID NO	ABC/MSEZ/23/AS/240216/A 2301-2302
SAMPLE DESCRIPTION	AMBIENT AIR QUALITY MONITORING.
SAMPLE DRAWN BY	ABC Techno Labs India Private Limited
NAME OF THE CLIENT	MANGALORE SPECIAL ECONOMIC ZONE LIMITED, MANGALORE
DATE SAMPLED	24-02-2016 (Monitoring duration 24hrs/day for 2 days)
REPORT DATE	07-03-2016

S.No	Location	Height GL(m)	Pollutant Concentration in $\mu\text{g}/\text{m}^3$						
			PM _{2.5}	PM ₁₀	SO ₂	NO _x	Pb	NH ₃	O ₃
1	CETP Location	2	20.3	47.4	12.1	17.6	BDL (<0.1)	26.2	12.8
2	MSEZ-GSS 3	2	29.5	63.8	9.2	20.4	BDL (<0.1)	11.6	14.5
Test Method			EPA- 40 CFR Part 50	IS 5182 Pt.23 : 2006	West & Gaeke	Jacob & Hochheister	IS 5182 P 22	Nessler's Method	KI Absorption Method
CPCB STANDARDS									
Industrial /Residential / Rural and Other Area			60	100	80	80	1	400	100

BDL- Below Detection Limit

Contd.....

For ABC Techno Labs India Private Limited.,



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Table 1.4(b) - AMBIENT AIR QUALITY REPORT

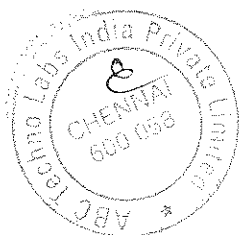
SAMPLE ID NO	ABC/MSEZ/23/AS/240216/A 2301-2302
SAMPLE DESCRIPTION	AMBIENT AIR QUALITY MONITORING.
SAMPLE DRAWN BY	ABC Techno Labs India Private Limited
NAME OF THE CLIENT	MANGALORE SPECIAL ECONOMIC ZONE LIMITED, MANGALORE
DATE SAMPLED	24-02-2016 (Monitoring duration 24hrs/day for 2 days)
REPORT DATE	07-03-2016

S.No	Location	Pollutant Concentration				CO, mg/m ³
		Benzene µg/m ³	Benzo[a]pyrene ng/m ³	Arsenic ng/m ³	Nickel ng/m ³	
1	CETP Location	BDL (<0.01)	BDL (<0.1)	BDL (<1)	BDL (<1)	0.18
2	MSEZ-GSS 3	BDL (<0.01)	BDL (<0.1)	BDL (<1)	BDL (<1)	0.38
Test Method		IS 5182: Pt 11: 2006	IS 5182: Pt 12: 1991	IS 5182 P 22	IS 5182 P 22	Gas Analyser
CPCB STANDARDS						
Industrial /Residential / Rural and Other Area		5	1	6	20	2

BDL- Below Detection Limit

Contd.....

For ABC Techno Labs India Private Limited.,




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Table 1.4(c) - AMBIENT AIR QUALITY REPORT

SAMPLE ID NO	ABC/MSEZ/23/AS/240216/A 2303
SAMPLE DESCRIPTION	AMBIENT AIR QUALITY MONITORING.
SAMPLE DRAWN BY	ABC Techno Labs India Private Limited
NAME OF THE CLIENT	MANGALORE SPECIAL ECONOMIC ZONE LIMITED, MANGALORE
DATE SAMPLED	24-02-2016 (Monitoring duration 24hrs/day for 2 days)
REPORT DATE	07-03-2016

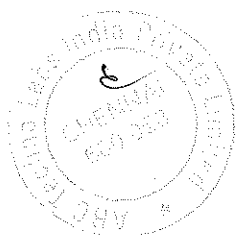
S.No	Location	Height GL(m)	Pollutant Concentration in $\mu\text{g}/\text{m}^3$						
			PM _{2.5}	PM ₁₀	SO ₂	NO _x	Pb	NH ₃	O ₃
3	Baipe	2	21.4	48.2	5.5	12.4	BDL (<0.1)	7.8	11.1
Test Method			EPA- 40 CFR Part 50	IS 5182 Pt.23 : 2006	West & Gaeke	Jacob & Hochheister	IS 5182 P 22	Nessler's Method	KI Absorption Method
CPCB STANDARDS									
Industrial /Residential / Rural and Other Area			60	100	80	80	1	400	100

BDL- Below Detection Limit

Contd.....

For ABC Techno Labs India Private Limited.,


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Table 1.4(d) - AMBIENT AIR QUALITY REPORT

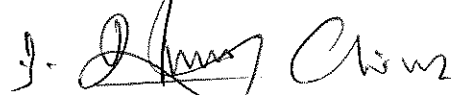
SAMPLE ID NO	ABC/MSEZ/23/AS/240216/A 2303
SAMPLE DESCRIPTION	AMBIENT AIR QUALITY MONITORING.
SAMPLE DRAWN BY	ABC Techno Labs India Private Limited
NAME OF THE CLIENT	MANGALORE SPECIAL ECONOMIC ZONE LIMITED, MANGALORE
DATE SAMPLED	24-02-2016 (Monitoring duration 24hrs/day for 2 days)
REPORT DATE	07-03-2016

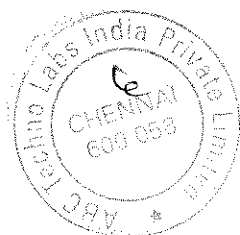
S.No	Location	Pollutant Concentration				CO, mg/m ³
		Benzene µg/m ³	Benzo[a]pyrene ng/m ³	Arsenic ng/m ³	Nickel ng/m ³	
3	Baipe	BDL (<0.01)	BDL (<0.1)	BDL (<1)	BDL (<1)	BDL(<0.1)
Test Method		IS 5182: Pt 11: 2006	IS 5182: Pt 12: 1991	IS 5182 P 22	IS 5182 P 22	Gas Analyser
CPCB STANDARDS						
Industrial /Residential / Rural and Other Area		5	1	6	20	2

BDL- Below Detection Limit

Contd.....

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AUTHORIZED SIGNATORY 17/03/16





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Table 1.4(e) - AMBIENT AIR QUALITY REPORT

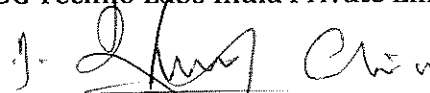
SAMPLE ID NO	ABC/MSEZ/23/AS/260216/A 2304-2305
SAMPLE DESCRIPTION	AMBIENT AIR QUALITY MONITORING.
SAMPLE DRAWN BY	ABC Techno Labs India Private Limited
NAME OF THE CLIENT	MANGALORE SPECIAL ECONOMIC ZONE LIMITED, MANGALORE
DATE SAMPLED	26-02-2016 (Monitoring duration 24hrs/day for 2 days)
REPORT DATE	07-03-2016

S.No	Location	Height GL(m)	Pollutant Concentration in $\mu\text{g}/\text{m}^3$						
			PM _{2.5}	PM ₁₀	SO ₂	NO _x	Pb	NH ₃	O ₃
4	120 ML, Water Reservoir	2	24.1	53.7	8.2	16.2	BDL (<0.1)	12.6	12.4
5	MSEZ, Permude	2	19.2	45.6	5.1	12.3	BDL (<0.1)	BDL (<5)	10.5
Test Method			EPA- 40 CFR Part 50	IS 5182 Pt.23 : 2006	West & Gaeke	Jacob & Hochheister	IS 5182 P 22	Nessler's Method	KI Absorption Method
CPCB STANDARDS									
Industrial /Residential / Rural and Other Area			60	100	80	80	1	400	100

BDL- Below Detection Limit

Contd.....

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Table 1.4(f) - AMBIENT AIR QUALITY REPORT

SAMPLE ID NO	ABC/MSEZ/23/AS/260216/A 2304-2305
SAMPLE DESCRIPTION	AMBIENT AIR QUALITY MONITORING.
SAMPLE DRAWN BY	ABC Techno Labs India Private Limited
NAME OF THE CLIENT	MANGALORE SPECIAL ECONOMIC ZONE LIMITED, MANGALORE
DATE SAMPLED	26-02-2016 (Monitoring duration 24hrs/day for 2 days)
REPORT DATE	07-03-2016

S.No	Location	Pollutant Concentration				CO, mg/m ³
		Benzene µg/m ³	Benzo[a]pyrene ng/m ³	Arsenic ng/m ³	Nickel ng/m ³	
4	120 ML, Water Reservoir	BDL (<0.01)	BDL (<0.1)	BDL (<1)	BDL (<1)	0.19
5	MSEZ, Permude	BDL (<0.01)	BDL (<0.1)	BDL (<1)	BDL (<1)	BDL(<0.1)
Test Method		IS 5182: Pt 11: 2006	IS 5182: Pt 12: 1991	IS 5182 P 22	IS 5182 P 22	Gas Analyser
CPCB STANDARDS						
Industrial /Residential / Rural and Other Area		5	1	6	20	2

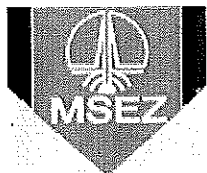
BDL- Below Detection Limit

.....END OF REPORT.....

For ABC Techno Labs India Private Limited.,


AUTHORIZED SIGNATORY 7/03/16





3.0. Noise Level Monitoring:

The noise monitoring has been conducted for determination of noise levels at two locations in the project area. The noise levels at each location were recorded for 24 hours for two non-consecutive days for two weeks. The environmental setting of each Noise monitoring locations is given in Table -1.5 and day and night equivalent Noise Levels are tabulated in Table 1.6.

Table 1.5- Details of Noise Monitoring Locations

Station Code	Name of the Station	Geographical Location
N1	CETP location	N-12°59'51.40" E-74°51'24.70"
N2	120 ML water reservoir	N-12°59'13.40" E-74°52'03.00"

Table 1.6 - Ambient Noise Monitoring Results

Station Code	Date of Survey	Location	Leq Day [dB(A)]	Leq Night [dB(A)]
N1	24-02-2016	CETP	50.3	41.3
N2	24-02-2016	120 ML	52.6	42.6
N1	27-02-2016	CETP	49.8	41.7
N2	27-02-2016	120 ML	53.1	43.2
N1	01-03-2016	CETP	49.1	41.3
N2	01-03-2016	120 ML	51.6	42.8
N1	04-03-2016	CETP	48.2	40.9
N2	04-03-2016	120 ML	52.4	42.3

AMBIENT NOISE STANDARDS

AMBIENT NOISE STANDARDS	Lday [dB(A)]	Lnight [dB(A)]
Industrial Area	75	70
Commercial Area	65	55
Residential Area	55	45
Silence Zone	50	40

Note: Day Time is reckoned between 6.0 A.M and 10.0 P.M.

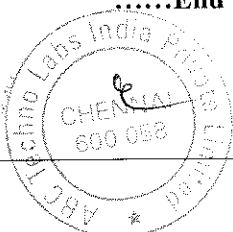
Night time is reckoned between 10.0 P.M to 6.0 A.M.

Leq [dB (A)] - Denotes the time weighted average of the level of sound in decibel on Scale A which is relatable to human hearing.

.....End of Report

For ABC Techno Labs India Private Limited.,

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4.0. Water Quality Monitoring

Water samples were collected at ten locations to establish baseline water quality in the study area. Water analysis was carried out for physical, chemical parameters as per the methods prescribed in IS and “Standard Methods for the Examination of Water and Wastewater (American Public Health Association)”.

4.1.1. Water Sampling Locations.

The details of the water sampling stations are presented in the Table 1.7

Table 1.5- Water Sampling Locations

Location Code	Date Sampled	Location	Type of water	Geographical Location
W1	27-02-2016	120 ML Water Storage	Ground water	N-12°58'57.70" E-74°51'30.10"
W2	27-02-2016	Near OMPL	Ground water	N-12°58'32.70" E-74°52'10.60"
W3	27-02-2016	Permude Bajpe Village Boundary	Ground water	N-12°59'54.00" E-74°52'53.60"
W4	27-02-2016	Road Cum Pipeline Corridor -Kalavar	Ground water	N-12°58'45.10" E-74°51'16.40"
W5	27-02-2016	Oddidakale- Bajpe	Ground water	N-12°58'32.80" E-74°52'10.40"
W6	27-02-2016	Chandrasaha Nagar	Ground water	N-12°58'44.90" E-74°51'16.50"
W7	27-02-2016	Permude	Ground water	N-12°59'12.50" E-74°52'34.30"
W8	27-02-2016	CETP Location	Ground water	N-12°59'51.40" E-74°51'24.70"
W9	27-02-2016	Shyanti Gudda-Bajpe	Ground water	N-12°59'54.00" E-74°52'53.40"

4.1.2. Water Quality Results

The physicochemical characteristics of water in the project area are presented in the Table 1.8(a) and Table 1.8(b) and are compared with the standards (IS 10500:2012 Indian Standards/Specifications for Drinking Water) reference values.



ANNEXURE-I



NABL

National Accreditation Board for Testing and Calibration Laboratories

(An Autonomous Body under Department of Science & Technology, Govt. of India)

CERTIFICATE OF ACCREDITATION

ABC TECHNO LABS INDIA PRIVATE LIMITED

has been assessed and accredited in accordance with the standard

ISO/IEC 17025:2005

"General Requirements for the Competence of Testing & Calibration Laboratories"

for its facilities at

No. 95, D/3, Industrial Estate, Ambattur, Chennai, Tamil Nadu

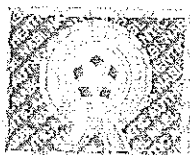
in the discipline of

CHEMICAL TESTING

(To see the scope of accreditation of this laboratory, you may also visit NABL website www.nabl-india.org)

Certificate Number T-1586

Issue Date 08/10/2015



Valid Until 07/10/2017

This certificate remains valid for the Scope of Accreditation as specified in the annexure subject to continued satisfactory compliance to the above standard & the additional requirements of NABL.

Signed for and on behalf of NABL

N. Venkateswaran

N. Venkateswaran
Program Manager

Anil Relia

Anil Relia
Director

Prof. S. K. Joshi

Prof. S. K. Joshi
Chairman



भारत का राजपत्र The Gazette of India

असाधारण
EXTRAORDINARY

भाग II—खण्ड 3—उप-खण्ड (ii)
PART II—Section 3—Sub-section (ii)

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पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय

अधिसूचना

नई दिल्ली, 6 अगस्त, 2014

का.आ. 2003(अ).— केन्द्रीय सरकार, पर्यावरण (संरक्षण) नियमावली, 1986 के नियम 10 के साथ पठित पर्यावरण (संरक्षण) अधिनियम, 1986 (1986 का 29) की धारा 12 की उप-धारा (1) के खंड (ख) और धारा 13 द्वारा प्रदत्त शक्तियों का प्रयोग करते हुए, भारत सरकार के पर्यावरण और वन मंत्रालय की अधिसूचना संख्यांक का.आ.1174(अ), तारीख 18 जुलाई, 2007 में निम्नलिखित और संशोधन करती है, अर्थात् :—

2. उक्त अधिसूचना से उपाबद्ध सारणी में,

(क) क्रम संख्यांक 120 और उससे संबंधित प्रविष्टियों के पश्चात् निम्नलिखित क्रम संख्यांक और प्रविष्टियां अंतःस्थापित की जाएंगी अर्थात् :—

(1)	(2)	(3)	(4)
" 121	मैसर्स एबीसी टक्को लैब्स इंडिया प्राइवेट लिमिटेड, सं० 95-डी/3, इंडस्ट्रियल एस्टेट, अम्बतूर, चेन्नई - 600058 (तमिलनाडु)	(1) डॉ० जी सुंदर (2) श्री पी० सेंथिल कुमार (3) श्री ए० रॉबसन चिन्नदुरै	06.08.2014 से 05.08.2019
122	मैसर्स एडवर्ड फुड रिसर्च एंड एनैलसिस सेन्टर, सुभाष नगर, पी०ओ० नीलगंज बाजार, पी०एस० बारासात, जिला० नार्थ 24 पीजीएस, कोलकाता - 700121 (पश्चिम बंगाल)	(1) डॉ० देवोतम बनर्जी (2) श्री अलोके कुमार दत्ता (3) श्री सुरेश कुमार मंडल	06.08.2014 से 05.08.2019
123	मैसर्स कीवी ईको लेबोरेटरीज प्राइवेट लिमिटेड, प्लॉट सं० 19, एसवाई सं० 343, एलिप, इंडस्ट्रियल एस्टेट, गजुलरमरम गाँव, कुथुल्लपुर (एमडी), जिला रंगारेड्डी, (तेलंगाना)	(1) डॉ० रजनी कुमारी (2) श्री एन०पी० विश्वनाथ (3) डॉ० पी० सरिता	06.08.2014 से 05.08.2019
124	मैसर्स नवेगा इवायरो इंजीनियर्स एंड कन्सल्टेंट, रवि चैम्बर्स, प्लॉट नं० 100/1, मकान सं० 1-96/100, कवुरि हिल्स, मधापुर, हैदराबाद - 500033 (तेलंगाना)	(1) श्री चेल्लि चिरंजीवी (2) श्री चलापथी कोदैअह गिरी (3) सुश्री अश्वनीदेवी कोमारी रेड्डी	06.08.2014 से 05.08.2019
125	मैसर्स कल्याणी लेबोरेटरीज प्राइवेट लिमिटेड, प्लॉट सं० 841 - ए, रसुलगढ़, भुवनेश्वर - 751010 (ओडिशा)	(1) डॉ० देबाशीष बिस्वाल (2) डॉ० रेखा नायक	06.08.2014 से

		(3) श्री दिगम्बर अरुखा	05.08.2019
126	मैसर्स भरुच इन्वायरो इन्फ्रास्ट्रक्चर लिमिटेड (बीईआईएल), एनलिटिकल रिसर्च लेबोरेटरी, प्लॉट सं० 9701 - 16, जीआईडीसी, अंकलेश्वर, जिला भरुच- 393002 (गुजरात)	(1) डॉ० हितेंद्र कुमार जानी (2) श्री नरेन्द्र बी० पटेल (3) श्री धर्मेश आई० पटेल	06.08.2014 से 05.08.2019 ।”

[फा०सं० क्यू-15018/23/2013-सीपीडब्ल्यू]

डॉ. राशिद हसन, सलाहकार

टिप्पण : मूल अधिसूचना भारत के राजपत्र, असाधारण, में संख्यांक. का.आ. 1174(अ), तारीख 18 जुलाई, 2007 द्वारा प्रकाशित की गई थी और तत्पश्चात् अधिसूचना सं० का.आ. 1539(अ), तारीख 13 सितंबर, 2007, का.आ. 1811(अ), तारीख 24 अक्टूबर, 2007, का.आ. 55(अ), तारीख 9 जनवरी, 2008, का.आ. 428(अ), तारीख 4 मार्च, 2008, का.आ. 865(अ), तारीख 11 अप्रैल, 2008, का.आ. 1894(अ), तारीख 31 जुलाई, 2008, का.आ. 2728(अ), तारीख 25 नवंबर, 2008, का.आ. 1356(अ), तारीख 27 मई, 2009, का.आ.1802(अ) तारीख 22 जुलाई, 2009, का.आ. 2399(अ) तारीख 18 सितंबर, 2009, का.आ. 3122(अ), तारीख 7 दिसंबर, 2009, का.आ. 3123(अ), तारीख 7 दिसंबर, 2009, का.आ. 142(अ), तारीख 21 जनवरी, 2010, का.आ. 619(अ), तारीख 19 मार्च, 2010, का.आ. 1662(अ), तारीख 13 जुलाई, 2010, का.आ. 2390(अ), तारीख 30 सितंबर, 2010, का.आ. 2904 (अ), तारीख 8 दिसंबर, 2010, का.आ. 181(अ), तारीख 28 जनवरी, 2011, का.आ. 692(अ), तारीख 5 अप्रैल, 2011, का.आ. 1537(अ), तारीख 6 जुलाई, 2011, का.आ. 1754(अ), तारीख 28 जुलाई, 2011, का.आ. 2609(अ), तारीख 22 नवंबर, 2011, का.आ. 264(अ), तारीख 13 फरवरी, 2012, का.आ. 1150(अ), तारीख 22 मई, 2012, का.आ. 2039(अ), तारीख 5 सितंबर, 2012, का.आ. 2802(अ), तारीख 27 नवंबर, 2012 और का.आ. 2850(अ), तारीख 7 दिसंबर, 2012 तथा का.आ. 592(अ), तारीख 8 मार्च, 2013, का.आ. 945(अ), तारीख 8 अप्रैल, 2013, का.आ.2287(अ), तारीख 27 जुलाई, 2013, का.आ.2288(अ), तारीख 27 जुलाई, 2013 और का.आ.3489(अ), तारीख 26 नवंबर, 2013, का.आ. 21(अ), तारीख 3 जनवरी, 2014, का.आ. 561(अ), तारीख 26 फरवरी, 2014, का.आ. 1205 (अ), तारीख 5 मई, 2014, का.आ. 1190 (अ), तारीख 2 मई, 2014, और का.आ. 1680 (अ), तारीख 2 जुलाई, 2014, द्वारा उसका संशोधन किया गया ।

MINISTRY OF ENVIRONMENT, FORESTS AND CLIMATE CHANGE NOTIFICATION

New Delhi, the 6th August, 2014

S.O. 2003(E).—In exercise of the powers conferred by clause (b) of sub-section (1) of Section 12 and Section 13 of the Environment (Protection) Act, 1986 (29 of 1986) read with rule 10 of the Environment (Protection) Rules, 1986, the Central Government hereby makes the following further amendments in the notification of the Government of India in the Ministry of Environment and Forests, number S.O. 1174(E), dated the 18th July, 2007, namely :—

In the TABLE to the said notification,—

(a) after serial number 120 and the entries relating thereto, the following serial numbers and entries shall be inserted, namely :—

(1)	(2)	(3)	(4)
"121	M/s. ABC Techno Labs India Private Limited, No. 95-D/3, Industrial Estate, Ambattur, Chennai – 600 058 (Tamil Nadu)	(1) Dr. G. Sunder (2) Mr.P. Senthil Kumar (3) Mr. A. Robson Chinnadurai	06.08. 2014 to 05.08. 2019
122	M/s. Edward Food Research and Analysis Centre Ltd., Subhas Nagar, P.O. Nilgunj Bazar, P.S.: Barasat, District- North 24 PGS, Kolkata - 700121 (West Bengal)	(1) Dr. Devottam Banerjee (2) Mr. Alope Kumar Datta (3) Mr. Suresh Kumar Mandal	06 .08. 2014 to 05.08. 2019
123	M/s. Kiwis Eco Laboratories Private Limited, Plot No. 19, Sy. No.342, ALEAP Industrial Estate, Gajularamaram Village - Quthbullpur (MD), District Rangareddy - 500090 (Telangana)	(1) Dr. Rajani Kumari (2) Mr. N.P. Viswanath (3) Dr. P. Saritha	06 .08. 2014 to 05.08. 2019
124	M/s. Navega Enviro Engineers and Consultants, Ravi Chambers, Plot No.100/1, H.No.1-96/100, Kavuri Hills, Madhapur, Hyderabad - 500033	(1) Mr. Chelli Chiranjeevi (2) Mr. Chalapathi Kondaiah Gari	06 .08. 2014 to 05.08. 2019

	(Telangana)	(3) Ms. Aswinidevi Kommireddy	
125	M/s. Kalyani Laboratories Private Limited, Plot No. 841-A, Rasulgarh Bhubaneswar-751010 (Odisha)	(1) Dr. Debasis Biswal (2) Dr. Rekha Nayak (3) Mr. Digambar Arukha	06 .08. 2014 to 05.08. 2019
126	M/s. Bharuch Enviro Infrastructure Limited (BEIL), Analytical Research Laboratory, Plot No. 9701-16, GIDC, Ankleshwar, District-Bharuch - 393002 (Gujarat)	(1) Dr. Hitendra Kumar Jani (2) Mr. Narendra B. Patel (3) Mr. Dharmesh I. Patel	06 .08. 2014 to 05.08. 2019. "

[F. No. Q.15018/23/2013-CPW]

Dr. RASHID HASAN, Advisor

Note.—The principal notification was published in the Gazette of India, Extraordinary *vide* number S.O. 1174 (E), dated the 18th July, 2007 and subsequently amended *vide* notification numbers S.O. 1539 (E), dated the 13th September, 2007, S.O.1811(E), dated the 24th October, 2007, S.O.55(E), dated the 9th January, 2008, S.O.428(E), dated the 4th March, 2008, S.O.865(E) dated the 11th April, 2008, S.O.1894(E), dated the 31st July, 2008, S.O.2728(E), dated the 25th November, 2008, S.O.1356(E), dated the 27th May, 2009, S.O.1802(E), dated the 22nd July, 2009, S.O. 2399(E), dated the 18th September, 2009, S.O.3122(E), dated the 7th December, 2009, S.O.3123(E), dated the 7th December, 2009, No. S.O. 142(E), dated the 21st January, 2010, S.O.619(E), dated the 19th March, 2010, S.O.1662(E) dated the 13th July, 2010, S.O.2390(E), dated the 30th September, 2010, S.O.2904(E), dated the 8th December, 2010, S.O.181(E), dated the 28th January, 2011, S.O. 692(E), dated the 5th April, 2011, S.O.1537(E), dated the 6th July, 2011, S.O.1754(E), dated the 28th July, 2011, S.O. 2609 (E) dated the 22nd November, 2011, S.O.264 (E), dated the 13th February, 2012, S.O.1150(E), dated the 22nd May, 2012, S.O. 2039(E), dated the 5th September, 2012, S.O. 2802(E), dated the 27th November, 2012, S.O. 2850(E), dated the 7th December, 2012, S.O. 592 (E), dated the 8th March, 2013, S.O.945(E), dated the 8th April, 2013, S.O.2287(E), dated the 27th July, 2013, S.O.2288(E), dated the 27th July, 2013, S.O.3489(E) dated the 26th November, 2013, S.O.21(E), dated 3rd January, 2014, S.O.561(E), the 26th February, 2014, S.O.1205(E), dated the 5th May, 2014, S.O.1190(E), dated the 2nd May, 2014 and S.O.1680(E), dated the 2nd July, 2014.



ANNEXURE-II

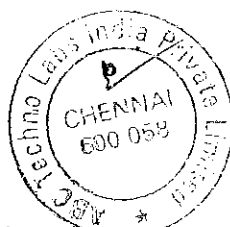


ENVIRONMENTAL MONITORING REPORT
SPECIAL ECONOMIC ZONE LIMITED, MANGALORE



March - 2016

Prepared by:



ABC Techno Labs India Private Limited

An ISO : 9001:2008, ISO :14001:2004 & OHSAS : 18001:2007 Certified Company
(Accrediated by NABL, NABET, MoEF)



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Ambattur Industrial Estate, Chennai - 600 058.
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Environmental Monitoring Report – Mangalore Special
Economic zone Limited, Mangalore.

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Annexure -I	MoEF Certificate/NABL Certificate
Annexure -II	Sampling Location Map.



ENVIRONMENTAL MONITORING REPORT

1.0. Introduction:

Mangalore Special Economic Zone Limited is located 8 km aerially to North East of New Mangalore Port and is adjacent to the existing refinery of MRPL on its West. The Industrial estate of the District, namely Baikampady is located southwest of MSEZ. The Mangalore Airport is about 5 km South East of MSEZ.

1.1. Description of the Organization:

M/s. **ABC Techno Labs India Private Limited, Chennai**, an ISO 9001, ISO 14001 & OHSAS 18001 Certified Company has been accredited by,

- National Accreditation Board for Education and Training (NABET), a division of Quality Council of India (QCI).
- Recognized under EP Act, 1986 by Ministry of Environment and Forest.
- National Accreditation Board for Testing and Calibration Laboratories (NABL), an autonomous body under the Department of Science & Technology, Government of India.

The certificate of authorization is enclosed in the Annexure-I.

We offer the following services,

- Environmental Impact Assessment (EIA) & Environmental Management Plan (EMP) for Infrastructure & Industrial Projects.
- Social Impact Assessment Studies including Rehabilitation & Resettlement
- Environmental Monitoring
- Environmental Audits
- Capacity Building for Environmental Management
- Solid Waste Management
- Effective Management of Resources and Wastes
- Risk Assessment & Management Studies





1.2. Scope of Work:

The scope of the work is to conduct Environmental monitoring at Special Economic Zone, Mangalore, following the guidelines and regulations of MoEF/CPCB standards. The scope of the work for the month of March 2016 is to conduct ambient air quality monitoring at five locations sampling Locations are given in annexure - II.

2.0. Ambient Air Quality Monitoring Details:

Ambient air quality monitoring (AAQM) was carried out at five locations with due consideration to the meteorological conditions of the Project area. Ambient air quality monitoring was carried out at each location on 24 hourly basis on two consecutive days per month. The details of AAQ monitoring stations are given in Table 1.1.

Table - 1.1. Details of Ambient Air Monitoring Locations

STATION CODE	NAME OF THE LOCATIONS	GEOGRAPHICAL LOCATION
AAQ1	120 ML Water Reservoir	N-12°59'13.40" E-74°52'03.00"
AAQ2	MSEZ, Permude	N-12°59'54.00" E-74°52'53.60"
AAQ3	GSS3-10 ML Water Reservoir	N-12°58'57.70" E-74°51'30.10"
AAQ4	CETP Location	N-12°59'51.40" E-74°51'24.70"
AAQ5	Bajpe	N-12°58'32.80" E-74°52'10.40"

2.1.1. Method used for Air Quality Monitoring:

Respirable Dust Sampler and Fine Particulate Samplers were used for collecting Particulate Matter of size less than 10 μm (PM_{10}) and 2.5 μm ($\text{PM}_{2.5}$) respectively. Gaseous Samplers were used for sampling gaseous pollutants such as SO_2 , NO_x Ammonia and Ozone (O_3). Organic vapour sampler was used to sample Hydrocarbon. Gas analyzer was used to estimate Carbon monoxide (CO) level in ambient air.



The Analytical techniques used for ambient air quality monitoring and its minimum detectable limit for each parameter is tabulated in Table 1.2.

Table - 1.2. Analytical Techniques Used for Ambient Air Quality Monitoring

2.1.2. Micro-Meteorology :

S.NO	PARAMETER	TECHNIQUE	MINIMUM DETECTABLE LIMIT
1	Particulate Matter PM ₁₀	Fine Particulate Sampler (Gravimetric method)	5.0 µg/m ³
2	Particulate Matter PM _{2.5}	Fine Particulate Sampler (Gravimetric method)	5.0 µg/m ³
3	Sulphur di Oxide	Modified West & Gaeke Method	5.0 µg/m ³
4	Nitrogen Oxide	Jacob and Hochheiser Method	5.0 µg/m ³
5	Carbon monoxide	Gas Analyser	0.1 ppm
6	Ammonia	Nessler's Method	5 µg/m ³
7	Ozone	KI Absorption and Colorimetric	5 µg/m ³
8	Benzene,	IS 5182: Pt 11: 2006	0.01 µg/m ³
9	Benzo[a]pyrene	IS 5182: Pt 12: 1991	0.1 ng/m ³
10	Lead,	IS 5182 P 22: 2004	0.1 µg/m ³
11	Arsenic, Nickel	IS 5182 P 22: 2004	1 ng/m ³

Wind Speed, Predominant Wind Direction, Temperature, Relative Humidity between 01-03-2016 and 31-03-2016 at MSEZ is given in Table 1.3.



Environmental Monitoring Report - Mangalore Special Economic Zone Limited, Mangalore.

Table-1.3- Micro-Meteorology

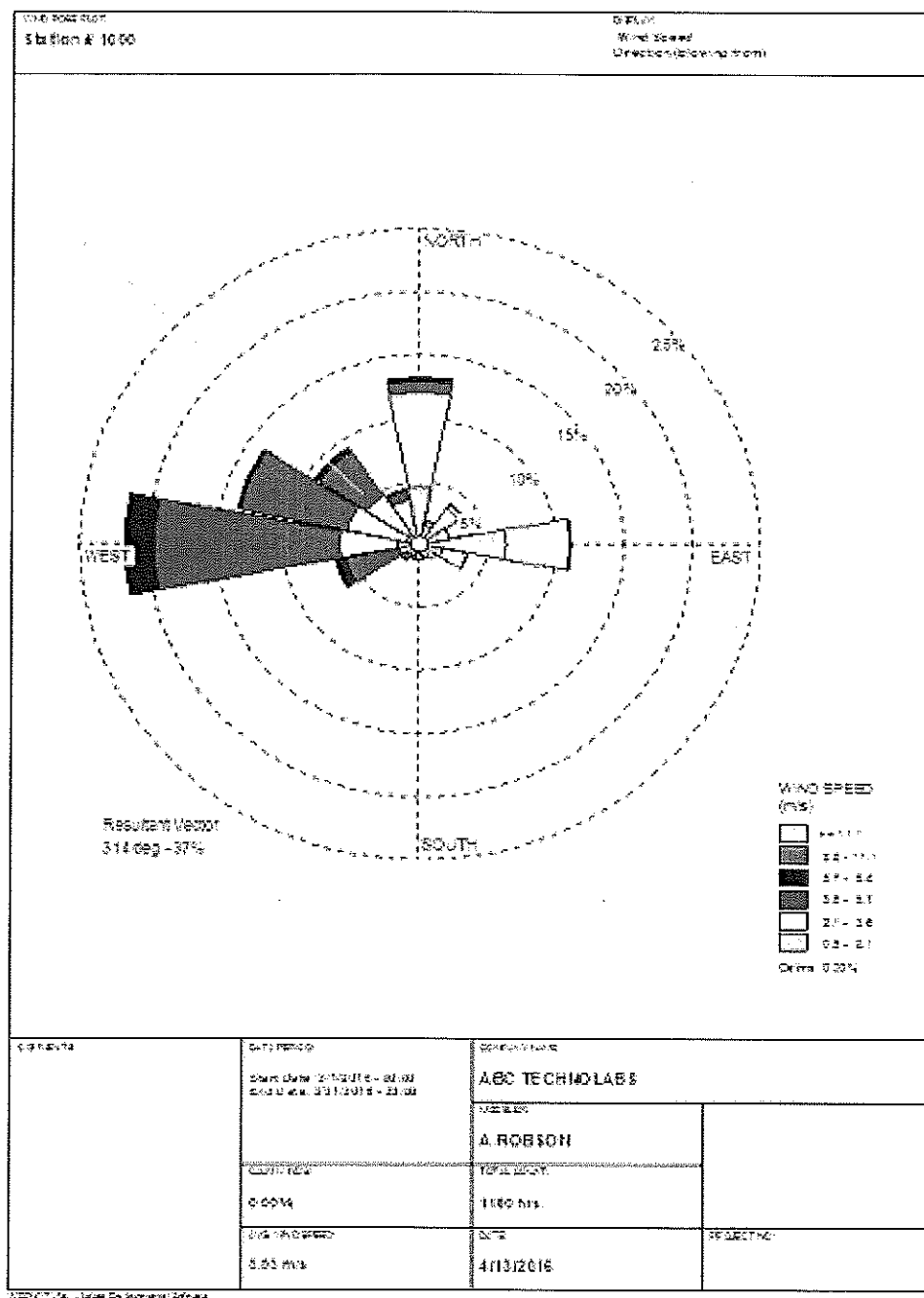
DATE	TEMPERATURE (°C)		RELATIVE HUMIDITY (%)		WIND SPEED (Km/hr)		PREDOMINANT WIND DIRECTION
	MIN	MAX	MIN	MAX	MIN	MAX	
01-03-2016	24	35	40	94	3.7	18.5	West North west
02-03-2016	25	34	42	94	4.5	14.5	North West
03-03-2016	25	35	32	92	5.6	18.2	West
04-03-2016	24	36	30	94	5.2	18.3	West North west
05-03-2016	24	34	43	94	5.6	18.5	East
06-03-2016	25	34	47	94	5.6	22.2	Calm
07-03-2016	25	34	48	94	5.6	18.5	Calm
08-03-2016	24	28	8	94	6.1	20.6	West North west
09-03-2016	24	33	44	94	5.6	18.5	West North west
10-03-2016	24	34	44	94	5.2	26.2	West
11-03-2016	24	36	45	94	5.8	27.7	North
12-03-2016	25	34	41	94	5.6	22.2	West North west
13-03-2016	25	35	41	94	5.6	24.1	North
14-03-2016	24	34	31	89	5.6	22.2	North West
15-03-2016	23	34	33	83	5.6	18.5	Calm
16-03-2016	23	34	35	89	5.6	22.2	North West
17-03-2016	22	28	38	89	5.6	18.5	Calm
18-03-2016	24	34	42	89	5.6	22.2	North
19-03-2016	24	33	51	89	5.6	18.8	West
20-03-2016	25	33	49	94	5.6	20.4	West North west
21-03-2016	26	34	55	94	5.6	22.2	West North west
22-03-2016	26	34	47	94	5.6	22.2	West South west
23-03-2016	25	35	46	94	5.6	18.6	West
24-03-2016	26	34	51	94	5.6	20.7	North
25-03-2016	25	35	37	89	5.6	18.5	Calm
26-03-2016	24	35	28	89	5.6	22.2	West North west
27-03-2016	24	35	45	94	5.6	18.5	West
28-03-2016	24	35	43	89	5.6	22.4	West South west
29-03-2016	24	35	42	94	5.6	22.2	West
30-03-2016	25	35	42	89	5.6	22.2	West
31-03-2016	26	34	50	89	5.6	22.2	North West



Environmental Monitoring Report – Mangalore Special Economic Zone Limited, Mangalore.

2.1.3. Wind Rose:

The wind roses diagram for the month of **March 2016** at Mangalore SEZ is depicted in Figure 1.1.





Environmental Monitoring Report - Mangalore Special Economic Zone Limited, Mangalore.

2.1.4. AMBIENT AIR QUALITY RESULTS:

The 24 hourly average results of Ambient Air Quality Monitoring of two consecutive days for the month of **March 2016** are presented in Table-1.4(a), 1.4 (b), 1.4(c), 1.4(d), 1.4(e) and 1.4(f). The obtained results are compared with the standards prescribed by Central Pollution Control Board (CPCB) for "Industrial, Rural, Residential and other areas".

Table 1.4 (a)- AMBIENT AIR QUALITY REPORT

SAMPLE ID NO	ABC/MSEZ/24/AS/280316/A 2551-2552
SAMPLE DESCRIPTION	AMBIENT AIR QUALITY MONITORING.
SAMPLE DRAWN BY	ABC Techno Labs India Private Limited
NAME OF THE CLIENT	MANGALORE SPECIAL ECONOMIC ZONE LIMITED, MANGALORE
DATE SAMPLED	28-03-2016 (Monitoring duration 24hrs/day for 2 days)
REPORT DATE	11-04-2016

S.No	Location	Height GL(m)	Pollutant Concentration in $\mu\text{g}/\text{m}^3$						
			PM _{2.5}	PM ₁₀	SO ₂	NO _x	Pb	NH ₃	O ₃
1	CETP Location	2	24.1	56.2	12.7	16.2	BDL (<0.1)	16	13.1
2	MSEZ-GSS 3	2	27.8	61.2	13.8	20.6	BDL (<0.1)	13.7	12.5
Test Method			EPA- 40 CFR Part 50	IS 5182 Pt.23 : 2006	West & Gaeke	Jacob & Hochheister	IS 5182 P 22	Nessler's Method	KI Absorption Method
CPCB STANDARDS									
Industrial /Residential / Rural and Other Area			60	100	80	80	1	400	100

BDL- Below Detection Limit

Contd.....



For ABC Techno Labs India Private Limited.,

[Signature]
11/04/16
AUTHORIZED SIGNATORY

QUALITY MANAGER



Environmental Monitoring Report – Mangalore Special Economic Zone Limited, Mangalore.

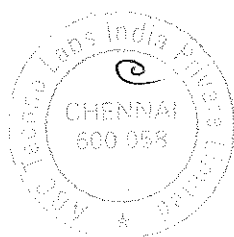
Table 1.4(b) - AMBIENT AIR QUALITY REPORT

SAMPLE ID NO	ABC/MSEZ/24/AS/280316/A 2551-2552
SAMPLE DESCRIPTION	AMBIENT AIR QUALITY MONITORING.
SAMPLE DRAWN BY	ABC Techno Labs India Private Limited
NAME OF THE CLIENT	MANGALORE SPECIAL ECONOMIC ZONE LIMITED, MANGALORE
DATE SAMPLED	28-03-2016 (Monitoring duration 24hrs/day for 2 days)
REPORT DATE	11-04-2016

S.No	Location	Pollutant Concentration				CO, mg/m ³
		Benzene µg/m ³	Benzo[a]pyrene ng/m ³	Arsenic ng/m ³	Nickel ng/m ³	
1	CETP Location	BDL (<0.01)	BDL (<0.1)	BDL (<1)	BDL (<1)	BDL(<0.1)
2	MSEZ-GSS 3	BDL (<0.01)	BDL (<0.1)	BDL (<1)	BDL (<1)	0.31
Test Method		IS 5182: Pt 11: 2006	IS 5182: Pt 12: 1991	IS 5182 P 22	IS 5182 P 22	Gas Analyser
CPCB STANDARDS						
Industrial /Residential / Rural and Other Area		5	1	6	20	2

BDL- Below Detection Limit

Contd.....



For ABC Techno Labs India Private Limited.,

[Signature]
AUTHORIZED SIGNATORY

QUALITY MANAGER



Environmental Monitoring Report – Mangalore Special Economic Zone Limited, Mangalore.

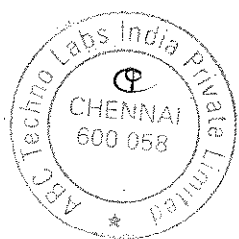
Table 1.4(c) - AMBIENT AIR QUALITY REPORT

SAMPLE ID NO	ABC/MSEZ/24/AS/280316/A 2553
SAMPLE DESCRIPTION	AMBIENT AIR QUALITY MONITORING.
SAMPLE DRAWN BY	ABC Techno Labs India Private Limited
NAME OF THE CLIENT	MANGALORE SPECIAL ECONOMIC ZONE LIMITED, MANGALORE
DATE SAMPLED	28-03-2016 (Monitoring duration 24hrs/day for 2 days)
REPORT DATE	11-04-2016

S.No	Location	Height GL(m)	Pollutant Concentration in $\mu\text{g}/\text{m}^3$						
			PM _{2.5}	PM ₁₀	SO ₂	NO _x	Pb	NH ₃	O ₃
3	Baipe	2	21.1	48.6	5.5	12.4	BDL (<0.1)	BDL(<5)	11.3
Test Method			EPA- 40 CFR Part 50	IS 5182 Pt.23 : 2006	West & Gaeke	Jacob & Hochheister	IS 5182 P 22	Nessler's Method	KI Absorption Method
CPCB STANDARDS									
Industrial /Residential / Rural and Other Area			60	100	80	80	1	400	100

BDL- Below Detection Limit

Contd.....



For ABC Techno Labs India Private Limited.,

[Signature]
AUTHORIZED SIGNATORY

QUALITY MANAGER



Environmental Monitoring Report – Mangalore Special Economic Zone Limited, Mangalore.

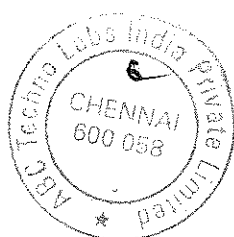
Table 1.4(d) - AMBIENT AIR QUALITY REPORT

SAMPLE ID NO	ABC/MSEZ/24/AS/280316/A 2553
SAMPLE DESCRIPTION	AMBIENT AIR QUALITY MONITORING.
SAMPLE DRAWN BY	ABC Techno Labs India Private Limited
NAME OF THE CLIENT	MANGALORE SPECIAL ECONOMIC ZONE LIMITED, MANGALORE
DATE SAMPLED	28-03-2016 (Monitoring duration 24hrs/day for 2 days)
REPORT DATE	11-04-2016

S.No	Location	Pollutant Concentration				CO, mg/m ³
		Benzene µg/m ³	Benzo[a]pyrene ng/m ³	Arsenic ng/m ³	Nickel ng/m ³	
3	Baipe	BDL (<0.01)	BDL (<0.1)	BDL (<1)	BDL (<1)	BDL(<0.1)
Test Method		IS 5182: Pt 11: 2006	IS 5182: Pt 12: 1991	IS 5182 P 22	IS 5182 P 22	Gas Analyser
CPCB STANDARDS						
Industrial /Residential / Rural and Other Area		5	1	6	20	2

BDL- Below Detection Limit

Contd.....



For ABC Techno Labs India Private Limited.,

[Signature]
11/4/16

AUTHORIZED SIGNATORY

QUALITY MANAGER





Environmental Monitoring Report – Mangalore Special Economic Zone Limited, Mangalore.

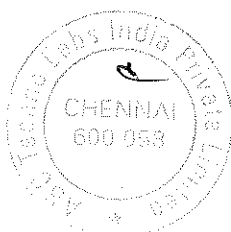
Table 1.4(e) - AMBIENT AIR QUALITY REPORT

SAMPLE ID NO	ABC/MSEZ/24/AS/300316/A 2254-2555
SAMPLE DESCRIPTION	AMBIENT AIR QUALITY MONITORING.
SAMPLE DRAWN BY	ABC Techno Labs India Private Limited
NAME OF THE CLIENT	MANGALORE SPECIAL ECONOMIC ZONE LIMITED, MANGALORE
DATE SAMPLED	30-03-2016 (Monitoring duration 24hrs/day for 2 days)
REPORT DATE	11-04-2016

S.No	Location	Height GL(m)	Pollutant Concentration in $\mu\text{g}/\text{m}^3$						
			PM _{2.5}	PM ₁₀	SO ₂	NO _x	Pb	NH ₃	O ₃
4	120 ML, Water Reservoir	2	24.7	58.4	10.4	15.1	BDL (<0.1)	17	13.5
5	MSEZ, Permude	2	17.3	42.5	5.1	11.5	BDL (<0.1)	BDL (<5)	10.9
Test Method			EPA- 40 CFR Part 50	IS 5182 Pt.23 : 2006	West & Gaeke	Jacob & Hochheister	IS 5182 P 22	Nessler's Method	KI Absorption Method
CPCB STANDARDS									
Industrial /Residential / Rural and Other Area			60	100	80	80	1	400	100

BDL- Below Detection Limit

Contd.....



For ABC Techno Labs India Private Limited.,

[Signature]
AUTHORIZED SIGNATORY

QUALITY MANAGER



Environmental Monitoring Report – Mangalore Special Economic Zone Limited, Mangalore.

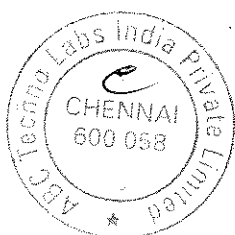
Table 1.4(f) - AMBIENT AIR QUALITY REPORT

SAMPLE ID NO	ABC/MSEZ/24/AS/300316/A 2254-2555
SAMPLE DESCRIPTION	AMBIENT AIR QUALITY MONITORING.
SAMPLE DRAWN BY	ABC Techno Labs India Private Limited
NAME OF THE CLIENT	MANGALORE SPECIAL ECONOMIC ZONE LIMITED, MANGALORE
DATE SAMPLED	30-03-2016 (Monitoring duration 24hrs/day for 2 days)
REPORT DATE	11-04-2016

S.No	Location	Pollutant Concentration				CO, mg/m ³
		Benzene µg/m ³	Benzo[a]pyrene ng/m ³	Arsenic ng/m ³	Nickel ng/m ³	
4	120 ML, Water Reservoir	BDL (<0.01)	BDL (<0.1)	BDL (<1)	BDL (<1)	0.19
5	MSEZ, Permude	BDL (<0.01)	BDL (<0.1)	BDL (<1)	BDL (<1)	BDL(<0.1)
Test Method		IS 5182: Pt 11: 2006	IS 5182: Pt 12: 1991	IS 5182 P 22	IS 5182 P 22	Gas Analyser
CPCB STANDARDS						
Industrial /Residential / Rural and Other Area		5	1	6	20	2

BDL- Below Detection Limit

.....END OF REPORT.....



For ABC Techno Labs India Private Limited.,

11-4/16
AUTHORIZED SIGNATORY

QUALITY MANAGER



ANNEXURE-I



NABL

National Accreditation Board for Testing and Calibration Laboratories

(An Autonomous Body under Department of Science & Technology, Govt. of India)

CERTIFICATE OF ACCREDITATION

ABC TECHNO LABS INDIA PRIVATE LIMITED

has been assessed and accredited in accordance with the standard

ISO/IEC 17025:2005

"General Requirements for the Competence of Testing & Calibration Laboratories"

for its facilities at

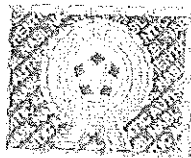
No. 95, D/3, Industrial Estate, Ambattur, Chennai, Tamil Nadu
in the discipline of

CHEMICAL TESTING

(To see the scope of accreditation of this laboratory, you may also visit NABL website www.nabl-india.org)

Certificate Number T-1586

Issue Date 08/10/2015



Valid Until 07/10/2017

This certificate remains valid for the Scope of Accreditation as specified in the annexure subject to continued satisfactory compliance to the above standard & the additional requirements of NABL.

Signed for and on behalf of NABL

N. Venkateswaran

N. Venkateswaran
Program Manager

Anil Relia

Anil Relia
Director

S. K. Joshi

Prof. S. K. Joshi
Chairman



भारत का राजपत्र The Gazette of India

असाधारण

EXTRAORDINARY

भाग II—खण्ड 3—उप-खण्ड (ii)

PART II—Section 3—Sub-section (ii)

प्राधिकार से प्रकाशित

PUBLISHED BY AUTHORITY

सं. 1573]

नई दिल्ली, बुधवार, अगस्त 6, 2014/श्रावण 15, 1936

No.1573]

NEW DELHI, WEDNESDAY, AUGUST 6, 2014/SHRAVANA 15, 1936

पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय

अधिसूचना

नई दिल्ली, 6 अगस्त, 2014

का.आ. 2003(अ).— केन्द्रीय सरकार, पर्यावरण (संरक्षण) नियमावली, 1986 के नियम 10 के साथ पठित पर्यावरण (संरक्षण) अधिनियम, 1986 (1986 का 29) की धारा 12 की उप-धारा (1) के खंड (ख) और धारा 13 द्वारा प्रदत्त शक्तियों का प्रयोग करते हुए, भारत सरकार के पर्यावरण और वन मंत्रालय की अधिसूचना संख्यांक का.आ.1174(अ), तारीख 18 जुलाई, 2007 में निम्नलिखित और संशोधन करती है, अर्थात् :—

2. उक्त अधिसूचना से उपाबद्ध सारणी में,

(क) क्रम संख्यांक 120 और उससे संबंधित प्रविष्टियों के पश्चात् निम्नलिखित क्रम संख्यांक और प्रविष्टियां अंतःस्थापित की जाएंगी अर्थात् :—

(1)	(2)	(3)	(4)
" 121	मैसर्स एबीसी टक्नो लैब्स इंडिया प्राइवेट लिमिटेड, सं० 95-डी/3, इंडस्ट्रियल एस्टेट, अम्बतूर, चेन्नई - 600058 (तमिलनाडु)	(1) डॉ० जी सुंदर (2) श्री पी० सेंथिल कुमार (3) श्री ए० रॉबसन चिन्नदुरै	06.08.2014 से 05.08.2019
122	मैसर्स एडवर्ड फुड रिसर्च एंड एनैलसिस सेन्टर, सुभाष नगर, पी०ओ० नीलगंज बाजार, पी०एस० बारासात, जिला० नार्थ 24 पीजीएस, कोलकाता - 700121 (पश्चिम बंगाल)	(1) डॉ० देवोतम बनर्जी (2) श्री अलोके कुमार दत्ता (3) श्री सुरेश कुमार मंडल	06.08.2014 से 05.08.2019
123	मैसर्स कीवी ईको लेबोरेटरीज प्राइवेट लिमिटेड, प्लॉट सं० 19, एसवाई सं० 343, एलिप, इंडस्ट्रियल एस्टेट, गजुलमरम गाँव, कुथुल्लपुर (एमडी), जिला रंगारेड्डी, (तेलंगाना)	(1) डॉ० रजनी कुमारी (2) श्री एन०पी० विश्वनाथ (3) डॉ० पी० सरिता	06.08.2014 से 05.08.2019
124	मैसर्स नवेगा इवायरो इंजीनियर्स एंड कन्सल्टेंट, रवि चैंबर्स, प्लॉट नं० 100/1, मकान सं० 1-96/100, कवुरि हिल्स, मधापुर, हैदराबाद - 500033 (तेलंगाना)	(1) श्री चेल्लि चिरंजीवी (2) श्री चलापथी कोदैअह गिरी (3) सुश्री अश्वनीदेवी कोमारी रेड्डी	06.08.2014 से 05.08.2019
125	मैसर्स कल्याणी लेबोरेटरीज प्राइवेट लिमिटेड, प्लॉट सं० 841 - ए, रसुलगढ़, भुवनेश्वर - 751010 (ओडिशा)	(1) डॉ० देबाशीष बिस्वाल (2) डॉ० रेखा नायक	06.08.2014 से

		(3) श्री दिगम्बर अरुखा	05.08.2019
126	मैसर्स भरुच इन्वायरो इन्फ्रास्ट्रक्चर लिमिटेड (बीईआईएल), ऐनलिटिकल रिसर्च लेबोरेटरी, प्लॉट सं० 9701 - 16, जीआईडीसी, अंकलेश्वर, जिला भरुच- 393002 (गुजरात)	(1) डॉ० हितेंद्र कुमार जानी (2) श्री नरेन्द्र बी० पटेल (3) श्री धर्मेज आई० पटेल	06.08.2014 से 05.08.2019 ।"

[फा०सं० क्यू-15018/23/2013-सीपीडब्ल्यू]

डॉ. राशिद हसन, सलाहकार

टिप्पण : मूल अधिसूचना भारत के राजपत्र, असाधारण, में संख्यांक. का.आ. 1174(अ), तारीख 18 जुलाई, 2007 द्वारा प्रकाशित की गई थी और तत्पश्चात् अधिसूचना सं० का.आ. 1539(अ), तारीख 13 सितंबर, 2007, का.आ. 1811(अ), तारीख 24 अक्तूबर, 2007, का.आ. 55(अ), तारीख 9 जनवरी, 2008, का.आ. 428(अ), तारीख 4 मार्च, 2008, का.आ. 865(अ), तारीख 11 अप्रैल, 2008, का.आ. 1894(अ), तारीख 31 जुलाई, 2008, का.आ. 2728(अ), तारीख 25 नवंबर, 2008, का.आ. 1356(अ), तारीख 27 मई, 2009, का.आ.1802(अ) तारीख 22 जुलाई, 2009, का.आ. 2399(अ) तारीख 18 सितंबर, 2009, का.आ. 3122(अ), तारीख 7 दिसंबर, 2009, का.आ. 3123(अ), तारीख 7 दिसंबर, 2009, का.आ. 142(अ), तारीख 21 जनवरी, 2010, का.आ. 619(अ), तारीख 19 मार्च, 2010, का.आ. 1662(अ), तारीख 13 जुलाई, 2010, का.आ. 2390(अ), तारीख 30 सितंबर, 2010, का.आ. 2904 (अ), तारीख 8 दिसंबर, 2010, का.आ. 181(अ), तारीख 28 जनवरी, 2011, का.आ. 692(अ), तारीख 5 अप्रैल, 2011, का.आ. 1537(अ), तारीख 6 जुलाई, 2011, का.आ. 1754(अ), तारीख 28 जुलाई, 2011, का.आ. 2609(अ), तारीख 22 नवंबर, 2011, का.आ. 264(अ), तारीख 13 फरवरी, 2012, का.आ. 1150(अ), तारीख 22 मई, 2012, का.आ. 2039(अ), तारीख 5 सितंबर, 2012, का.आ. 2802(अ), तारीख 27 नवंबर, 2012 और का.आ. 2850(अ), तारीख 7 दिसंबर, 2012 तथा का.आ. 592(अ), तारीख 8 मार्च, 2013, का.आ. 945(अ), तारीख 8 अप्रैल, 2013, का.आ.2287(अ), तारीख 27 जुलाई, 2013, का.आ.2288(अ), तारीख 27 जुलाई, 2013 और का.आ.3489(अ), तारीख 26 नवंबर, 2013, का.आ. 21(अ), तारीख 3 जनवरी, 2014, का.आ. 561(अ), तारीख 26 फरवरी, 2014, का.आ. 1205 (अ), तारीख 5 मई, 2014, का.आ. 1190 (अ), तारीख 2 मई, 2014, और का.आ. 1680 (अ), तारीख 2 जुलाई, 2014, द्वारा उसका संशोधन किया गया ।

MINISTRY OF ENVIRONMENT, FORESTS AND CLIMATE CHANGE NOTIFICATION

New Delhi, the 6th August, 2014

S.O. 2003(E).—In exercise of the powers conferred by clause (b) of sub-section (1) of Section 12 and Section 13 of the Environment (Protection) Act, 1986 (29 of 1986) read with rule 10 of the Environment (Protection) Rules, 1986, the Central Government hereby makes the following further amendments in the notification of the Government of India in the Ministry of Environment and Forests, number S.O. 1174(E), dated the 18th July, 2007, namely :—

In the TABLE to the said notification,—

(a) after serial number 120 and the entries relating thereto, the following serial numbers and entries shall be inserted, namely :—

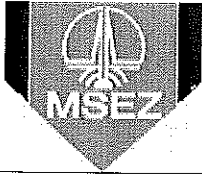
(1)	(2)	(3)	(4)
"121	M/s. ABC Techno Labs India Private Limited, No. 95-D/3, Industrial Estate, Ambattur, Chennai – 600 058 (Tamil Nadu)	(1) Dr. G. Sunder (2) Mr.P. Senthil Kumar (3) Mr. A. Robson Chinnadurai	06.08. 2014 to 05.08. 2019
122	M/s. Edward Food Research and Analysis Centre Ltd., Subhas Nagar, P.O. Nilgunj Bazar, P.S.: Barasat, District- North 24 PGS, Kolkata - 700121 (West Bengal)	(1) Dr. Devottam Banerjee (2) Mr. Alope Kumar Datta (3) Mr. Suresh Kumar Mandal	06 .08. 2014 to 05.08. 2019
123	M/s. Kiwis Eco Laboratories Private Limited, Plot No. 19, Sy. No.342, ALEAP Industrial Estate, Gajularamaram Village - Quthbullpur (MD), District Rangareddy - 500090 (Telangana)	(1) Dr. Rajani Kumari (2) Mr. N.P. Viswanath (3) Dr. P. Saritha	06 .08. 2014 to 05.08. 2019
124	M/s. Navega Enviro Engineers and Consultants, Ravi Chambers, Plot No.100/1, H.No.1-96/100, Kavuri Hills, Madhapur, Hyderabad- 500033	(1) Mr. Chelli Chiranjeevi (2) Mr. Chalapathi Kondaiah Gari	06 .08. 2014 to 05.08. 2019

	(Telangana)	(3) Ms. Aswinidevi Kommireddy	
125	M/s. Kalyani Laboratories Private Limited, Plot No. 841-A, Rasulgarh Bhubaneswar-751010 (Odisha)	(1) Dr. Debasis Biswal (2) Dr. Rekha Nayak (3) Mr. Digambar Arukha	06.08.2014 to 05.08.2019
126	M/s. Bharuch Enviro Infrastructure Limited (BEIL), Analytical Research Laboratory, Plot No. 9701-16, GIDC, Ankleshwar, District-Bharuch – 393002 (Gujarat)	(1) Dr. Hitendra Kumar Jani (2) Mr. Narendra B. Patel (3) Mr. Dharmesh I. Patel	06.08.2014 to 05.08.2019.

[F. No. Q.15018/23/2013-CPW]

Dr. RASHID HASAN, Advisor

Note.—The principal notification was published in the Gazette of India, Extraordinary *vide* number S.O. 1174 (E), dated the 18th July, 2007 and subsequently amended *vide* notification numbers S.O. 1539 (E), dated the 13th September, 2007, S.O.1811(E), dated the 24th October, 2007, S.O.55(E), dated the 9th January, 2008, S.O.428(E), dated the 4th March, 2008, S.O.865(E) dated the 11th April, 2008, S.O.1894(E), dated the 31st July, 2008, S.O.2728(E), dated the 25th November, 2008, S.O.1356(E), dated the 27th May, 2009, S.O.1802(E), dated the 22nd July, 2009, S.O. 2399(E), dated the 18th September, 2009, S.O.3122(E), dated the 7th December, 2009, S.O.3123(E), dated the 7th December, 2009, No. S.O. 142(E), dated the 21st January, 2010, S.O.619(E), dated the 19th March, 2010, S.O.1662(E) dated the 13th July, 2010, S.O.2390(E), dated the 30th September, 2010, S.O.2904(E), dated the 8th December, 2010, S.O.181(E), dated the 28th January, 2011, S.O. 692(E), dated the 5th April, 2011, S.O.1537(E), dated the 6th July, 2011, S.O.1754(E), dated the 28th July, 2011, S.O. 2609 (E) dated the 22nd November, 2011, S.O.264 (E), dated the 13th February, 2012, S.O.1150(E), dated the 22nd May, 2012, S.O. 2039(E), dated the 5th September, 2012, S.O. 2802(E), dated the 27th November, 2012, S.O. 2850(E), dated the 7th December, 2012, S.O. 592 (E), dated the 8th March, 2013, S.O.945(E), dated the 8th April, 2013, S.O.2287(E), dated the 27th July, 2013, S.O.2288(E), dated the 27th July, 2013, S.O.3489(E) dated the 26th November, 2013, S.O.21(E), dated 3rd January, 2014, S.O.561(E), the 26th February, 2014, S.O.1205(E), dated the 5th May, 2014, S.O.1190(E), dated the 2nd May, 2014 and S.O.1680(E), dated the 2nd July, 2014.



ANNEXURE-II

ENVIRONMENTAL MONITORING REPORT
SPECIAL ECONOMIC ZONE LIMITED, MANGALORE



APRIL- 2016

Prepared by:

ABC Techno Labs India Private Limited

An ISO : 9001:2008, ISO :14001:2004 & OHSAS : 18001:2007 Certified Company
(Accrediated by NABL, NABET, MoEF)



HelpLine: + 91- 94442 60000 Website: www.abctechnolab.com

Branches: *Delhi, Mumbai, Bangalore, Kolkata, Coimbatore, Jaipur, Cochin*



Corporate Office:

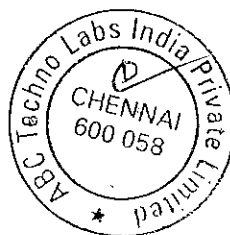
No.2, 2nd Street, Thangam Colony, Anna Nagar West,
Chennai, Tamil Nadu, India - 600 040.

Ph:+91 -44 -2616 1123/ 24 /25. Fax: +91 -44 -2616 3456

Lab:

N0.95D/3, 3rd Cross Street, Sector 2, South Phase,
Ambattur Industrial Estate, Chennai - 600 058.

Ph:+91- 44 -2625 7788, 2635 7788 Fax:+91- 44 -2625 7799





Environmental Monitoring Report – Mangalore Special
Economic zone Limited, Mangalore.

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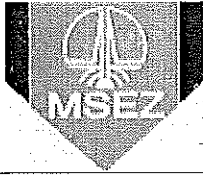
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ANNEXURE

Annexure -I	MoEF Certificate/NABL Certificate
Annexure -II	Sampling Location Map.



ENVIRONMENTAL MONITORING REPORT

1.0. Introduction:

Mangalore Special Economic Zone Limited is located 8 km aeriaily to North East of New Mangalore Port and is adjacent to the existing refinery of MRPL on its West. The Industrial estate of the District, namely Baikampady is located southwest of MSEZ. The Mangalore Airport is about 5 km South East of MSEZ.

1.1. Description of the Organization:

M/s. **ABC Techno Labs India Private Limited, Chennai**, an ISO 9001, ISO 14001 & OHSAS 18001 Certified Company has been accredited by,

- National Accreditation Board for Education and Training (NABET), a division of Quality Council of India (QCI).
- Recognized under EP Act, 1986 by Ministry of Environment and Forest.
- National Accreditation Board for Testing and Calibration Laboratories (NABL), an autonomous body under the Department of Science & Technology, Government of India.

The certificate of authorization is enclosed in the Annexure-I.

We offer the following services,

- Environmental Impact Assessment (EIA) & Environmental Management Plan (EMP) for Infrastructure & Industrial Projects.
- Social Impact Assessment Studies including Rehabilitation & Resettlement
- Environmental Monitoring
- Environmental Audits
- Capacity Building for Environmental Management
- Solid Waste Management
- Effective Management of Resources and Wastes
- Risk Assessment & Management Studies



1.2. Scope of Work:

The scope of the work is to conduct Environmental monitoring at Special Economic Zone, Mangalore, following the guidelines and regulations of MoEF/CPCB standards. The scope of the work for the month of April 2016 is to conduct ambient air quality monitoring at five locations. Sampling Locations are given in annexure - II.

2.0. Ambient Air Quality Monitoring Details:

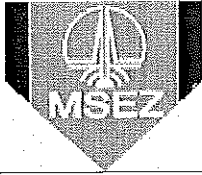
Ambient air quality monitoring (AAQM) was carried out at five locations with due consideration to the meteorological conditions of the Project area. Ambient air quality monitoring was carried out at each location on 24 hourly basis on two consecutive days per month. The details of AAQ monitoring stations are given in Table 1.1.

Table - 1.1. Details of Ambient Air Monitoring Locations

STATION CODE	NAME OF THE LOCATIONS	GEOGRAPHICAL LOCATION
AAQ1	120 ML Water Reservoir	N-12°59'13.40" E-74°52'03.00"
AAQ2	MSEZ, Permude	N-12°59'54.00" E-74°52'53.60"
AAQ3	GSS3-10 ML Water Reservoir	N-12°58'57.70" E-74°51'30.10"
AAQ4	CETP Location	N-12°59'51.40" E-74°51'24.70"
AAQ5	Bajpe	N-12°58'32.80" E-74°52'10.40"

2.1.1. Method used for Air Quality Monitoring:

Respirable Dust Sampler and Fine Particulate Samplers were used for collecting Particulate Matter of size less than 10 μm (PM_{10}) and 2.5 μm ($\text{PM}_{2.5}$) respectively. Gaseous Samplers were used for sampling gaseous pollutants such as SO_2 , NO_x Ammonia and Ozone (O_3). Organic vapour sampler was used to sample Hydrocarbon. Gas analyzer was used to estimate Carbon monoxide (CO) level in ambient air.



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The Analytical techniques used for ambient air quality monitoring and its minimum detectable limit for each parameter is tabulated in **Table 1.2**.

Table - 1.2. Analytical Techniques Used for Ambient Air Quality Monitoring

2.1.2. Micro-Meteorology :

S.NO	PARAMETER	TECHNIQUE	MINIMUM DETECTABLE LIMIT
1	Particulate Matter PM ₁₀	Fine Particulate Sampler (Gravimetric method)	5.0 µg/m ³
2	Particulate Matter PM _{2.5}	Fine Particulate Sampler (Gravimetric method)	5.0 µg/m ³
3	Sulphur di Oxide	Modified West & Gaeke Method	5.0 µg/m ³
4	Nitrogen Oxide	Jacob and Hochheiser Method	5.0 µg/m ³
5	Carbon monoxide	Gas Analyser	0.1 ppm
6	Ammonia	Nessler's Method	5 µg/m ³
7	Ozone	KI Absorption and Colorimetric	5 µg/m ³
8	Benzene,	IS 5182: Pt 11: 2006	0.01 µg/m ³
9	Benzo[a]pyrene	IS 5182: Pt 12: 1991	0.1 ng/m ³
10	Lead,	IS 5182 P 22: 2004	0.1 µg/m ³
11	Arsenic, Nickel	IS 5182 P 22: 2004	1 ng/m ³

Wind Speed, Predominant Wind Direction, Temperature, Relative Humidity between 01-04-2016 and 30-04-2016 at MSEZ is given in Table 1.3.



Environmental Monitoring Report – Mangalore Special Economic Zone Limited, Mangalore.

Table-1.3- Micro-Meteorology

DATE	TEMPERATURE (°C)		RELATIVE HUMIDITY (%)		WIND SPEED (Km/hr)		PREDOMINANT WIND DIRECTION
	MIN	MAX	MIN	MAX	MIN	MAX	
01-04-2016	30	34	32	84	5	18	West
02-04-2016	31	35	42	94	4.5	14.5	Calm
03-04-2016	30	34	37	94	6	18	North
04-04-2016	30	34	48	84	6	24	Calm
05-04-2016	30	34	47	89	4	22	Calm
06-04-2016	27	34	48	84	8	22	West South West
07-04-2016	27	36	38	84	9	26	North
08-04-2016	26	35	42	89	6	26	Calm
09-04-2016	26	34	44	84	6	20	Calm
10-04-2016	25	34	45	89	6	22	West
11-04-2016	26	34	47	79	7	22	West North West
12-04-2016	26	34	58	84	6	22	West
13-04-2016	27	35	51	89	6	18	Calm
14-04-2016	25	35	44	89	7	18	West
15-04-2016	26	35	44	84	7	22	West
16-04-2016	24	34	52	89	7	18	West North West
17-04-2016	26	35	43	84	7	20	North
18-04-2016	26	34	48	84	7	22	West
19-04-2016	26	35	45	84	5	18	Calm
20-04-2016	25	36	44	84	6	18	West North West
21-04-2016	34	26	41	89	5	18	Calm
22-04-2016	26	34	44	84	7	22	North
23-04-2016	26	34	39	84	8	28	North West
24-04-2016	25	34	43	84	7	26	North
25-04-2016	24	34	42	89	8	28	West North West
26-04-2016	25	34	44	84	7	26	Calm
27-04-2016	26	34	47	84	6	22	West
28-04-2016	25	35	44	94	5	22	Clam
29-04-2016	26	35	43	89	7	20	West
30-04-2016	36	26	37	84	6	22	West North West
01-04-2016	30	34	32	84	5	18	West



Environmental Monitoring Report – Mangalore Special Economic Zone Limited, Mangalore.

2.1.3. Wind Rose:

The wind roses diagram for the month of April 2016 at Mangalore SEZ is depicted in Figure 1.1.

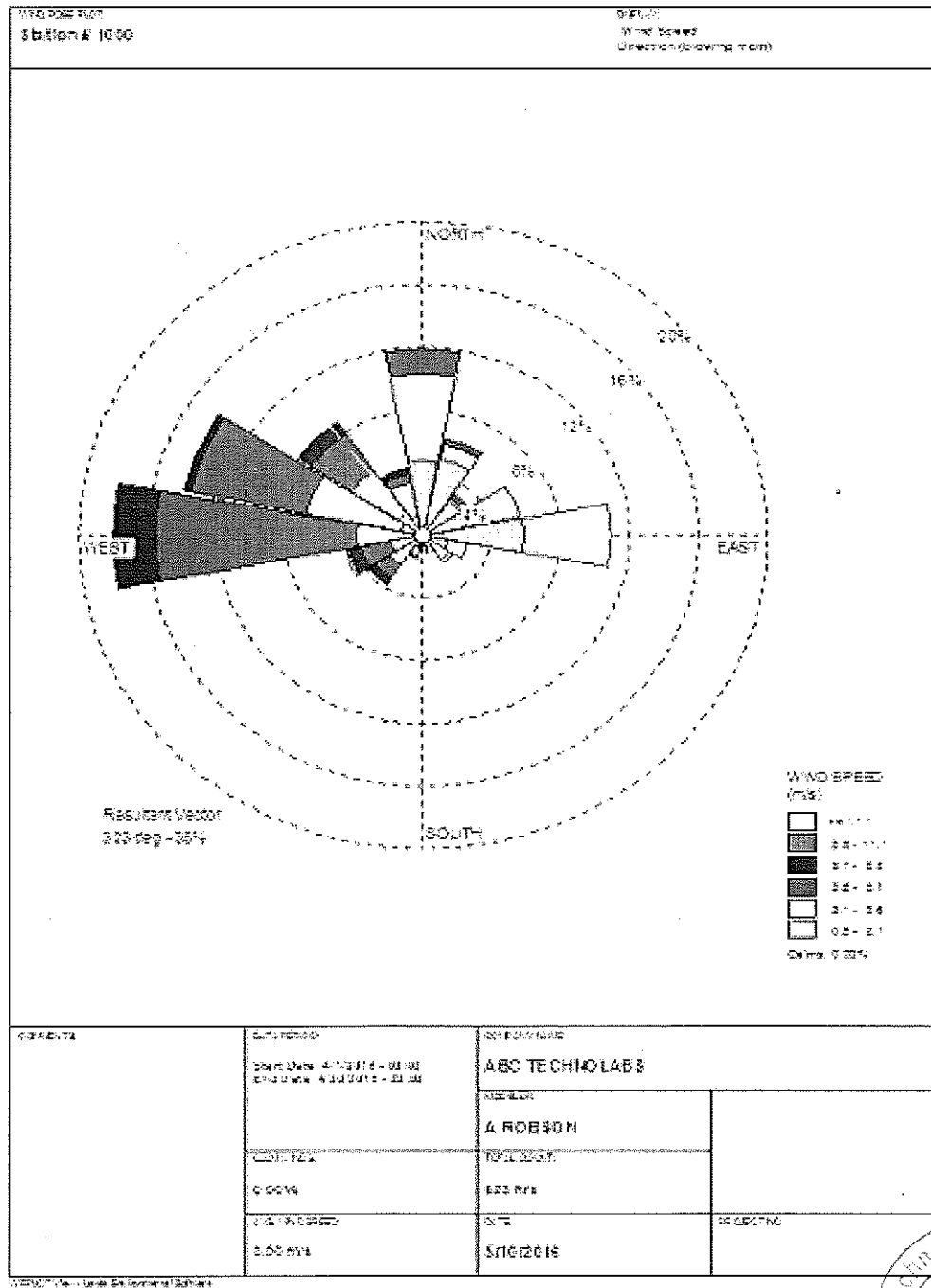
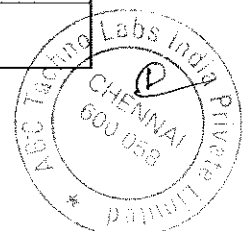


Figure 1.1. Wind Rose Diagram – April 2016





Environmental Monitoring Report – Mangalore Special Economic Zone Limited, Mangalore.

2.1.4. AMBIENT AIR QUALITY RESULTS:

The 24 hourly average results of Ambient Air Quality Monitoring of two consecutive days for the month of **April 2016** are presented in Table-1.4(a), 1.4 (b), 1.4(c), 1.4(d), 1.4(e) and 1.4(f). The obtained results are compared with the standards prescribed by Central Pollution Control Board (CPCB) for “Industrial, Rural, Residential and other areas”.

Table 1.4 (a)- AMBIENT AIR QUALITY REPORT

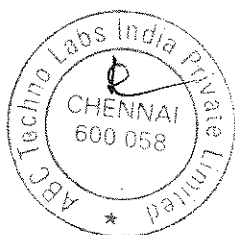
SAMPLE ID NO	ABC/MSEZ/25/AS/270416/A 171-172
SAMPLE DESCRIPTION	AMBIENT AIR QUALITY MONITORING.
SAMPLE DRAWN BY	ABC Techno Labs India Private Limited
NAME OF THE CLIENT	MANGALORE SPECIAL ECONOMIC ZONE LIMITED, MANGALORE
DATE SAMPLED	27-04-2016 (Monitoring duration 24hrs/day for 2 days)
REPORT DATE	05-05-2016

S.No	Location	Height GL(m)	Pollutant Concentration in $\mu\text{g}/\text{m}^3$						
			PM _{2.5}	PM ₁₀	SO ₂	NO _x	Pb	NH ₃	O ₃
1	CETP Location	2	26.7	59.6	13.4	16.8	BDL (<0.1)	11	13.6
2	MSEZ-GSS 3	2	30.2	63.7	14.2	22.6	BDL (<0.1)	12.8	14.1
Test Method			EPA- 40 CFR Part 50	IS 5182 Pt.23 : 2006	West & Gaeke	Jacob & Hochheister	IS 5182 P 22	Nessler's Method	KI Absorption Method
CPCB STANDARDS									
Industrial /Residential / Rural and Other Area			60	100	80	80	1	400	100

BDL- Below Detection Limit

Contd.....

For ABC Techno Labs India Private Limited.,



[Signature]
AUTHORIZED SIGNATORY

QUALITY MANAGER



Environmental Monitoring Report - Mangalore Special Economic Zone Limited, Mangalore.

Table 1.4(b) - AMBIENT AIR QUALITY REPORT

SAMPLE ID NO	ABC/MSEZ/25/AS/270416/A 171-172
SAMPLE DESCRIPTION	AMBIENT AIR QUALITY MONITORING.
SAMPLE DRAWN BY	ABC Techno Labs India Private Limited
NAME OF THE CLIENT	MANGALORE SPECIAL ECONOMIC ZONE LIMITED, MANGALORE
DATE SAMPLED	27-04-2016 (Monitoring duration 24hrs/day for 2 days)
REPORT DATE	05-05-2016

S.No	Location	Pollutant Concentration				CO, mg/m ³
		Benzene µg/m ³	Benzo[a]pyrene ng/m ³	Arsenic ng/m ³	Nickel ng/m ³	
1	CETP Location	BDL (<0.01)	BDL (<0.1)	BDL (<1)	BDL (<1)	BDL(<0.1)
2	MSEZ-GSS 3	BDL (<0.01)	BDL (<0.1)	BDL (<1)	BDL (<1)	0.38
Test Method		IS 5182: Pt 11: 2006	IS 5182: Pt 12: 1991	IS 5182 P 22	IS 5182 P 22	Gas Analyser
CPCB STANDARDS						
Industrial /Residential / Rural and Other Area		5	1	6	20	2

BDL- Below Detection Limit

Contd.....



For ABC Techno Labs India Private Limited,

[Signature]
AUTHORIZED SIGNATORY

QUALITY MANAGER



Environmental Monitoring Report - Mangalore Special Economic Zone Limited, Mangalore.

Table 1.4(c) - AMBIENT AIR QUALITY REPORT

SAMPLE ID NO	ABC/MSEZ/25/AS/270416/A 173
SAMPLE DESCRIPTION	AMBIENT AIR QUALITY MONITORING.
SAMPLE DRAWN BY	ABC Techno Labs India Private Limited
NAME OF THE CLIENT	MANGALORE SPECIAL ECONOMIC ZONE LIMITED, MANGALORE
DATE SAMPLED	27-04-2016 (Monitoring duration 24hrs/day for 2 days)
REPORT DATE	05-05-2016

S.No	Location	Height GL(m)	Pollutant Concentration in $\mu\text{g}/\text{m}^3$						
			PM _{2.5}	PM ₁₀	SO ₂	NO _x	Pb	NH ₃	O ₃
3	Baipe	2	19.4	42.8	5.1	13	BDL (<0.1)	BDL(<5)	12.7
Test Method			EPA- 40 CFR Part 50	IS 5182 Pt.23 : 2006	West & Gaeke	Jacob & Hochheister	IS 5182 P 22	Nessler's Method	KI Absorption Method
CPCB STANDARDS									
Industrial /Residential / Rural and Other Area			60	100	80	80	1	400	100

BDL- Below Detection Limit

Contd.....



For ABC Techno Labs India Private Limited.,

AUTHORIZED SIGNATORY

QUALITY MANAGER



भारत का राजपत्र The Gazette of India

असाधारण
EXTRAORDINARY

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अधिसूचना

नई दिल्ली, 6 अगस्त, 2014

का.आ. 2003(अ).— केन्द्रीय सरकार, पर्यावरण (संरक्षण) नियमावली, 1986 के नियम 10 के साथ पठित पर्यावरण (संरक्षण) अधिनियम, 1986 (1986 का 29) की धारा 12 की उप-धारा (1) के खंड (ख) और धारा 13 द्वारा प्रदत्त शक्तियों का प्रयोग करते हुए, भारत सरकार के पर्यावरण और वन मंत्रालय की अधिसूचना संख्यांक का.आ. 1174(अ), तारीख 18 जुलाई, 2007 में निम्नलिखित और संशोधन करती है, अर्थात् :—

2. उक्त अधिसूचना से उपाबद्ध सारणी में,

(क) क्रम संख्यांक 120 और उससे संबंधित प्रविष्टियों के पश्चात् निम्नलिखित क्रम संख्यांक और प्रविष्टियां अंतःस्थापित की जाएंगी अर्थात् :—

(1)	(2)	(3)	(4)
" 121	मैसर्स एबीसी टेक्नो लैब्स इंडिया प्राइवेट लिमिटेड, सं० 95-डी/3, इंडस्ट्रियल एस्टेट, अम्बतूर, चेन्नई - 600058 (तमिलनाडु)	(1) डॉ० जी सुंदर (2) श्री पी० सैथिल कुमार (3) श्री ए० रॉबसन चिन्नदुरै	06.08.2014 से 05.08.2019
122	मैसर्स एडवर्ड फुड रिसर्च एंड एनैलसिस सेन्टर, सुभाष नगर, पी०ओ० नीलगंज बाजार, पी०एस० बारासात, जिला० नार्थ 24 पीजीएस, कोलकाता - 700121 (पश्चिम बंगाल)	(1) डॉ० देवोतम बनर्जी (2) श्री अलोके कुमार दत्ता (3) श्री सुरेश कुमार मंडल	06.08.2014 से 05.08.2019
123	मैसर्स कीवी ईको लेबोरेटरीज प्राइवेट लिमिटेड, प्लॉट सं० 19, एसवाई सं० 343, एलिप, इंडस्ट्रियल एस्टेट, गजुलरमरम गाँव, कुथुल्लपुर (एमडी), जिला रंगारेड्डी, (तेलंगाना)	(1) डॉ० रजनी कुमारी (2) श्री एन०पी० विश्वनाथ (3) डॉ० पी० सरिता	06.08.2014 से 05.08.2019
124	मैसर्स नवेगा इंवायरो इंजीनियर्स एंड कन्सल्टेन्ट, रवि चैंबर्स, प्लॉट नं० 100/1, मकान सं० 1-96/100, कवुरि हिल्स, मधापुर, हैदराबाद - 500033 (तेलंगाना)	(1) श्री चेल्लि चिरंजीवी (2) श्री चलापथी कोदैअह गिरी (3) सुश्री अश्वनीदेवी कोमारी रेड्डी	06.08.2014 से 05.08.2019
125	मैसर्स कल्याणी लेबोरेटरीज प्राइवेट लिमिटेड, प्लॉट सं० 841 - ए, रसुलगढ़, भुवनेश्वर - 751010 (ओडिशा)	(1) डॉ० देबाशीष बिस्वाल (2) डॉ० रेखा नायक	06.08.2014 से

		(3) श्री दिगम्बर अरुखा	05.08.2019
126	मैसर्स भरुच इन्वायरो इन्फ्रास्ट्रक्चर लिमिटेड (बीईआईएल), ऐनलिटिकल रिसर्च लेबोरेटरी, प्लॉट सं० 9701 - 16, जीआईडीसी, अंकलेश्वर, जिला भरुच- 393002 (गुजरात)	(1) डॉ० हितेंद्र कुमार जानी (2) श्री नरेन्द्र बी० पटेल (3) श्री धर्मेण आई० पटेल	06.08.2014 से 05.08.2019 ।"

[फा०सं० क्यू-15018/23/2013-सीपीडब्ल्यू]

डॉ. राशिद हसन, सलाहकार

टिप्पण : मूल अधिसूचना भारत के राजपत्र, असाधारण, में संख्यांक. का.आ. 1174(अ), तारीख 18 जुलाई, 2007 द्वारा प्रकाशित की गई थी और तत्पश्चात् अधिसूचना सं० का.आ. 1539(अ), तारीख 13 सितंबर, 2007, का.आ. 1811(अ), तारीख 24 अक्तूबर, 2007, का.आ. 55(अ), तारीख 9 जनवरी, 2008, का.आ. 428(अ), तारीख 4 मार्च, 2008, का.आ. 865(अ), तारीख 11 अप्रैल, 2008, का.आ. 1894(अ), तारीख 31 जुलाई, 2008, का.आ. 2728(अ), तारीख 25 नवंबर, 2008, का.आ. 1356(अ), तारीख 27 मई, 2009, का.आ.1802(अ) तारीख 22 जुलाई, 2009, का.आ. 2399(अ) तारीख 18 सितंबर, 2009, का.आ. 3122(अ), तारीख 7 दिसंबर, 2009, का.आ. 3123(अ), तारीख 7 दिसंबर, 2009, का.आ. 142(अ), तारीख 21 जनवरी, 2010, का.आ. 619(अ), तारीख 19 मार्च, 2010, का.आ. 1662(अ), तारीख 13 जुलाई, 2010, का.आ. 2390(अ), तारीख 30 सितंबर, 2010, का.आ. 2904 (अ), तारीख 8 दिसंबर, 2010, का.आ. 181(अ), तारीख 28 जनवरी, 2011, का.आ. 692(अ), तारीख 5 अप्रैल, 2011, का.आ. 1537(अ), तारीख 6 जुलाई, 2011, का.आ. 1754(अ), तारीख 28 जुलाई, 2011, का.आ. 2609(अ), तारीख 22 नवंबर, 2011, का.आ. 264(अ), तारीख 13 फरवरी, 2012, का.आ. 1150(अ), तारीख 22 मई, 2012, का.आ. 2039(अ), तारीख 5 सितंबर, 2012, का.आ. 2802(अ), तारीख 27 नवंबर, 2012 और का.आ. 2850(अ), तारीख 7 दिसंबर, 2012 तथा का.आ. 592(अ), तारीख 8 मार्च, 2013, का.आ. 945(अ), तारीख 8 अप्रैल, 2013, का.आ.2287(अ), तारीख 27 जुलाई, 2013, का.आ.2288(अ), तारीख 27 जुलाई, 2013 और का.आ.3489(अ), तारीख 26 नवंबर, 2013, का.आ. 21(अ), तारीख 3 जनवरी, 2014, का.आ. 561(अ), तारीख 26 फरवरी, 2014, का.आ. 1205 (अ), तारीख 5 मई, 2014, का.आ. 1190 (अ), तारीख 2 मई, 2014, और का.आ. 1680 (अ), तारीख 2 जुलाई, 2014, द्वारा उसका संशोधन किया गया ।

MINISTRY OF ENVIRONMENT, FORESTS AND CLIMATE CHANGE NOTIFICATION

New Delhi, the 6th August, 2014

S.O. 2003(E).—In exercise of the powers conferred by clause (b) of sub-section (1) of Section 12 and Section 13 of the Environment (Protection) Act, 1986 (29 of 1986) read with rule 10 of the Environment (Protection) Rules, 1986, the Central Government hereby makes the following further amendments in the notification of the Government of India in the Ministry of Environment and Forests, number S.O. 1174(E), dated the 18th July, 2007, namely :—

In the TABLE to the said notification,—

(a) after serial number 120 and the entries relating thereto, the following serial numbers and entries shall be inserted, namely :—

(1)	(2)	(3)	(4)
"121	M/s. ABC Techno Labs India Private Limited, No. 95-D/3, Industrial Estate, Ambattur, Chennai – 600 058 (Tamil Nadu)	(1) Dr. G. Sunder (2) Mr.P. Senthil Kumar (3) Mr. A. Robson Chinnadurai	06.08. 2014 to 05.08. 2019
122	M/s. Edward Food Research and Analysis Centre Ltd., Subhas Nagar, P.O. Nilgunj Bazar, P.S.: Barasat, District- North 24 PGS, Kolkata - 700121 (West Bengal)	(1) Dr. Devottam Banerjee (2) Mr. Alope Kumar Datta (3) Mr. Suresh Kumar Mandal	06 .08. 2014 to 05.08. 2019
123	M/s. Kiwis Eco Laboratories Private Limited, Plot No. 19, Sy. No.342, ALEAP Industrial Estate, Gajularamaram Village - Quthbullpur (MD), District Rangareddy - 500090 (Telangana)	(1) Dr. Rajani Kumari (2) Mr. N.P. Viswanath (3) Dr. P. Saritha	06 .08. 2014 to 05.08. 2019
124	M/s. Navega Enviro Engineers and Consultants, Ravi Chambers, Plot No.100/1, H.No.1-96/100, Kavuri Hills, Madhapur, Hyderabad - 500033	(1) Mr. Chelli Chiranjeevi (2) Mr. Chalapathi Kondaiah Gari	06 .08. 2014 to 05.08. 2019

	(Thelangana)	(3) Ms. Aswinidevi Kommireddy	
125	M/s. Kalyani Laboratories Private Limited, Plot No. 841-A, Rasulgarh Bhubaneswar-751010 (Odisha)	(1) Dr. Debasis Biswal (2) Dr. Rekha Nayak (3) Mr. Digambar Arukha	06.08. 2014 to 05.08. 2019
126	M/s. Bharuch Enviro Infrastructure Limited (BEIL), Analytical Research Laboratory, Plot No. 9701-16, GIDC, Ankleshwar, District-Bharuch – 393002 (Gujarat)	(1) Dr. Hitendra Kumar Jani (2) Mr. Narendra B. Patel (3) Mr. Dharmesh I. Patel	06.08. 2014 to 05.08. 2019. "

[F. No. Q.15018/23/2013-CPW]

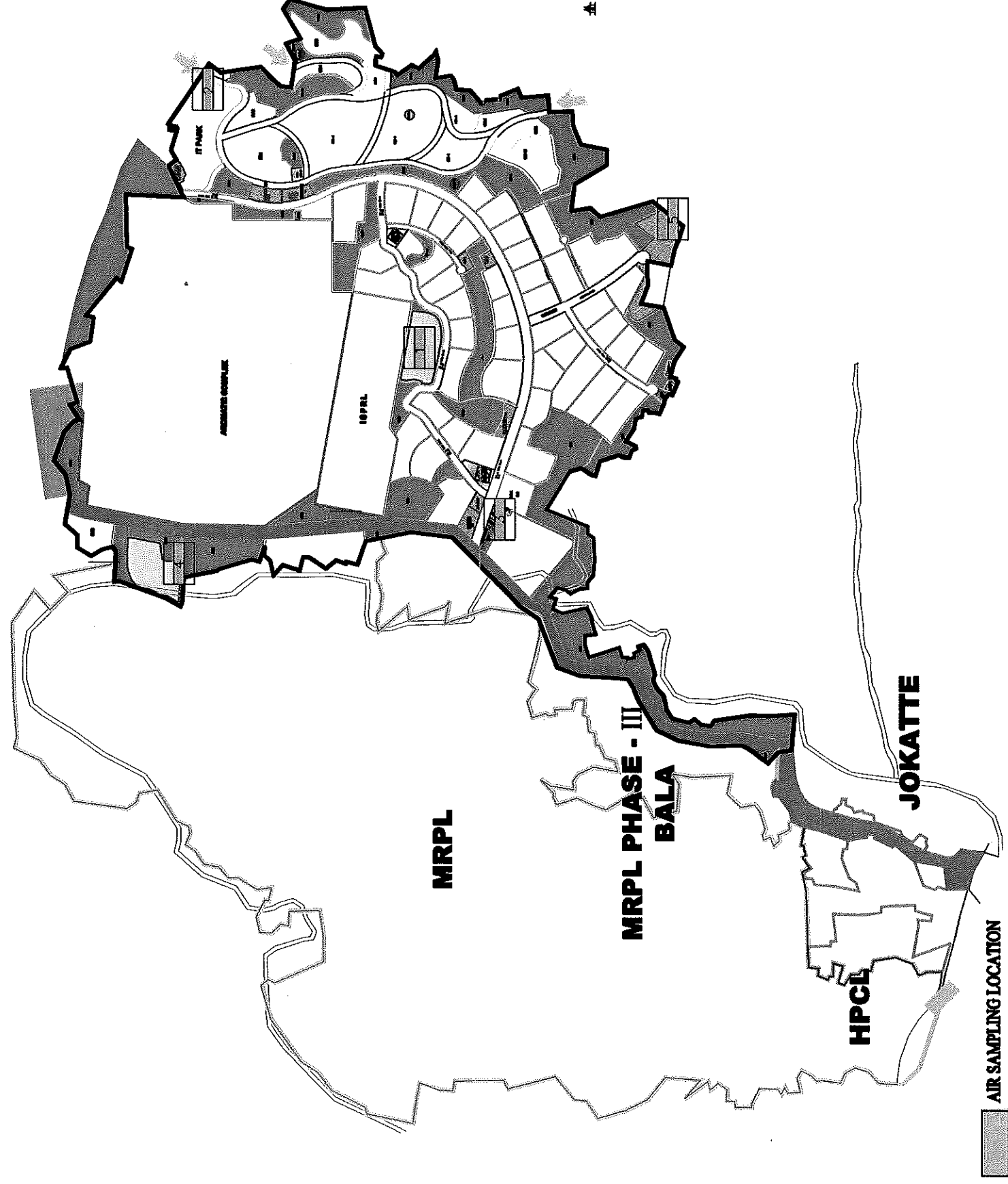
Dr. RASHID HASAN, Advisor

Note.—The principal notification was published in the Gazette of India, Extraordinary *vide* number S.O. 1174 (E), dated the 18th July, 2007 and subsequently amended *vide* notification numbers S.O. 1539 (E), dated the 13th September, 2007, S.O.1811(E), dated the 24th October, 2007, S.O.55(E), dated the 9th January, 2008, S.O.428(E), dated the 4th March, 2008, S.O.865(E) dated the 11th April, 2008, S.O.1894(E), dated the 31st July, 2008, S.O.2728(E), dated the 25th November, 2008, S.O.1356(E), dated the 27th May, 2009, S.O.1802(E), dated the 22nd July, 2009, S.O. 2399(E), dated the 18th September, 2009, S.O.3122(E), dated the 7th December, 2009, S.O.3123(E), dated the 7th December, 2009, No. S.O. 142(E), dated the 21st January, 2010, S.O.619(E), dated the 19th March, 2010, S.O.1662(E) dated the 13th July, 2010, S.O.2390(E), dated the 30th September, 2010, S.O.2904(E), dated the 8th December, 2010, S.O.181(E), dated the 28th January, 2011, S.O. 692(E), dated the 5th April, 2011, S.O.1537(E), dated the 6th July, 2011, S.O.1754(E), dated the 28th July, 2011, S.O. 2609 (E) dated the 22nd November, 2011, S.O.264 (E), dated the 13th February, 2012, S.O.1150(E), dated the 22nd May, 2012, S.O. 2039(E), dated the 5th September, 2012, S.O. 2802(E), dated the 27th November, 2012, S.O. 2850(E), dated the 7th December, 2012, S.O. 592 (E), dated the 8th March, 2013, S.O.945(E), dated the 8th April, 2013, S.O.2287(E), dated the 27th July, 2013, S.O.2288(E), dated the 27th July, 2013, S.O.3489(E) dated the 26th November, 2013, S.O.21(E), dated 3rd January, 2014, S.O.561(E), the 26th February, 2014, S.O.1205(E), dated the 5th May, 2014, S.O.1190(E), dated the 2nd May, 2014 and S.O.1680(E), dated the 2nd July, 2014.



ANNEXURE-II

MSEZ Phase I - ENVIRONMENT MONITORING LOCATIONS



Mangalore S E Z Ltd.
3rd Floor, MUDA Building
Urwa street, Mangalore



Item wise Details of CSR Activities and Proposed time bound Action Plan

5% of Approved MSEZL Phase I project Cost (Rs 1527.5 Crores)- Rs 76.375 Crores													
S. No.	Description	Proposed CSR Expenses	Amount incl. in Project Cost	Expenses till Oct 2012	Expenses till Oct2012-Feb 2014	Expenses till Feb 2014-March-2015	Expenses till March 2015-January- 2016	Total expense till date	Balance				
										2016-17	2017-18	2018-19	2019-2020
1	Water Supply Facilities												
	a) RCC Over Head water tanks including main supply pipeline in Permude, Bajpe & Kulai Villages & 48 Acre Drain work b/w HPCL colony & ODC road	2.00	1.00	0.85	0.99	0.145	0.110	2.10	0.000	-	-	-	-
	b) Drinking Water facilities for neighboring Villages, 6 acres & 9.58 Acres R&R Colony	1.50	2.20	1.20	0.26	0.04	0.00	1.50	0.00	-	-	-	-
	c) Provision of Bore wells in Permude & Bajpe Villages	0.70		0.17	0.00	0.530	0.000	0.70	0.00	-	-	-	-
2	Sanitation facilities												
	a) Development of Under Ground Drainage	4.09	4.09	2.60	1.08	0.00	0.00	3.68	0.41	0.21	0.10	0.10	-
	b) Skid mounted STPs for Kulai & Bajpe Villages	0.60	0.60	0.17	0.00	0.235	0.077	0.48	0.12	0.07	0.05	-	-
3	Community facilities												
	a) Creation of self employment facilities by provision of suitable shops in Kulai & Permude villages	0.11	0.11	0.11	0.00	0.00	0.00	0.11	0.00	-	-	-	-
	b) Sponsoring of Community facilities including Primary Health Centre, Play ground, Primary School, Post Office, gray yard, compound wall, temple, Drain work near Balana mandir lokatte, road repair near swayamlingeshwara temple bajpe etc etc	4.00	4.00	0.00	3.85	0.150	0.000	4.00	0.00	-	-	-	-
	c) Any Miscellaneous Development works to local communities	0.50	0.50	0.00	0.00	0.500	0.009	0.50	0.00	-	-	-	-
4	Educational Sponsorship												
	a) Up gradation of Skills & Technical training facilities for local youth.	6.00	6.00	5.53	0.00	0.260	0.000	5.79	0.21	0.10	0.11	-	-
5	Bypass Road for connectivity between Surakal to Bajpe for Public use.	36.98	36.98	17.84	7.26	0.00	0.00	25.10	11.88	3.00	4.00	3.88	-
6	Events Sponsorship												
	a) Improvement of facilities for various Religious places for local communities and sponsoring traditional ceremonies of local communities.	2.00	1.37	1.37	0.00	0.530	0.000	1.90	0.10	0.50	0.50	-	-
	b) Sponsoring of various local events in the major Educational Institutions, Cultural functions, Traditional events, Medical camps, Distribution of Plantations etc in nearby schools & Villages in and around Mangalore.	2.00	0.95	0.95	0.00	0.903	0.122	1.98	0.02	0.00	0.02	-	-
7	Sponsoring education and cultural activities to local fishermen Community	2.97	2.93	0.93	0.00	0.39	0.00	1.32	1.65	0.65	1.00	-	-
8	Development roads in surrounding villages & Panchayat roads in Kaseel, Permude & Kuthethoor Villages and villages enroute River water Pipeline	12.93	2.79	2.79	9.54	0.402	0.000	12.73	0.20	0.20	-	-	-
Total		76.38	63.52	34.51	22.98	4.10	0.309	61.88	14.59	4.73	5.78	3.98	0.00



ONGC Mangalore Petrochemicals Limited

(A Subsidiary of Mangalore Refinery and Petrochemicals Ltd.)
Mangalore Special Economic Zone, Permude, Mangaluru-574 509
CIN : U40107KA2006PLC041258 Website : www.ompl.co.in
Phone : +91 824 2881518 Fax : +91 824 2881539

REF: OMPL/MoEF/PK/2016-17/

Date: 21.05. 2016

To:

The Head- Technical
MSEZL, Mangalore

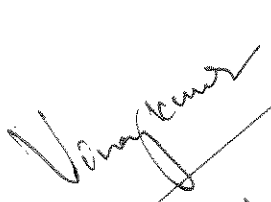
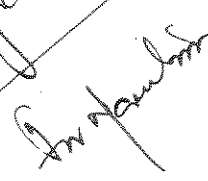
Dear Sir,

Sub: Submission of Half Yearly Compliance Reports of OMPL under Environmental Clearance for Phase-I, MSEZ project, (Including Aromatic Complex) for the period from October, 2015 to March, 2016

With reference to the above, please find enclosed herewith, Half Yearly Compliance Reports of OMPL, for compilation at your end and submission to the concerned Authority under intimation to our office.

Thanking You,


Prashanth Kulkarni
Manager (TS)


Compliance to Environmental Clearance

issued by MoEF vide letter No. 21-383/2007-IA-III dated 3rd April, 2008

Sl. No.	Consent Condition	Compliance
2	The Mangalore Special Economic Zone (MSEZ) Phase-I involves a) MRPL Phase -III Refinery b) Aromatic Complex and e) Olefin Complex are proposed to be developed by the anchor promoter of MSEZ I.e M/s ONGC-MRPL in the already acquired land of about 1800 acres. The proposed MSEZ is planned adjacent to the existing MRPL refinery complex on north & eastern sides and proposed to connect NMPT with a dedicated 70/100 meter wide road-cum-pipeline (total approx. 15 km long) corridor for movement of cargo, crude and products between New Mangalore Port and MSEZ. The proposed layout has one main entry from the proposed Mangalore MSEZ corridor connected to the existing New Mangalore Port & National Highway (NH-17). The primary, Secondary and Tertiary roads are planned to give access to the industries falling in the MSEZ Phase -I. Industrial Zones for locating the olefin complex, aromatic complex, D/S Petrochemicals, ISPRCL underground crude oil storage and land for MRPL Phase-III Refinery are effectively placed in the central and southwest part of the proposed MSEZ premises. Further, the SEZ will have necessary road alignment between NMPT, SEZ and network of roads within, including service roads for inspection of pipelines on elevated corridors. The pipelines shall be built at elevated corridor locations. Pipelines will be laid on sleepers and pipe racks with sufficient ground clearance. The preferred corridor alignment avoids Coastal Regulation Zone -I & II portion along the Gurupur River and it will have elevated roadway over structures (railways / minor bridges) and reinforced earth walls. However the corridor passes over CRZ-III zone along the banks of the Kudumbur rivulet (South of ELF gas) in the form of a bridge. The proposed industrial units in MSEZ phase -1	info.
II	To meet the objective of producing paraxylene, aromatic complex has been considered. To maximize paraxylene, broad cut heavy naptha streams are selected as feedstock to NHT/ CCR. Aromatics precursors to new reformer include constituents that produce toluene, C8-aromatics mix & C9+ aromatics. Whereas a xylene isomerization unit has been considered to convert other C8 - aromatics into paraxylene, a transalkylation & disproportionation (TADP) unit has also been included to convert toluene & C9+ aromatics into C8-aromatics mix. simulated moving bed adsorption for paraxylene recovery (PAREX) has been incorporated.	info.
1	NHT/ CCR- 0.95 MMTPA	Complied
2	Isomerization Unit (ISOMER)-3.16 MMTPA	Complied
3	Transalkylation & Disproportionation Unit (TADP)-1.71 MMTPA	Complied
4	Paraxylene Recovery (PXREC)- 4.07 MMTPA	Complied
5	Xylene Fractionation Unit- 4.64 MMTPA	Complied
6	Aromatics Extraction Unit- 0.79 MMTPA	Complied
7	Benzzene Toluene Fractionation Unit- 2.2 MMTPA	Complied
8	Captive Power Plant (CPP)	Please note that normal requirement will be in the range of 40 MW, but Gas Turbine is more prone to Maintainance requirements & hence to ensure continuous supply of power to the plant, installed capacity is 72 MW
3. A Specific Conditions:-		

1	No objection Certificate from the Karnataka State Pollution Control Board shall be obtained before initiating the project	Please note that MZEZ has obtained Consent for Establishment (CFE) from the Karnataka State Pollution Control Board (KSPCB) letter No. CFE-CELL/MSEZ/EIA-574/08/20 dated 30th April, 2008 And OMPL on its part has obtained CFE from the KSPCB, vide letter No. PCB/559/CFE/08/252 dated 12th August, 2008 & recently obtained Extension of validity of CFE vide letter No. PCB/HPI/245/2013-14/1002 dated 5th October, 2013 upto 10.8.2014 from KSPCB, Bangalore
2	The MSEZ project shall be restricted to the Phase-I of the project, proposed over 1,800 acres. The phase-II of the project shall be considered by Ministry of Environment & Forests only after receipt of all requisite documents\ information as laid down in the Environment Impact Assessment Notification, 2006 and Coastal Regulation Zone Notification, 1991 as applicable	NA
3	All development in the Coastal Regulation Zone area shall be in accordance with coastal regulation zone notification, 1991. No destruction of mangroves shall be undertaken except while undertaking the permissible activities in the coastal regulation zone-I areas	NA
4	The project proponent shall not take up any activity in 875 acres of coastal regulation zone land, other than those permissible under the coastal regulation zone notification 1991 such as pipeline corridors, pipelines roads on stilts	NA
5	With regard to the containing the suspected contamination of the groundwater near Athurkodi area of Kuthethoor village, MRPL has given an undertaking vide letter dated 19.3.2008 which is as follows:-	NA
6	The project proponent shall obtain a report from the wildlife department with regard to existence of wildlife in the proposed site as claimed by the public before implementing the project	Please note report from Wildlife Department was submitted to the MoEF by MSEZ
7	The R & R package shall be strictly in accordance with the laid down norms of the state Government	NA. However, OMPL has recruited around 302 displaced people and provided employment, as on 31st March, 2016
8	A marine Environment Impact Assessment and Risk Assessment along with the Disaster Management Plan shall be prepared for the outfall facilities proposed in the Coastal Regulation Zone and the marine areas	NA
9	Project proponent shall put up a dedicated website and a display panel to inform the public regarding the Ambient Air Quality along with SO ₂ , Nox and other parameters as prescribed by central Pollution Control Board (CPCB)	OMPL has a dedicated website 'www.ompl.co.in', wherein Environment Monitoring Parameters are periodically uploaded and made available to the public
10	The gaseous emissions from various process units shall conform to the standards prescribed by the concerned State Pollution Control Board. All the measures detailed in the EMP and response to the Public Hearing shall be taken to control the point / stack and fugitive gaseous emissions from the proposed facilities, processes and storage units etc, for ensuring that the ambient air quality around the Refinery due to the expansion is maintained at the predicted 24 hourly average maximum concentration	Please note as required in CFE, online Monitoring Instruments of relevant parameters such as Nox & SOX, are installed for stacks and the readings are made available at DCS, for continuous monitoring, during plant operation. Corrective action will be taken for any deviation, however, plant will be run as per Standard Operating Process (SOP), prepared considering, Standards prescribed by the Regulatory Body. Further Online detectors are available for HC, benzene, and to take up 'Containment work' and 'Repair work' on detection of leak, on priority basis.
11	The emission levels of the other pollutants shall also remain within the permissible levels	Please note apart from the relevant parameters as from Sl. No. '10', online analysers such as CO & SPM are also installed to all Process Heater stacks, so as to ensure pollutants within the permissible limits
12	The industrial units in the SEZ and the associated facilities shall be strictly in accordance with the norms laid down by the Karnataka State Government and CPCB	Agreed

13	The project proponent shall ensure that the greenery of the area is maintained. Further, 33 % of the project area shall be dedicated for green belt development of which atleast 5 % shall be for mangrove afforestation. The local Forest Department shall be associated for this purpose and requisite budget earmarked	Please note that OMPL has reserved 33 % of Project area for Green Belt Development. Forest Dept. is lined up for this purpose., work order dated 31st March, 2016 for developing 45 acres of land under Green Belt by march, 2020. The species selected for Green Belt are having good amount of 'Crown Width' as recommended in EIA by NEERI, that was subsequently approved by MoEF while giving Environment Clearance. Budget earmarked is about RS 1.5 crores. Development & Maintenance phase of GBD is approximately 4 years. Some of the species recommended in NEERI are, <i>Acacia ferruginea</i> DC (Mimosaceae), <i>Acacia nilotica</i>* (Mimosaceae), <i>Ailanthus excelsa</i>* (Simaroubiaceae), <i>Albizia amara</i> (Mimosaceae) <i>Albizia labbeck</i>* (Mimosaceae), <i>Albizia doratissima</i>(Mimosaceae), <i>Alstonia scholaris</i>* (Apocynaceae) <i>Annogeissus latifolia</i> (Combretaceae), <i>Artocarpus integrifolia</i> (Moraceae), <i>Artocarpus lacucha</i> (Moraceae), <i>Azadirachta indica</i># (Meliaceae), <i>Bauhinia malabarica</i> (Fabaceae), <i>Bauhinia racemosa</i>* (Caesalpinaceae), <i>Butea monosperma</i> (Fabaceae), <i>Caesalpinia pulcherrima</i>* (Caesalpinaceae), <i>Calophyllum tomentosum</i>, <i>Cane sp.</i> (Palmae), <i>Canna orientalis</i> (Cannaceae) <i>Cassia fistula</i># (Caesalpinaceae), <i>Cassia siamea</i>(Caesalpinaceae), <i>Casuarina equisetifolia</i># (Casurinaceae), <i>Chlorophytum tuberosum</i> (Liliaceae) <i>Dalbergia sissoo</i> (Fabaceae), <i>Dalbergia latifolia</i>#
14	The project proponent shall ensure that the water requirement of the Mangalore city does not get affected due to the SEZ operation. Adequate provision shall be made in the reservoirs to provide for the water requirement of the cities	Please note, OMPL, on its part has taken up following measures to conserve water. 1. UF RO plant is specifically incorporated to recycle ~ 70% of treated water. 2. The complex Cooling Tower system is designed to use STP water as make up from MSEZ apart from the river water. 3. Chemical Treatment Program with Modern Technology has been institutionalised to save water in Cooling Tower Plant 4. Condensate Recovery unit is installed to conserve water and resources such as chemicals 5. OMPL has under taken rain water harvesting measures for its buildings 6. Further, treated CRWS will be explored for usage into CT system The current ~ Average water consumption in m3 per hour is 309.3 against 571 of design figure
15	The project proponent shall ensure that during construction and operation of the project the traffic in the city is not affected	Please note OMPL site is at a distance of ~ 15 KM from the Highway. Hence inconvenience to traffic movement in the city doesn't arise

16	All precautions of the highest standards shall be incorporated in the design of the project to ensure that there is no chance of emission/leakage of hazardous chemicals including Benzene. Detailed monitoring programme shall be designed and the information provided to the public through display and dedicated website by means of online monitoring	Please note following measures are taken to have a check on Emission/ leakage as, <i>*All heaters are installed with LOW NOx Burners</i> <i>*Heaters stacks are fitted with following Online analyzers</i> Carbon monoxide. Sulphur Dioxide Nitrogen Oxides Suspended Particulate matters (SPM) <i>*Benzene Tanks – Internal Floating Roof Tank with Nitrogen Blanket</i> <i>*Paraffinic Raffinate (Volatile material) designed with Vapor recovery unit to recover vapor</i> <i>*Dispersion Model Analysis was done by Bell Energy India and following Online detectors are being installed</i> Benzene Detectors 27 H2S Detector 21 Hydrocarbon Detectors 193 Hydrogen Detectors 68 Fire Detectors (In case of Fire) 26 <i>*Sample Points are closed system to stop local venting and draining</i> <i>*Hydrocarbons drains are connected to closed Blow down system to recover hydrocarbon.</i> <i>* OMPL has a dedicated website 'www.ompl.co.in', wherein Environment Monitoring Parameters are periodically uploaded and available to the public</i>
17	Low sulphur internal fuel oil and fuel gas shall be fired in process heaters and boilers	OMPL has gone for Low Sulphur fuels with 'S' specification for both LSHS, HSD & FG fuels. HSD with Euro-III specification i.e 50 ppm is being used in Gas Turbine Generators of Captive Power Plant as against design of 0.25 wt % 'S'. Please note 'SO2' emission from EIA report for the project is estimated as 13.68 TPD. Avg SOx emission per day is <u>2.29 TPD</u>
18	Quarterly monitoring of fugitive emissions shall be carried out by Fugitive Emission Detectors (GMI) leak Surveyor. Guidelines of CPCB will be followed for monitoring fugitive emissions. For control of fugitive emissions, all unsaturated hydrocarbons shall be routed to the flare system. The flare system shall be designed for smokeless burning. Flare gas recovery system shall be installed for reduction of Hydrocarbon loss and emission of VOCs, NOx, N2O, SOx & CO2 to the environment	Please note Quarterly monitoring of fugitive emissions will be done after commissioning & stabilization of the plant. However, Dispersion Model Analysis was done by Bell Energy India and following Online detectors are installed Benzene Detectors 27 Hydrocarbon Detectors 193 <i>*Flare system is designed for smokeless burning by M/s AirOil</i> <i>*Study on Flare gas recovery will be looked into.</i>
19	Regular Ambient Air Quality Monitoring shall be carried out. The Location and results of existing monitoring stations shall be reviewed in consultation with the concerned State Pollution Control Board based on the occurrence of maximum ground level concentration and downwind direction of wind. Additional stations shall be set up, if required. It shall be ensured that at least one monitoring station is set up in up-wind & in Down - wind direction along with those in other directions	AAQM monitoring is carried out as per NAAQM rules, 2009 at 5 locations, at a frequency of weekly twice, at a location, all the year round and Monitoring is done for all parameters as per the rules, as suggested by KSPCB & Monthly Reports are submitted to KSPCB. The values are found to be within the NAAQM Norms.
20	on-line data for air emissions shall be transferred to the CPCB and SPCB regularly. The instruments used for ambient air quality monitoring shall be calibrated regularly. The monitoring protocol shall ensure continuous monitoring of all the parameters	on-line data for air emissions is being uploaded to the CPCB since April, 2016. OMPL has dedicated Instrumentation Team and would ensure calibration of instruments

21	The practise of acoustic plant design shall be adopted to limit noise exposure for personnel to an 8 hour time weighted average of 90 db(A)	<i>Please note, as a first step, identified the sources of noise & then taken up Attenuation measures, at the design stage</i> <i>Sources: Pumps, Compressors & Turbines.</i> <i>Attenuation measures: It is ensured at design stage that Noise level at a distance of 1 mt from the equipment is < 90 db (A) & at plant boundry, it is less than 75 dB in daytime & 70 dB in night time as per the Legal requirement.</i>
22	All the pumps and other equipments, where there is a likihood of HC leakages, shall be provided with appropriate indicators and detectors. Provision for immediate isolation of such equipment, in case of a leakage shall also be made. The company shall adopt leak detection and repair (LDAR) programme for quantification and control of fugitive emissions	<i>Please note OMPL, as a first step in leak prevention, hired Bell Energy India, who carried out Dispersion Model Analysis and recommended following Online detectors which are installed at site such as,</i> <i>Benzene Detectors 27 nos</i> <i>Hydrocarbon Detectors 193 nos</i> <i>* Incase of leak, the first step is to contain the leak & simultaneously leak arresting work is carried out</i> <i>* LDAR program ; detailed estimation of points completed for implimentation of the program & is under implimentation</i>
23	The product loading gantry shall be connected to the product sphere in closed circuit through the vapor arm connected to the tanker. Data on fugitive emissions shall be regularly monitored and records shall be maintained	NA
24	The company shall ensure that no halogenated organic is sent to the flares. If any of the halogenated organic are present, then the respective streams may be incinerated, if there are no technically feasible or economically viable reduction / recovery options. Any stream containing organic carbon, other than halogenated shall be connected to proper flaring system, if not to a recovery device or an incinerator	<i>Halogenated organic is used only for chloride dispersion on platinum catalyst and consumed. Halogenated compound is not sent to Flare Stack Chimney. Used catalyst will be disposed to KSPCB authorised recyclers</i>
25	The new standards/ norms that are being proposed by the CPCB for Petrochemical Plants and Refineries shall be applicable for the proposed expansion unit. The company shall conform to the process vent standards for organic chemicals including non-VOCs and all possible VOCs i.e TOCs standards and process vent standards for top priority chemicals. Regular monitoring will be carried out for VOC and HC and on line monitors for VOC measurements may be installed	<i>The new standards/ norms that are being proposed by the CPCB for Petrochemical Plants and Refineries are complied.</i> <i>1. Online Monitoring system is provided to heater stacks</i> <i>2. Online Detectors of HC, Benzene are installed, to check any fugitive emissions</i> <i>3. The process vents are connected to flares through safety pop -up valves</i> <i>4. HC sampling points closed loop systems</i> <i>5. Storage of HC is in Floating roof tanks (as applicable) with double mechanical seals and Nitrogen blanketing</i>
26	Regular monitoring of relevant parameters for the under ground water in the surrounding areas shall be undertaken and the results shall be submitted to the relevant States Pollution Control Board	<i>Please note Regular monitoring of groundwater is carried out at four locations in & around the plant as advised by KSPCB & the reports are submitted to KSPCB. The frequency of sampling is once in a month, all the year round, at a location & compared with WHO Drinking Water Standards/ IS 10500 Norms. The values are found to be within Drinking water standards/ Norms.</i>
27	Solid Waste generated as pretreater and Reformer catalysts, Sulphur guard absorbent and alumina Balls shall be disposed off as per the authorization from the State Polltution Control Board	<i>Please note that the Industry has in place proper Solid Waste handling system to collect, treat and dispose off all solid waste generated from the process including Hazardous wastes and the basic Engineering by TOYO Engineering Corporation. Please note OMPL has obtained 'Authorization under Handling Hazardous Wastes' and will be disposed accordingly. Temporary Waste Storage facility is constructed of about ~ 2000 m2 area with impervious surface, closed shed and leachate collection (for any washings) & transfer (to ETP) system</i>

28	Oily sludge shall be sent to melting pit treatment for recovery of oil. The recovered oil shall be recycled into the refinery system. The residual sludge will be stored in HDPE lined pit for disposal after treatment. The sludge shall be incinerated in the premises only	<i>No oily sludge is handled in OMPL</i>
29	The company shall strictly follow all the recommendations mentioned in the charter on Corporate Responsibility for Environmental Protection (CREP)	Please refer compliance details for CREP enclosed herewith (ref.: Annexure-)
30	The company shall harvest surface as well as rainwater from the rooftops of the buildings proposed in the expansion project and storm water drains to recharge the ground water and use the same water for the various activities of the project to conserve fresh water	<i>Rain water harvesting system is implemented for rooftop buildings. During initial project stage, all surface rain water was collected into open wells and the same was utilised for construction purpose</i>
31	Occupational Health Surveillance of the workers should be done on a regular basis and records maintained as per the Factories Act	<i>Complied and is ongoing process</i>
32	The company shall implement all the recommendations made in the Environmental Impact Assessment / EMP report and risk assessment report	<i>Complied</i>
33	The company will undertake all relevant measures, as indicated during the Public Hearing for improving the socio-economic conditions of the surrounding area	<i>Complied</i>
34	With regard to R & R colony the project proponent shall obtain all requisite clearances as prescribed by the concerned agencies	<i>NA</i>
B General Conditions :		
1	The project authorities shall strictly adhere to the stipulations made by the concerned State Pollution Control Board (SPCB) and the State Government	<i>KSPCB stipulations will be adhered to</i>
2	No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment and Forests	<i>Agreed</i>
3	At no time, the emissions shall be allowed to go beyond the prescribed standards. In the event of failure of any pollution control system adopted by the units, the respective unit should be immediately put out of operation and should not be restarted until the desired efficiency has been achieved	<i>Agreed</i>
4	Adequate number of influent and effluent quality monitoring stations shall be set up in consultation with the SPCB. Regular monitoring shall be carried out for relevant parameters for both surface and ground water	<i>Complied</i>
5	Industrial Waste water shall be properly collected and treated so as to conform to the standards prescribed under GSR 422 (E) dated 19th May 1993 and 31st December, 1993 or as amended from time to time. The treated wastewater shall be utilized for plantation purpose	<i>Industrial Waste Water is collected in Slop Tank and then initially treated in EPTP plant to bring down Aromatics to < 20 ppm & Benzene to < 10 ppm, through Distillation & Adsorption methodology. It is then treated in ETP comprising of Physical, Chemical, Biological & Tertiary Treatment Section. About 70 % of treated water will be recycled & the remaining after ensuring Conformance to MINAS standards, is disposed to sea through MSEZ CETP collection & Disposal system. From the 70 % recycle stream partly taken up as make up water for Cooling Tower applications & the remaining will be utilised in Green Belt Development.</i>

6	The overall noise levels in and around the plant area shall be limited within the prescribed standards (85 dBA) 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 EPA rules, 1989 viz. 75 dBA (Day time) and 70 dBA (night time)	<u>Sources:</u> Pumps, Compressors & Turbines. <u>Attenuation measures:</u> It is ensured at design stage that Noise level at a distance of 1 mt from the equipment is < 90 db (A) by providing acoustic hoods, silencers, enclosures etc. as appropriate & at plant boundry is less than 75 dB in daytime & 70 dB in night time as per the Legal requirement
7	The project authorities shall strictly comply with the provisions made in manufacture, storage and import of Hazardous chemicals rules 1989 as amended in 2000 for handling of hazardous chemicals etc..Necessary approvals from Chief Controller of Explosives must be obtained before commission of the expansion project. Requisite On-site and Off - site Disaster Management Plans will be prepared and implemented	<i>Please note that necessary license/ clearance from statutory agencies have been taken such as Approval from Petroleum and Explosives Safety Organization, dated 16th June 2011, Clearance from Department of Factories of Karnataka, dated 19th June 2010. Requisite On-site and Off - site Disaster Management Plans will be adhered to as per Factories Act</i>
8	Authorization from the State Pollution Control Board must be obtained for collections/ treatment/ storage/ disposal of Hazardous wastes	<i>Please note OMPL has obtained 'Authorization under Handling Hazardous Wastes' and valid upto 30th June, 2018</i>
9	The project authorities shall provide adequate funds both recurring and non-recurring to implement the conditions stipulated by the Ministry of Environment and Forests as well as the State Government along with the implementation schedule for all the conditions stipulated herein. The funds so provided shall not be diverted for any other purposes	Agreed. Further the Amount spent/budgeted on Environment Management requirement is RS 182 crores
10	The stipulated conditions shall be monitored by the concerned Regional office of this Ministry / Central Pollution Control Board / State Pollution Control Board. A six monthly compliance report and the monitored data shall be submitted to them regularly. It shall also be displayed on the website of the company	<i>Please note biannually compliance report is submitted on regular basis through MSEZ. The Environment monitored data are being uploaded in the OMPL website</i>
11	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 the State Pollution Control Board/ Committee and may also be seen at website of the MoEF at http://www.envfor.nic.in . This should be advertised within seven days from the date of issue of clearance letter at least in two local newspapers that are widely circulated in the region of which one shall be in the vernacular language of the locality concerned and a copy of the same should be forwarded to the concerned Regional office of this Ministry	<i>Please note, the same was ensured by MSEZ</i>
12	The date of Financial closure and final approval of the project by the concerned authorities and the date of commencing the land development work as well as the commissioning of the project shall be informed to the Ministry and its Regional Office	NA
13	Proper House keeping and adequate occupational health programmes shall be taken up. Regular Occupational Health Surveillance Programme for the relevant diseases shall be carried out and the records shall be maintained properly for atleast 30-40 years. Sufficient preventive measures shall be adopted to avoid direct exposure to emission and other hydrocarbons etc..	Agreed
14	A separate environment management cell with full fledged laboratory facilities to carry out various management and monitoring functions shall be set up under the control of a Senior Executive	Complied
15	The Ministry may revoke or suspend the clearance, if implementation of any of the above condition is not satisfactory	info.

16	The Ministry reserves the right to stipulate additional conditions if found necessary. The company shall implement these conditions in a time bound manner	info.
17	The above conditions will be enforced, inter - alia under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air Act, 1981, The Environment Act, 1986, The Public Liability Insurance Act, 1991, Hazardous Waste Rules 1989 and Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989 along with their Amendments and Rules	info.

Compliance to Charter on Corporate Responsibility for Environmental Protection (CREP)

Sl. No.	Conditions	Compliance
1	Adoption of state-of-art technology State of Art technology will be adopted for both process technology as well sound engineering practices required for control of emission, at the stage of design itself in case of new plants	Please note Process technology is licensed from renowned expert in the field: UOP, America for NHT platforming units, High severity Cyclomax CCR unit for catalyst regeneration, Energy efficient column design for Xylene & BTF units, ISOMER & TADP units for getting high yield of paraxylene per unit of Naptha processed & an efficient, selective PAREX process for paraxylene recovery to get high purity product are considered in the design stage. Also Low NOx burner design for heaters, Low sulphur fuel including provision for usage of Natural Gas are considered.
2	Management of storm water For the storm water generated from process area and tank farm area during initial hours of rain. An arrangement will be made for collection and oil separation including further treatment as required. Such arrangement will include provision for buffer tank (holding tank) and monitoring of effluent quality. This will be accomplished by June 2003.	Please note OMPL has commissioned 2 numbers of collection tanks: one at ISBL area with capacity of 12,000 m3 & the other at OSBL area with 6000 m3 capacity for collection of initial hours of rain from process area & tank farm area respectively. This is then treated in ETP with an treatment capacity of 150 m3/ hr. The treatment section includes Physical treatment, chemical, Biological & Tertiary treatment sections
3	Effective detoxification and waste water treatment scheme In order to control high COD and persistent organic pollution including toxic constituents, the industry will select appropriate unit operations for pre-treatment of effluent within inside battery limit (ISBL) before sending to the biological treatment system(BTS) for better functioning of ETPs. Action plan for the same will be submitted within 6 months and implemented within one year (March,2004)	OMPL has installed Effluent Pre-Treatment Plant at a cost of RS 11.39 crores. The units consists of Distillation column & carbon adsorption beds to remove CODs, so that effluent entering BTS will be having Max. upto 20 ppm of aromatics
4	Control of emission from combustion The industry will submit an action plan within six months for improving thermal efficiency and control of Nox	OMPL has installed Low Nox burners for its heaters & flue gas is let out just above H2SO4 dew point after heating the incoming fuel, air or Steam production in HRSG as the case may be, for improving thermal inspection
5	Proper functioning of point source emission control systems The industry will make efforts for proper operation of pollution control system (mostly scrubbers) and attainment of desired efficiency within six months. The will include backup of power supply to the control equipment and arrangement for frequent sampling and analysis of all critical pollution in the tail gases	NA
6	Leak detection and repair (LDAR) programme As a good operating, the industry will adopt periodically leak detection and repair (LDAR) programme to check fugitive emissions within six months. The frequency of the programme will be proportionate to the risk potential of carrying fluid. Based on leak detection as per LDAR programme, action will be taken to eliminate fugitive emissions, this will be a continuous activity.	We are in the process of instituting LDAR program. Please note OMPL as first step in leak prevention, hired Bell Energy India, who carried out Dispersion Model Analysis and recommended following Online detectors which are already installed at site such as, Benzene Detectors 27 nos, Hydrocarbon Detectors 193 nos
7	Handling of halogenated organics The industry will submit an action plan within 6 months to ensure that no halogenated organics is sent to the flares in order to avoid formation of persistent organic pollutants. All HAPs had halongenated organics will be routed to the incineration system having end-on pollution control facility.	Halogenated organic is used only for chloride dispersion on platinum catalyst and consumed. Used catalyst will be disposed to KSPCB authorised recyclers
8	Control of fugitive emissions of carcinogenic compounds Fugitive emission of carcinogenic compounds (e.g Benzene) will be controlled by closed vapor collection and recovery system. Measures will be taken to monitor health of the workers	Please note double mechanical seal is provided for the purpose & periodical health check up is being carried out as per the legal requirement through Occupational Health Centre, stagewise
9	Management of solid waste Proper facilities will be provided for handling and storage of hazardous waste with manifest system in case transported to other places. For incinerable waste, properly designed incinerator will be installed within the premises or as a common facility. The non-incinerable hazardous waste should be disposed of in a secure-land fill.	OMPL has installed Solid Waste Management facility at an estimated cost of RS 3.73 crore for handling and storage of hazardous waste until disposal & manifest system will be followed during disposal of Hazardous Wastes. Temporary Waste Storage facility is constructed of about ~ 2000 m2 area with impervious surface, closed shed and leachate collection (for any washings) & transfer (to ETP) system

10	Proper operation of incinerator Industry will check the design and will adopt sound engineering practices for proper operation of incinerators. Continuous monitoring will be done for operational parameters and specific parameters in tail gas to ensure the efficient functioning. This will be implemented within 3 months.	NA
11	Optimising the inventory of hazardous chemicals Efforts will be made to optimize the inventory, particularly of hazardous chemicals. Such information will be made available to the Regulatory Agencies (SBCBs) Inspector of Factory & District Collector	<i>Agreed. Further Petroleum & Explosives Safety Organization (PESO) approvals are being taken for bulk storage of Hazardous chemicals (Petroleum) wherein requirements of the MSIHC Rules, 1989 is considered</i>
12	Self- regulation by industry through monitoring and environmental auditing Industry will go for self-assessment and regulation by conducting environmental auditing regularly, besides having regular monitoring of pollutants in air emission, liquid effluent and receiving environment.	<i>Agreed</i>
13	Organizational restructuring and accreditation of environmental manager of industry. For self-evaluation, organizational restructuring will be done and the environmental manager of the industry will be accredited to bring professionalism in environmental management.	<i>Agreed</i>



ONGC Mangalore Petrochemicals Limited

(A Subsidiary of Mangalore Refinery and Petrochemicals Ltd.)
Mangalore Special Economic Zone, Permude, Mangaluru-574 509
CIN : U40107KA2006PLC041258 Website : www.ompl.co.in
Phone : +91 824 2881518 Fax : +91 824 2881539

REF: OMPL/PCB/PK/2015-16/

Date: 20/11/2015

To:
The Environmental Officer
Regional Office
KSPCB
Baikampady, Mangalore-11

Dear Sir,

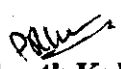
Sub: Submission of Environmental Monitoring Report for the Month of October 2015,
Production Report for October, 2015 & Returns Regarding Water Consumed for the
Month of October 2015

Ref: CFO No. PCB/245/HPI/ONGC/2014-15/593 dated 18th August 2014

With respect to the above subject; we are herewith submitting the following Environmental Monitoring Reports, production reports & Returns Regarding Water Consumed in the Month of October 2015 respectively, enclosed herewith.

1. Ambient Air Quality Monitoring at 5 different locations in and around OMPL, enclosed as Annexure- A
2. Water Analysis Reports at 9 different locations in and around OMPL, as Annexure-B
3. Noise Level Monitoring Report at OMPL, as Annexure-C
4. Treated Effluent Analysis Report - E
5. Returns Regarding Water Consumed, for the Month of October 2015, as Annexure-F
6. Production Report as Annexure-G

Thanking You,


Prashanth Kulkarni
Manager (TS)

CC: Member Secretary, KSPCB, Bangalore
CC: Head (Technical), MSEZ
CC: CEO, OMPL for info


REGIONAL OFFICE
Karnataka State Pollution Control Board
Plot No. 10 - B, Baikampady Industrial Area
MANGALORE - 574 511

Test Report

ANALYSIS REPORT OF AMBIENT AIR QUALITY

1. Name of the location : OMPL East Side
2. Name of the industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Spécial Economic Zone, Permude
Mangalore-574509.
3. Sample Collected By : M/s. Environmental Health & Safety Research and Development
Centre, Bangalore – 560 010.
4. Particulars of Sample Collected : Ambient Air collected through
Fine Particulate Sampler – APM 550
Respirable Dust Sampler – 460NL,
CO & O₃ Analyzers.
5. Date of Collection : For the Month of Oct- 2015 (Monitored for 24 hours)
6. Sample Number : EHSRDC/OMPL/A/15/10/

PARAMETERS	DATE	WK 38		WK 39		WK 40		WK 41	
		05/10/2015	06/10/2015	12/10/2015	13/10/2015	19/10/2015	20/10/2015	26/10/2015	27/10/2015
	CODE	7670	7718	7989	8010	8256	8345	8361	8416
	LIMITS								
PM ₁₀ (µg/m ³)	100	63	61	68	64	59	62	63	70
PM _{2.5} (µg/m ³)	60	17	18	19	22	18	18	17	21
SO ₂ (µg/m ³)	80	3.59	3.66	2.63	3.88	3.18	2.79	3.81	3.21
NO ₂ (µg/m ³)	80	4.05	2.94	3.89	3.93	4.73	3.73	4.09	3.99
CO (mg/m ³)	4	0.83	0.88	0.78	0.88	0.74	0.70	0.74	0.83
O ₃ (µg/m ³)	180	0.87	0.79	0.82	0.95	0.83	0.79	0.81	0.88

Test Report

PARAMETERS	DATE	WK 38		WK 39		WK 40		WK 41	
		05/10/2015	06/10/2015	12/10/2015	13/10/2015	19/10/2015	20/10/2015	26/10/2015	27/10/2015
	CODE LIMITS	7670	7718	7989	8010	8256	8345	8361	8416
NH ₃ (µg/m ³)	400	1.73	2.11	1.73	2.15	2.11	1.67	2.13	1.45
Lead (µg/m ³)	1	0.017	0.013	0.018	0.015	0.021	0.020	0.030	0.095
Arsenic (ng/m ³)	6	1.20	0.98	BDL	0.24	1.28	1.24	1.04	BDL
Nickel (ng/m ³)	20	1.34	1.17	1.38	2.12	1.52	2.69	1.31	1.78
Benzene (µg/m ³)	5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
B(a)P (ng/m ³)	1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

End of Report

Test Report

ANALYSIS REPORT OF AMBIENT AIR QUALITY

1. Name of the location : Shantigudda
2. Name of the industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Spécial Economic Zone, Permude
Mangalore-574509.
3. Sample Collected By : M/s. Environmental Health & Safety Research and
Development Centre, Bangalore – 560 010.
4. Particulars of Sample Collected : Ambient Air collected through
Fine Particulate Sampler – APM 550
Respirable Dust Sampler – 460NL,
CO & O₃ Analyzers.
5. Date of Collection : For the Month of Oct- 2015 (Monitored for 24 hours)
6. Sample Number : EHSRDC/OMPL/A/15/10/

PARAMETERS	DATE	WK 38		WK 39		WK 40		WK 41	
		05/10/2015	06/10/2015	12/10/2015	13/10/2015	19/10/2015	20/10/2015	26/10/2015	27/10/2015
	CODE	7669	7717	7988	8009	8255	8344	8360	8415
	LIMITS	7669	7717	7988	8009	8255	8344	8360	8415
PM ₁₀ (µg/m ³)	100	60	66	57	61	63	59	66	67
PM _{2.5} (µg/m ³)	60	16	20	15	17	19	18	19	18
SO ₂ (µg/m ³)	80	3.75	2.89	2.73	3.11	2.79	3.18	2.19	3.22
NO ₂ (µg/m ³)	80	3.92	3.19	3.49	3.88	3.19	4.73	3.65	3.83
CO (mg/m ³)	4	0.70	0.93	0.68	0.89	0.80	0.74	0.90	0.83
O ₃ (µg/m ³)	180	0.78	0.83	0.75	0.92	0.84	0.83	0.83	0.87

Test Report

PARAMETERS	DATE	WK 38		WK 39		WK 40		WK 41	
		05/10/2015	06/10/2015	12/10/2015	13/10/2015	19/10/2015	20/10/2015	26/10/2015	27/10/2015
	CODE	7669	7717	7988	8009	8255	8344	8360	8415
	LIMITS								
NH ₃ (µg/m ³)	400	1.89	1.83	1.48	1.53	1.73	2.29	1.91	2.31
Lead (µg/m ³)	1	0.009	0.007	0.006	0.003	0.110	0.051	0.005	0.004
Arsenic (ng/m ³)	6	1.69	1.98	BDL	BDL	BDL	BDL	BDL	0.84
Nickel (ng/m ³)	20	1.37	1.66	2.82	BDL	2.08	2.10	BDL	1.63
Benzene (µg/m ³)	5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
B(a)P (ng/m ³)	1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

End of Report

Test Report

ANALYSIS REPORT OF AMBIENT AIR QUALITY

1. Name of the location : Tenka- Ekkar
2. Name of the industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Spécial Economic Zone, Permude
Mangalore-574509.
3. Sample Collected By : M/s. Environmental Health & Safety Research and
Development Centre, Bangalore - 560 010.
4. Particulars of Sample Collected : Ambient Air collected through
Fine Particulate Sampler - APM 550
Respirable Dust Sampler - 460NL,
CO & O₃ Analyzers.
5. Date of Collection : For the Month of Oct- 2015 (Monitored for 24 hours)
6. Sample Number : EHSRDC/OMPL/A/15/10/

PARAMETERS	DATE	WK 38		WK 39		WK 40		WK 41	
		07/10/2015	08/10/2015	14/10/2015	15/10/2015	21/10/2015	22/10/2015	28/10/2015	29/10/2015
	CODE	7832	7895	8056	8105	8346	8348	8505	8507
	LIMITS								
PM ₁₀ (µg/m ³)	100	70	58	60	58	59	54	62	63
PM _{2.5} (µg/m ³)	60	20	15	16	15	17	16	19	24
SO ₂ (µg/m ³)	80	2.89	3.19	3.81	2.19	2.62	3.84	2.61	3.97
NO ₂ (µg/m ³)	80	3.70	4.25	4.09	3.80	3.87	4.11	3.63	4.36
CO (mg/m ³)	4	0.92	0.78	0.83	0.73	0.78	0.84	0.73	0.85
O ₃ (µg/m ³)	180	0.83	0.80	0.87	0.78	0.80	0.90	0.89	0.95

Test Report

PARAMETERS	DATE	WK 38		WK 39		WK 40		WK 41	
		07/10/2015	08/10/2015	14/10/2015	15/10/2015	21/10/2015	22/10/2015	28/10/2015	29/10/2015
	CODE	7832	7895	8056	8105	8346	8348	8505	8507
	LIMITS								
NH ₃ (µg/m ³)	400	1.98	2.39	2.83	1.19	2.13	2.25	1.57	2.13
Lead (µg/m ³)	1	0.009	0.015	0.006	0.017	0.009	0.005	0.007	0.033
Arsenic (ng/m ³)	6	BDL	1.06	0.99	0.29	0.49	0.25	1.17	0.63
Nickel (ng/m ³)	20	1.732	2.098	1.691	1.099	1.314	2.525	1.749	1.946
Benzene (µg/m ³)	5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
B(a)P (ng/m ³)	1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

End of Report

Test Report

ANALYSIS REPORT OF AMBIENT AIR QUALITY

1. Name of the location : Permude
2. Name of the industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Spécial Economic Zone, Permude
Mangalore-574509
3. Sample Collected By : M/s. Environmental Health & Safety Research and
Development Centre, Bangalore - 560 010.
4. Particulars of Sample Collected : Ambient Air collected through
Fine Particulate Sampler - APM 550
Respirable Dust Sampler - 460NL,
CO & O₃ Analyzers.
5. Date of Collection : For the Month of Oct- 2015 (Monitored for 24 hours)
6. Sample Number : EHSRDC/OMPL/A/15/10/

PARAMETERS	DATE	WK 38		WK 39		WK 40		WK 41	
		08/10/2015	09/10/2015	15/10/2015	16/10/2015	22/10/2015	23/10/2015	29/10/2015	30/01/2015
	CODE	7896	7897	8106	8133	8347	8349	8506	8508
	LIMITS								
PM ₁₀ (µg/m ³)	100	59	64	63	66	68	70	61	66
PM _{2.5} (µg/m ³)	60	16	20	21	24	19	24	22	23
SO ₂ (µg/m ³)	80	3.83	3.43	3.27	3.19	2.63	3.59	3.51	3.85
NO ₂ (µg/m ³)	80	4.10	3.88	4.14	4.25	3.83	4.63	4.18	4.19
CO (mg/m ³)	4	0.83	0.79	0.80	0.83	0.83	0.77	0.73	0.70
O ₃ (µg/m ³)	180	0.87	0.83	0.87	0.86	0.87	0.85	0.85	0.82

Test Report

PARAMETERS	DATE	WK 38		WK 39		WK 40		WK 41	
		08/10/2015	09/10/2015	15/10/2015	16/10/2015	22/10/2015	23/10/2015	29/10/2015	30/01/2015
	CODE	7896	7897	8106	8133	8347	8349	8506	8508
	LIMITS								
NH ₃ (µg/m ³)	400	2.65	1.63	2.19	2.69	2.43	2.09	1.93	1.25
Lead (µg/m ³)	1	0.009	0.078	0.018	0.016	0.053	0.018	0.023	0.004
Arsenic (ng/m ³)	6	BDL	0.372	0.050	0.061	BDL	0.492	1.423	1.632
Nickel (ng/m ³)	20	1.04	2.24	1.16	1.99	2.33	1.79	1.66	1.54
Benzene (µg/m ³)	5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
B(a)P (ng/m ³)	1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

End of Report

Praveena

Authorized Signatory

Test Report

ANALYSIS REPORT OF AMBIENT AIR QUALITY

1. Name of the location : OMPL West Side
2. Name of the industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Spécial Economic Zone, Permude
Mangalore-574509
3. Sample Collected By : M/s. Environmental Health & Safety Research and
Development Centre, Bangalore - 560 010.
4. Particulars of Sample Collected : Ambient Air collected through
Fine Particulate Sampler - APM 550
Respirable Dust Sampler - 460NL,
CO & O₃ Analyzers.
5. Date of Collection : For the Month of Oct- 2015 (Monitored for 24 hours)
6. Sample Number : EHSRDC/OMPL/A/15/10/

PARAMETERS	DATE	WK 38		WK 39		WK 40		WK 41	
		05/10/2015	06/10/2015	12/10/2015	13/10/2015	19/10/2015	20/10/2015	26/10/2015	27/10/2015
	CODE	7668	7716	7987	8008	8254	8343	8359	8414
	LIMITS								
PM ₁₀ (µg/m ³)	100	66	70	72	70	64	63	64	64
PM _{2.5} (µg/m ³)	60	18	22	21	22	21	16	18	17
SO ₂ (µg/m ³)	80	3.11	3.71	3.65	3.89	3.13	2.79	3.45	3.09
NO ₂ (µg/m ³)	80	4.09	4.05	4.25	4.30	4.30	3.19	4.83	2.45
CO (mg/m ³)	4	0.78	0.81	0.78	0.77	0.83	0.80	0.76	0.78
O ₃ (µg/m ³)	180	0.66	0.83	0.85	0.83	0.73	0.84	0.84	0.84

Test Report

PARAMETERS	DATE	WK 38		WK 39		WK 40		WK 41	
		05/10/2015	06/10/2015	12/10/2015	13/10/2015	19/10/2015	20/10/2015	26/10/2015	27/10/2015
	CODE	7668	7716	7987	8008	8254	8343	8359	8414
	LIMITS								
NH ₃ (µg/m ³)	400	2.62	2.63	2.29	2.19	2.25	1.78	1.19	1.13
Lead (µg/m ³)	1	0.018	0.015	0.017	0.030	0.024	0.005	0.007	0.015
Arsenic (ng/m ³)	6	0.73	1.22	BDL	0.493	0.89	0.73	0.87	0.78
Nickel (ng/m ³)	20	1.18	1.07	1.11	2.32	1.33	1.04	1.64	1.73
Benzene (µg/m ³)	5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
B(a)P (ng/m ³)	1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

End of Report

Test Report

ANALYSIS REPORT OF FRESH WATER QUALITY

1. Name of the Location : GW1: Narayana Guru Community Hall, Permude
2. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Special Economic Zone, Permude
Mangalore-574509.
3. Sample Collected By : M/s. Environmental Health and Safety Research and
Development Centre, Bangalore - 560 010.
4. Date of Collection : 13.10.2015
5. Particulars of Sample Collected : Bore well water, Grab Sampling
6. Date of Sample Receipt : 14.10.2015
7. Sample Number : EHSRDC/OMPL/W/15/10/7994
8. Protocol : APHA, 22nd Edition/IS Standard

Sl.No	PARAMETERS	UNIT	Test Methods	Std. IS 10500:2012 (Second Revision)		Code
				DL	PL	
						GW1 7994
1.	pH	--	4500H* B	6.5-8.5		7.21
2.	Colour	Hazen	IS 3025(Part-4):1983	5	15	<1
3.	Odour	--	IS 3025(Part-5):1983	Unobjectionable		Unobjectionable
4.	Taste	--	IS 3025(Part-8):1984	Agreeable		Agreeable
5.	Turbidity	NTU	2130 B	1	5	0.88
6.	Total Dissolved Solids	mg/L	2540 C	500	2000	130
7.	Total Hardness	mg/L	2340 C	200	600	88
8.	Calcium as Ca	mg/L	3500-Ca	75	200	17.6
9.	Magnesium as Mg	mg/L	3500 Mg B	30	100	10.69
10.	Sulphate as SO ₄	mg/L	4500-SO ₄ ²⁻	200	400	BDL
11.	Fluoride as F	mg/L	4500F D	1	1.5	0.26
12.	Nitrate as NO ₃	mg/L	4500-NO ₃ E	45		3.69
13.	Chloride as Cl	mg/L	4500-Cl B	250	1000	10.05
14.	Iron as Fe	mg/L	3500-Fe B	0.3		0.17
15.	Alkalinity	mg/L	2320 B	200	600	76
16.	Chromium Hexavalent	mg/L	3500 Cr B	---		BDL
17.	E-Coli	CFU/100ml	IS:15185	Absent		Absent
18.	Total Coliform	CFU/100ml	9222 B	10		<1

Note:- BDL- Below Detectable Limit, DL - Desirable Limit, PL - Permissible Limit.

INFERENCE	As per IS 10500:2012(Second Revision), Report Status: -- The measured values for the above parameters for those standards have been specified were observed to be within the said standard.
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End of Report

Praveena
Authorized Signatory

Test Report

ANALYSIS REPORT OF FRESH WATER QUALITY

1. Name of the Location : GW2: Gagnet Labor Colony
2. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Spécial EconomicZone, Permude
Mangalore-574509.
3. Sample Collected By : M/s. Environmental Health and Safety Research and Development
Centre, Bangalore - 560 010.
4. Date of Collection : 13.10.2015
5. Particulars of Sample Collected : Bore well water, Grab Sampling
6. Date of Sample Receipt : 14.10.2015
7. Sample Number : EHSRDC/OMPL/W/15/10/7995
8. Protocol : APHA, 22nd Edition/IS Standard

Sl.No	PARAMETERS	UNIT	Test Methods	Std. IS 10500:2012 (Second Revision)		Code
				DL	PL	
						GW2
						7995
1.	pH	--	4500H ⁺ B	6.5-8.5		7.06
2.	Colour	Hazen	IS 3025(Part-4):1983	5	15	<1
3.	Odour	--	IS 3025(Part-5):1983	Unobjectionable		Unobjectionable
4.	Taste	--	IS 3025(Part-8):1984	Agreeable		Agreeable
5.	Turbidity	NTU	2130 B	1	5	3.77
6.	Total Dissolved Solids	mg/L	2540 C	500	2000	144
7.	Total Hardness	mg/L	2340 C	200	600	98
8.	Calcium as Ca	mg/L	3500-Ca	75	200	30.4
9.	Magnesium as Mg	mg/L	3500 Mg B	30	100	5.34
10.	Sulphate as SO ₄	mg/L	4500-SO ₄ ²⁻	200	400	13.61
11.	Fluoride as F	mg/L	4500F D	1	1.5	0.41
12.	Nitrate as NO ₃	mg/L	4500-NO ₃ E	45		BDL
13.	Chloride as Cl	mg/L	4500-Cl B	250	1000	12.44
14.	Iron as Fe	mg/L	3500-Fe B	0.3		0.29
15.	Alkalinity	mg/L	2320 B	200	600	91
16.	Chromium Hexavalent	mg/L	3500 Cr B	---		BDL
17.	E-Coli	CFU/100ml	IS:15185	Absent		Absent
18.	Total Coliform	CFU/100ml	9222 B	10		<1

Note:- BDL- Below Detectable Limit, DL - Desirable Limit, PL - Permissible Limit.

INFERENCE	As per IS 10500:2012(Second Revision), Report Status: - - The measured values for the above parameters for those standards have been specified were observed to be within the said standard.
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End of Report

Praveena
Authorized Signatory

Test Report

ANALYSIS REPORT OF FRESH WATER QUALITY

1. Name of the Location : OW1: Tenka-Ekkar
2. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Special Economic Zone, Permude
Mangalore-574509
3. Sample Collected By : M/s. Environmental Health and Safety Research and
Development Centre, Bangalore - 560 010.
4. Date of Collection : 13.10.2015
5. Particulars of Sample Collected : Open well water, Grab Sampling
6. Date of Sample Receipt : 14.10.2015
7. Sample Number : EHSRDC/OMPL/W/15/10/7996
8. Protocol : APHA, 22nd Edition/IS Standard

Sl.No	PARAMETERS	UNIT	Test Methods	Std. IS 10500:2012 (Second Revision)		Code
				DL	PL	
						OW1
						7996
1.	pH	--	4500H ⁺ B	6.5-8.5		6.70
2.	Colour	Hazen	IS 3025(Part-4):1983	5	15	<1
3.	Odour	--	IS 3025(Part-5):1983	Unobjectionable		Unobjectionable
4.	Taste	--	IS 3025(Part-8):1984	Agreeable		Agreeable
5.	Turbidity	NTU	2130 B	1	5	0.17
6.	Total Dissolved Solids	mg/L	2540 C	500	2000	132
7.	Total Hardness	mg/L	2340 C	200	600	101
8.	Calcium as Ca	mg/L	3500-Ca	75	200	33.6
9.	Magnesium as Mg	mg/L	3500 Mg B	30	100	4.13
10.	Sulphate as SO ₄	mg/L	4500-SO ₄ ²⁻	200	400	29.06
11.	Fluoride as F	mg/L	4500F D	1	1.5	0.18
12.	Nitrate as NO ₃	mg/L	4500-NO ₃ E	45		BDL
13.	Chloride as Cl	mg/L	4500-Cl B	250	1000	11.00
14.	Iron as Fe	mg/L	3500-Fe B	0.3		BDL
15.	Alkalinity	mg/L	2320 B	200	600	76
16.	Chromium Hexavalent	mg/L	3500 Cr B	---		BDL
17.	E-Coli	CFU/100ml	IS:15185	Absent		Absent
18.	Total Coliform	CFU/100ml	9222 B	10		<1

Note:- BDL- Below Detectable Limit, DL - Desirable Limit, PL - Permissible Limit.

INFERENCE	As per IS 10500:2012(Second Revision), Report Status: -- The measured values for the above parameters for those standards have been specified were observed to be within the said standard.
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End of Report

Praveena
Authorized Signatory

Test Report

ANALYSIS REPORT OF FRESH WATER QUALITY

1. Name of the Location : OW2: Shanthiguda Village
2. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Special Economic Zone, Permude
Mangalore-574509
3. Sample Collected By : M/s. Environmental Health and Safety Research and
Development Centre, Bangalore - 560 010.
4. Date of Collection : 13.10.2015
5. Particulars of Sample Collected : Open well water, Grab Sampling
6. Date of Sample Receipt : 14.10.2015
7. Sample Number : EHSRDC/OMPL/W/15/10/7997
8. Protocol : APHA, 22nd Edition/IS Standard

Sl.No	PARAMETERS	UNIT	Test Methods	Std. IS 10500:2012 (Second Revision)		Code
				DL	PL	
						OW2 7997
1.	pH	--	4500H ⁺ B	6.5-8.5		7.45
2.	Colour	Hazen	IS 3025(Part-4):1983	5	15	<1
3.	Odour	--	IS 3025(Part-5):1983	Unobjectionable		Unobjectionable
4.	Taste	--	IS 3025(Part-8):1984	Agreeable		Agreeable
5.	Turbidity	NTU	2130 B	1	5	1.78
6.	Total Dissolved Solids	mg/L	2540 C	500	2000	110
7.	Total Hardness	mg/L	2340 C	200	600	89
8.	Calcium as Ca	mg/L	3500-Ca	75	200	25.6
9.	Magnesium as Mg	mg/L	3500 Mg B	30	100	6.07
10.	Sulphate as SO ₄	mg/L	4500-SO ₄ ²⁻	200	400	6.21
11.	Fluoride as F	mg/L	4500F D	1	1.5	0.37
12.	Nitrate as NO ₃	mg/L	4500-NO ₃ E	45		BDL
13.	Chloride as Cl	mg/L	4500-Cl B	250	1000	22.97
14.	Iron as Fe	mg/L	3500-Fe B	0.3		0.122
15.	Alkalinity	mg/L	2320 B	200	600	45
16.	Chromium Hexavalent	mg/L	3500 Cr B	---		BDL
17.	E-Coli	CFU/100ml	IS:15185	Absent		Absent
18.	Total Coliform	CFU/100ml	9222 B	10		<1

Note:- BDL- Below Detectable Limit, DL - Desirable Limit, PL - Permissible Limit.

INFERENCE

As per IS 10500:2012(Second Revision),
Report Status: -- The measured values for the above parameters for those standards
have been specified were observed to be within the said standard.

End of Report

Praveena
Authorized Signatory

Test Report

ANALYSIS REPORT OF FRESH WATER QUALITY

1. Name of the Location : SW1: Near Flare Area, OMPL
2. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore SpécialEconomicZone, Permude
Mangalore-574509.
3. Sample Collected By : M/s. Environmental Health and Safety Research and Development
Centre, Bangalore - 560 010.
4. Date of Collection : 13.10.2015
5. Particulars of Sample Collected : Surface outlet water, Grab Sampling
6. Date of Sample Receipt : 14.10.2015
7. Sample Number : EHSRDC/OMPL/W/15/10/7998
8. Protocol : APHA, 22nd Edition/IS Standard

Sl.No	PARAMETERS	UNIT	Test Methods	Std. IS 10500:2012 (Second Revision)		Code
				DL	PL	SW1 7998
1.	pH	--	4500H* B	6.5-8.5		7.41
2.	Colour	Hazen	IS 3025(Part-4):1983	5	15	<1
3.	Odour	--	IS 3025(Part-5):1983	Unobjectionable		Unobjectionable
4.	Taste	--	IS 3025(Part-8):1984	Agreeable		Agreeable
5.	Turbidity	NTU	2130 B	1	5	3.86
6.	Total Dissolved Solids	mg/L	2540 C	500	2000	130
7.	Total Hardness	mg/L	2340 C	200	600	66
8.	Calcium as Ca	mg/L	3500-Ca	75	200	19.6
9.	Magnesium as Mg	mg/L	3500 Mg B	30	100	4.13
10.	Sulphate as SO ₄	mg/L	4500-SO ₄ ²⁻	200	400	7.96
11.	Fluoride as F	mg/L	4500F D	1	1.5	0.22
12.	Nitrate as NO ₃	mg/L	4500-NO ₃ E	45		1.42
13.	Chloride as Cl	mg/L	4500-Cl B	250	1000	14.83
14.	Iron as Fe	mg/L	3500-Fe B	0.3		0.084
15.	Alkalinity	mg/L	2320 B	200	600	51
16.	Chromium Hexavalent	mg/L	3500 Cr B	---		BDL
17.	E-Coli	CFU/100ml	IS:15185	Absent		Absent
18.	Total Coliform	CFU/100ml	9222 B	10		1

Note:- BDL- Below Detectable Limit, DL - Desirable Limit, PL - Permissible Limit.

INFERENCE

As per IS 10500:2012(Second Revision),
Report Status: -- The measured values for the above parameters for those standards
have been specified were observed to be within the said standard.

***End of Report**

Praveena
Authorized Signatory

Test Report

ANALYSIS REPORT OF FRESH WATER QUALITY

1. Name of the Location : SW2 : Near Central Warehouse, OMPL
2. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Special Economic Zone, Permude
Mangalore-574509
3. Sample Collected By : M/s. Environmental Health and Safety Research and
Development Centre, Bangalore - 560 010.
4. Date of Collection : 13.10.2015
5. Particulars of Sample Collected : Surface inlet water, Grab Sampling
6. Date of Sample Receipt : 14.10.2015
7. Sample Number : EHSRDC/OMPL/W/15/10/7999
8. Protocol : APHA, 22nd Edition/IS Standard

Sl.No	PARAMETERS	UNIT	Test Methods	Std. IS 10500:2012 (Second Revision)		Code
				DL	PL	SW2
						7999
1.	pH	--	4500H+ B	6.5-8.5		8.0
2.	Colour	Hazen	IS 3025(Part-4):1983	5	15	<1
3.	Odour	--	IS 3025(Part-5):1983	Unobjectionable		Unobjectionable
4.	Taste	--	IS 3025(Part-8):1984	Agreeable		Agreeable
5.	Turbidity	NTU	2130 B	1	5	1.03
6.	Total Dissolved Solids	mg/L	2540 C	500	2000	121
7.	Total Hardness	mg/L	2340 C	200	600	94
8.	Calcium as Ca	mg/L	3500-Ca	75	200	29.6
9.	Magnesium as Mg	mg/L	3500 Mg B	30	100	4.86
10.	Sulphate as SO ₄	mg/L	4500-SO ₄ ²⁻	200	400	8.44
11.	Fluoride as F	mg/L	4500F D	1	1.5	0.17
12.	Nitrate as NO ₃	mg/L	4500-NO ₃ E	45		1.195
13.	Chloride as Cl	mg/L	4500-Cl B	250	1000	11.48
14.	Iron as Fe	mg/L	3500-Fe B	0.3		0.037
15.	Alkalinity	mg/L	2320 B	200	600	65
16.	Chromium Hexavalent	mg/L	3500 Cr B	---		BDL
17.	E-Coli	CFU/100ml	IS:15185	Absent		Absent
18.	Total Coliform	CFU/100ml	9222 B	10		<1

Note:- BDL- Below Detectable Limit, DL - Desirable Limit, PL - Permissible Limit.

INFERENCE

As per IS 10500:2012(Second Revision),
Report Status: -- The measured values for the above parameters for those standards
have been specified were observed to be within the said standard.

End of Report

Praveena
Authorized Signatory

Test Report

ANALYSIS REPORT OF FRESH WATER QUALITY

1. Name of the Location : GW3: L&T New Labor Colony
2. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore SpécialEconomicZone, Permude
Mangalore-574509
3. Sample Collected By : M/s. Environmental Health and Safety Research and Development
Centre, Bangalore - 560 010.
4. Date of Collection : 13.10.2015
5. Particulars of Sample Collected : Bore well water ,Grab Sampling
6. Date of Sample Receipt : 14.10.2015
7. Sample Number : EHSRDC/OMPL/W/15/10/8000
8. Protocol : APHA, 22nd Edition/IS Standard

Sl.No	PARAMETERS	UNIT	Test Methods	Std. IS 10500:2012 (Second Revision)		Code
				DL	PL	GW3
						8000
1.	pH	--	4500H ⁺ B	6.5-8.5		8.13
2.	Colour	Hazen	IS 3025(Part-4):1983	5	15	<1
3.	Odour	--	IS 3025(Part-5):1983	Unobjectionable		Unobjectionable
4.	Taste	--	IS 3025(Part-8):1984	Agreeable		Agreeable
5.	Turbidity	NTU	2130 B	1	5	2.05
6.	Total Dissolved Solids	mg/L	2540 C	500	2000	141
7.	Total Hardness	mg/L	2340 C	200	600	70
8.	Calcium as Ca	mg/L	3500-Ca	75	200	20.8
9.	Magnesium as Mg	mg/L	3500 Mg B	30	100	4.37
10.	Sulphate as SO ₄	mg/L	4500-SO ₄ ²⁻	200	400	12.97
11.	Fluoride as F	mg/L	4500F D	1	1.5	0.26
12.	Nitrate as NO ₃	mg/L	4500-NO ₃ E	45		BDL
13.	Chloride as Cl	mg/L	4500-Cl B	250	1000	27.75
14.	Iron as Fe	mg/L	3500-Fe B	0.3		0.053
15.	Alkalinity	mg/L	2320 B	200	600	94
16.	Chromium Hexavalent	mg/L	3500 Cr B	---		BDL
17.	E-Coli	CFU/100ml	IS:15185	Absent		Absent
18.	Total Coliform	CFU/100ml	9222 B	10		<1

Note:- BDL- Below Detectable Limit, DL - Desirable Limit, PL - Permissible Limit.

INFERENCE

As per IS 10500:2012(Second Revision),
Report Status: - - The measured values for the above parameters for those standards
have been specified were observed to be within the said standard.

End of Report

Haveena
Authorized Signatory

Test Report

ANALYSIS REPORT OF FRESH WATER QUALITY

1. Name of the Location : OW3: Permude Village
2. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore SpécialEconomicZone, Permude
Mangalore-574509
3. Sample Collected By : M/s. Environmental Health and Safety Research and
Development Centre, Bangalore - 560 010.
4. Date of Collection : 13.10.2015
5. Particulars of Sample Collected : Open well water, Grab Sampling
6. Date of Sample Receipt : 14.10.2015
7. Sample Number : EHSRDC/OMPL/W/15/10/8001
8. Protocol : APHA, 22nd Edition/IS Standard

Sl.No	PARAMETERS	UNIT	Test Methods	Std. IS 10500:2012 (Second Revision)		Code
				DL	PL	
						OW3
						8001
1.	pH	--	4500H ⁺ B	6.5-8.5		8.05
2.	Colour	Hazen	IS 3025(Part-4):1983	5	15	<1
3.	Odour	--	IS 3025(Part-5):1983	Unobjectionable		Unobjectionable
4.	Taste	--	IS 3025(Part-8):1984	Agreeable		Agreeable
5.	Turbidity	NTU	2130 B	1	5	1.8
6.	Total Dissolved Solids	mg/L	2540 C	500	2000	110.0
7.	Total Hardness	mg/L	2340 C	200	600	84
8.	Calcium as Ca	mg/L	3500-Ca	75	200	28.8
9.	Magnesium as Mg	mg/L	3500 Mg B	30	100	2.91
10.	Sulphate as SO ₄	mg/L	4500-SO ₄ ²⁻	200	400	2.70
11.	Fluoride as F	mg/L	4500F D	1	1.5	0.44
12.	Nitrate as NO ₃	mg/L	4500-NO ₃ E	45		2.24
13.	Chloride as Cl	mg/L	4500-Cl B	250	1000	17.70
14.	Iron as Fe	mg/L	3500-Fe B	0.3		0.046
15.	Alkalinity	mg/L	2320 B	200	600	48
16.	Chromium Hexavalent	mg/L	3500 Cr B	---		BDL
17.	E-Coli	CFU/100ml	IS:15185	Absent		Absent
18.	Total Coliform	CFU/100ml	9222 B	10		<1

Note:- BDL- Below Detectable Limit, DL - Desirable Limit, PL - Permissible Limit.

INFERENCE

As per IS 10500:2012(Second Revision),

Report Status: -- The measured values for the above parameters for those standards have been specified were observed to be within the said standard.

End of Report

Haveena
Authorized Signatory

Test Report

ANALYSIS REPORT OF FRESH WATER QUALITY

1. Name of the Location : GW6: OMPL (Near ETP).
2. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Special Economic Zone, Permude
Mangalore-574509
3. Sample Collected By : M/s. Environmental Health and Safety Research and
Development Centre, Bangalore - 560 010.
4. Date of Collection : 08.10.2015
5. Particulars of Sample Collected : Bore well water, Grab Sampling
6. Date of Sample Receipt : 10.10.2015
7. Sample Number : EHSRDC/OMPL/W/15/10/7838
8. Protocol : APHA, 22nd Edition/IS Standard

Sl.No	PARAMETERS	UNIT	Test Methods	Std. IS 10500:2012 (Second Revision)		Code
				DL	PL	
						GW6 7838
1.	pH	--	4500H ⁺ B	6.5-8.5		7.6
2.	Colour	Hazen	IS 3025(Part-4):1983	5	15	<1
3.	Odour	--	IS 3025(Part-5):1983	Unobjectionable		Unobjectionable
4.	Taste	--	IS 3025(Part-8):1984	Agreeable		Agreeable
5.	Turbidity	NTU	2130 B	1	5	2.6
6.	Total Dissolved Solids	mg/L	2540 C	500	2000	80
7.	Total Hardness	mg/L	2340 C	200	600	59
8.	Calcium as Ca	mg/L	3500-Ca	75	200	19.2
9.	Magnesium as Mg	mg/L	3500 Mg B	30	100	2.67
10.	Sulphate as SO ₄	mg/L	4500-SO ₄ ²⁻	200	400	19.19
11.	Fluoride as F	mg/L	4500F D	1	1.5	BDL
12.	Nitrate as NO ₃	mg/L	4500-NO ₃ E	45		BDL
13.	Chloride as Cl	mg/L	4500-Cl B	250	1000	4.78
14.	Iron as Fe	mg/L	3500-Fe B	0.3		BDL
15.	Alkalinity	mg/L	2320 B	200	600	10
16.	Chromium Hexavalent	mg/L	3500 Cr B	---		BDL
17.	E-Coli	CFU/100ml	IS:15185	Absent		Absent
18.	Total Coliform	CFU/100ml	9222 B	10		<1

Note:- BDL- Below Detectable Limit, DL - Desirable Limit, PL - Permissible Limit.

INFERENCE	As per IS 10500:2012(Second Revision), Report Status: -- The measured values for the above parameters for those standards have been specified were observed to be within the said standard.
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End of Report

Praveena
Authorized Signatory

Test Report

AMBIENT NOISE LEVEL MONITORING REPORT

1. Name of the Project : M/s. ONGC Mangalore Petrochemicals Limited,
Mangalore Spécial Economic Zone,
Permude.Mangalore-574509.
2. Sample Collected by : M/s. Environmental Health and Safety Research &
Development Centre, Bangalore - 560 010.
3. Date of Collection : 13.10.2015
4. Particulars of Sample Collected : Ambient Noise Level collected through
Sound Level Meter EQ-8852/C-322
5. Date of Sample Receipt : 14.10.2015
6. Sample Number : EHSRDC/OMPL/N/15/10/ 7990-7993
7. Method Adopted : Instrument Method

Code No	Sample Location	Parameters		Std.
		Day Time dB(A)	Night Time dB(A)	
7990	OMPL East Side Boundary	67.43	55.60	75.0 dB(A) Day
7991	OMPL West Side Boundary	67.31	57.32	
7992	OMPL South Side Boundary	64.56	54.24	70 dB(A) Night
7993	OMPL North Side Boundary	68.46	56.55	

Note :

- Day Time is reckoned between 6 A.M and 10 P.M
- Night Time is reckoned between 10 P.M and 6 A.M
- L_{eq} : It is energy mean of the noise level over a specified period.
- *dB (A) L_{eq} denotes the time weighted average of the level of sound in decibels on scale A which is relatable to human hearing.
- A "decibel" is a unit in which noise is measured.
- "A", in dB (A) L_{eq} , denotes the frequency weighting in the measurement of noise and corresponds to Frequency response characteristics of the human ear.

End of Report

Praveena

Authorized Signatory

Test Report

ANALYSIS REPORT OF EFFLUENT QUALITY

1. Name of the Location : Guard pond Pump Discharge
2. Name of the Project : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Spécial Economic Zone, Permude
Mangalore-574509.
3. Sample Collected by : M/s. Environmental Health and Safety Research &
Development Centre, Bangalore – 560 010.
4. Date of Collection : 13.10.2015
5. Particulars of Sample Collected : ETP Guard Pond Discharge Treated Effluent, Grab Sampling
6. Date of Sample Receipt : 14.10.2015
7. Sample Number : EHSRDC/OMPL/ WW/15/10/8002
8. Analysis started on : 14.10.2015
9. Analysis Completed on : 20.10.2015
10. Page No. : 01 of 2
11. Report to be Sent : 21.10.2015
12. Protocol : APHA, 22nd Edition/IS Method

Sl.No	Parameters	Test Methods	Unit	Result	Tolerance limit
1.	pH	IS 3025(Part-11) :1983	-	7.86	6.0-8.5
2.	Colour*	IS 3025(Part-4) :1983	Hazen	<1	All efforts should be made to remove colour and unpleasant odour as for as practicable.
3.	Odour*	IS 3025(Part-5) :1983	--	Unobjectionable	
4.	Temperature	APHA 2550 B	°C	25	Shall not exceed 5°C above the receiving water temperature.
5.	Particle Size of suspended solids*	-	-	Passes	(a)Settle able solids Max.850 microns
6.	B.O.D (3 days in 27°C)	5210 B	mg/L	8.0	15
7.	C.O.D	5220 B	mg/L	40	125
8.	Total Suspended Solids	2540 D	mg/L	11.0	20
9.	Phosphate as PO ₄	4500- P D	mg/L	0.9	3
10.	Total Kjeldahl Nitrogen	4500- Norg B	mg/L	5.88	40
11.	Oil & Grease	5520 B	mg/L	BDL	5
12.	Total residual chlorine	APHA 4500- Cl	mg/l	BDL	1
13.	Free ammonia*	IS 3025 (part 34)	mg/L	Not Detected	5

Praveena
Authorized Signatory

Test Report

Sample Number: EHSRDC/OMPL/ WW/15/10/8002

Page No: 02 of 02

14.	Ammonical Nitrogen	4500- NH ₃ ,B,C	mg/L	1.86	15
15.	Hexavalent Chromium	3500- Cr B	mg/L	BDL	0.1
16.	Sulphide	IS 3025 (part 29): 1986	mg/L	0.6	1.0
17.	Fluoride as F	IS 3025(Part 60): 2008	mg/L	0.41	1.5
18.	Nitrate as NO ₃	IS 3025(Part 34) :1988	mg/L	8.52	20
19.	Iron as Fe	IS 3025(Part 53):2003	mg/L	0.05	3
20.	Mercury as Hg*	IS 3025(Part-48):1994	mg/L	BDL	0.01
21.	Lead as Pb*	IS 3025(Part 47):1994	mg/L	0.001	2
22.	Cadmium as Cd*	IS 3025(Part 41):1992	mg/L	BDL	0.1
23.	Selenium as Se*	IS 3025(Part 56):2003	mg/L	BDL	0.05
24.	Arsenic as As*	IS 3025(Part 37):1988	mg/L	0.001	0.2
25.	Zinc as Zn*	IS 3025(Part 49):1994	mg/L	0.0148	5
26.	Copper as Cu*	IS 3025(Part-42):1992	mg/L	0.005	1
27.	Manganese as Mn*	3111 B	mg/L	0.0034	2
28.	Vanadium*	3500 -V	mg/L	BDL	0.1
29.	Nickel as Ni*	IS13428:2005 (Annex L)	mg/L	0.001	1
30.	Total chromium*	IS 13428:2005(Annex J)	mg/L	0.0014	2
31.	Benzene*	APHA 6200 B	mg/L	Absent	0.1
32.	Benzo (a) pyrene*	APHA 6440	µg/l	Absent	0.2
33.	Bioassay*	IS 6582	% survivality	100	90% survival of fish after 96 hrs, in 100% effluent
34.	Phenolic compounds	IS 3025 (part 43):1992	mg/L	BDL	0.35
35.	Cyanide	IS 3025 (Part 27):1986	mg/L	BDL	0.2

*are not accredited by NABL.

INFERENCE

As per Tolerance limit,

Report Status: - The measured values for the above parameters for those standards have been specified were observed to be within the said standard.

End of Report

Haveena
Authorized Signatory

Annexure - 7

Form-1 (Rule 4)
Returns Regarding Water Consumed during the Month of Oct., 2015

Name and address of the Consumer	Purpose for which water consumed	Reading at the beginning of the first day of the calendar month under report	Reading at the end of the last day of the calendar month under report	Quantity of Water Consumed in Kilo Letters	If the meter was out of order, the monthly average consumption of water for the previous 3 months of the working period	Quantity of water qualifying for rebate according to the assessee.	Remarks
M/s ONGC Mangalore Petrochemicals Limited, Mangalore Special Economic Zone, Permude, Mangalore -574 509	Industrial cooling, spraying in mine pits or boiler feed	0	75826	75826			
	Cooling Water						
	Boiler Feed Water	0	70018	70018			
	Fire Water	0	24228	24228			
	Domestic purpose						
	Drinking Water & Sanitation						Flow through Running hours of pumps recorded
	Processing whereby water gets polluted and the pollutants are easily bio-degradable			5496			
	Service Water						Subtracting total flow (by running hours of pumps) from BFW & CT consumption
Total Consumption				9356.6 184924.6			

Signature of the Consumer

Name

Address


Prashanth Kulkarni, Manager(TS)

M/s ONGC Mangalore Petrochemicals Limited, Mangalore Special Economic Zone, Permude, Mangalore -574 509

Annexure - G1

ONGC Mangalore Petrochemicals Limited

Production Details for October – 2015

Net Naptha Processed – 43944 MT

Sl. No.	Name of the Product	Quantity, MT
1	Paraxylene (Product)	17285
2	Benzene (Co product)	5725





ONGC Mangalore Petrochemicals Limited

(A Subsidiary of Mangalore Refinery and Petrochemicals Ltd.)
Mangalore Special Economic Zone, Permude, Mangaluru-574 509
CIN : U40107KA2006PLC041258 Website : www.ompl.co.in
Phone : +91 824 2881518 Fax : +91 824 2881539

REF: OMPL/PCB/PK/2015-16/

Date:14/12/2015

To:
The Environmental Officer
Regional Office
KSPCB
Baikampady, Mangalore-11

Vinay Kumar
Chief Officer
For
12/12/15

Dear Sir,

Sub: Submission of Environmental Monitoring Report for the Month of November 2015,
Production Report for November, 2015 & Returns Regarding Water Consumed for the
Month of November 2015

Ref: CFO No. PCB/245/HPI//ONGC/2014-15/593 dated 18th August 2014

With respect to the above subject; we are herewith submitting the following Environmental Monitoring Reports, production reports & Returns Regarding Water Consumed in the Month of November 2015 respectively, enclosed herewith.

1. Ambient Air Quality Monitoring at 5 different locations in and around OMPL, enclosed as Annexure- A
2. Water Analysis Reports at 9 different locations in and around OMPL, as Annexure-B
3. Noise Level Monitoring Report at OMPL, as Annexure-C
4. Treated Effluent Analysis Report - D
5. Returns Regarding Water Consumed, for the Month of November 2015, as Annexure-E
6. Production Report as Annexure-F

Thanking You,

10/12/15
Prashanth Kulkarni
Manager (TS)

CC: Member Secretary, KSPCB, Bangalore
CC: Head (Technical), MSEZ
CC: CEO, OMPL for info

Test Report

ANALYSIS REPORT OF AMBIENT AIR QUALITY

1. Name of the location : OMPL East Side
2. Name of the industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Spécial Economic Zone, Permude
Mangalore-574509.
3. Sample Collected By : M/s. Environmental Health & Safety Research and Development
Centre, Bangalore - 560 010.
4. Particulars of Sample Collected : Ambient Air collected through
Fine Particulate Sampler - APM 550
Respirable Dust Sampler - 460NL,
CO & O₃ Analyzers.
5. Date of Collection : For the Month of Nov- 2015 (Monitored for 24 hours)
6. Sample Number : EHSRDC/OMPL/A/15/11/

PARAMETERS	DATE	WK 42		WK 43		WK 44		WK 45	
		02/11/2015	03/11/2015	09/11/2015	10/11/2015	16/11/2015	17/11/2015	23/11/2015	24/11/2015
	CODE	8608	8685	8911	8967	9182	9342	9469	9510
	LIMITS								
PM ₁₀ (µg/m ³)	100	59	69	60	65	69	60	67	71
PM _{2.5} (µg/m ³)	60	17	18	16	15	17	14	16	21
SO ₂ (µg/m ³)	80	2.93	3.15	3.87	3.33	2.85	2.65	2.48	2.36
NO ₂ (µg/m ³)	80	3.67	4.29	4.09	4.15	3.41	3.87	3.63	2.47
CO (mg/m ³)	4	0.82	0.71	0.91	0.89	0.79	0.75	0.81	0.70
O ₃ (µg/m ³)	180	0.93	0.85	0.81	0.65	0.84	0.84	0.79	0.82

Test Report

PARAMETERS	DATE	WK 42		WK 43		WK 44		WK 45	
		02/11/2015	03/11/2015	09/11/2015	10/11/2015	16/11/2015	17/11/2015	23/11/2015	24/11/2015
	CODE	8608	8685	8911	8967	9182	9342	9469	9510
	LIMITS								
NH ₃ (µg/m ³)	400	1.69	2.15	2.06	1.24	1.66	1.76	1.58	1.62
Lead (µg/m ³)	1	0.017	0.011	0.019	0.040	0.023	0.003	0.022	0.021
Arsenic (ng/m ³)	6	0.49	0.21	0.42	BDL	0.71	BDL	1.19	BDL
Nickel (ng/m ³)	20	0.235	0.127	0.145	0.689	0.632	0.532	0.127	0.322
Benzene (µg/m ³)	5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
B(a)P (ng/m ³)	1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

End of Report

Test Report

ANALYSIS REPORT OF AMBIENT AIR QUALITY

1. Name of the location : Shantigudda
2. Name of the industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Spécial Economic Zone, Permude
Mangalore-574509.
3. Sample Collected By : M/s. Environmental Health & Safety Research and
Development Centre, Bangalore - 560 010.
4. Particulars of Sample Collected : Ambient Air collected through
Fine Particulate Sampler - APM 550
Respirable Dust Sampler - 460NL,
CO & O₃ Analyzers.
5. Date of Collection : For the Month of Nov- 2015 (Monitored for 24 hours)
6. Sample Number : EHSRDC/OMPL/A/15/11/

PARAMETERS	DATE	WK 42		WK 43		WK 44		WK 45	
		02/11/2015	03/11/2015	09/11/2015	10/11/2015	16/11/2015	17/11/2015	23/11/2015	24/11/2015
	CODE	8607	8684	8910	8966	9181	9341	9468	9509
	LIMITS								
PM ₁₀ (µg/m ³)	100	71	66	62	61	67	61	63	67
PM _{2.5} (µg/m ³)	60	23	17	18	18	16	15	18	20
SO ₂ (µg/m ³)	80	3.26	3.12	3.17	4.51	3.97	2.13	2.69	2.12
NO ₂ (µg/m ³)	80	4.19	4.60	3.95	4.89	3.56	3.72	3.01	3.21
CO (mg/m ³)	4	0.89	0.97	0.74	0.83	0.91	0.79	0.88	0.72
O ₃ (µg/m ³)	180	0.91	0.87	0.85	0.81	0.75	0.82	0.82	0.83

Test Report

PARAMETERS	DATE	WK 42		WK 43		WK 44		WK 45	
		02/11/2015	03/11/2015	09/11/2015	10/11/2015	16/11/2015	17/11/2015	23/11/2015	24/11/2015
	CODE	8607	8684	8910	8966	9181	9341	9468	9509
	LIMITS								
NH ₃ (µg/m ³)	400	1.72	1.65	1.47	1.63	1.98	1.95	1.56	1.63
Lead (µg/m ³)	1	0.024	0.003	0.002	0.003	0.004	0.012	0.015	0.012
Arsenic (ng/m ³)	6	BDL	0.124	BDL	0.249	0.287	0.242	0.913	BDL
Nickel (ng/m ³)	20	0.753	0.432	0.526	0.328	0.567	BDL	0.415	0.532
Benzene (µg/m ³)	5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
B(a)P (ng/m ³)	1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

End of Report

Test Report

ANALYSIS REPORT OF AMBIENT AIR QUALITY

1. Name of the location : Tenka- Ekkar
2. Name of the industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Spécial Economic Zone, Permude
Mangalore-574509.
3. Sample Collected By : M/s. Environmental Health & Safety Research and
Development Centre, Bangalore – 560 010.
4. Particulars of Sample Collected : Ambient Air collected through
Fine Particulate Sampler – APM 550
Respirable Dust Sampler – 460NL,
CO & O₃ Analyzers.
5. Date of Collection : For the Month of Nov- 2015 (Monitored for 24 hours)
6. Sample Number : EHSRDC/OMPL/A/15/11/

PARAMETERS	DATE	WK 42		WK 43		WK 44		WK 45	
		04/11/2015	05/11/2015	11/11/2015	12/11/2015	18/11/2015	19/11/2015	25/11/2015	26/11/2015
	CODE	8741	8786	8968	9132	9386	9392	9549	9630
	LIMITS								
PM ₁₀ (µg/m ³)	100	62	60	66	62	66	59	62	65
PM _{2.5} (µg/m ³)	60	17	18	20	17	16	17	16	17
SO ₂ (µg/m ³)	80	3.28	3.25	3.84	3.41	3.12	3.68	2.10	3.65
NO ₂ (µg/m ³)	80	4.30	4.30	4.94	3.96	3.83	4.11	3.08	3.78
CO (mg/m ³)	4	0.83	0.75	0.69	0.87	0.78	0.79	0.81	0.74
O ₃ (µg/m ³)	180	0.87	0.81	0.77	0.92	0.81	0.88	0.86	0.80

Test Report

PARAMETERS	DATE	WK 42		WK 43		WK 44		WK 45	
		04/11/2015	05/11/2015	11/11/2015	12/11/2015	18/11/2015	19/11/2015	25/11/2015	26/11/2015
	CODE	8741	8786	8968	9132	9386	9392	9549	9630
	LIMITS								
NH ₃ (µg/m ³)	400	2.45	2.26	2.18	1.83	1.22	1.66	1.29	1.18
Lead (µg/m ³)	1	0.014	0.005	0.024	0.024	0.016	0.020	0.035	0.019
Arsenic (ng/m ³)	6	1.24	1.74	0.98	BDL	0.41	BDL	0.76	0.48
Nickel (ng/m ³)	20	1.284	0.865	2.015	1.887	0.589	1.085	1.015	1.032
Benzene (µg/m ³)	5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
B(a)P (ng/m ³)	1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

End of Report

Test Report

ANALYSIS REPORT OF AMBIENT AIR QUALITY

1. Name of the location : Permude
2. Name of the industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Spécial Economic Zone, Permude
Mangalore-574509
3. Sample Collected By : M/s. Environmental Health & Safety Research and
Development Centre, Bangalore - 560 010.
4. Particulars of Sample Collected : Ambient Air collected through
Fine Particulate Sampler - APM 550
Respirable Dust Sampler - 460NL,
CO & O₃ Analyzers.
5. Date of Collection : For the Month of Nov- 2015 (Monitored for 24 hours)
6. Sample Number : EHSRDC/OMPL/A/15/11/

PARAMETERS	DATE	WK 42		WK 43		WK 44		WK 45	
		05/11/2015	06/11/2015	12/11/2015	13/11/2015	18/11/2015	19/11/2015	26/11/2015	27/11/2015
	CODE	8785	8908	9131	9133	9387	9393	9629	9666
	LIMITS								
PM ₁₀ (µg/m ³)	100	58	67	59	65	69	70	70	68
PM _{2.5} (µg/m ³)	60	16	20	15	18	20	21	21	19
SO ₂ (µg/m ³)	80	3.88	3.69	3.45	3.12	3.39	3.92	2.35	3.06
NO ₂ (µg/m ³)	80	4.29	4.65	4.12	4.21	4.20	4.55	3.34	3.27
CO (mg/m ³)	4	0.80	0.78	0.79	0.82	0.78	0.72	0.78	0.72
O ₃ (µg/m ³)	180	0.85	0.85	0.82	0.85	0.84	0.76	0.81	0.79

Test Report

PARAMETERS	DATE	WK 42		WK 43		WK 44		WK 45	
		05/11/2015	06/11/2015	12/11/2015	13/11/2015	18/11/2015	19/11/2015	26/11/2015	27/11/2015
	CODE	8785	8908	9131	9133	9387	9393	9629	9666
	LIMITS								
NH ₃ (µg/m ³)	400	1.20	1.69	2.01	2.32	1.45	1.63	1.69	1.57
Lead (µg/m ³)	1	0.010	0.005	0.027	0.011	0.004	0.005	0.010	0.012
Arsenic (ng/m ³)	6	1.50	1.73	BDL	BDL	0.65	BDL	0.69	1.17
Nickel (ng/m ³)	20	1.09	0.925	1.005	0.265	1.091	2.043	BDL	0.865
Benzene (µg/m ³)	5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
B(a)P (ng/m ³)	1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

End of Report

Test Report

ANALYSIS REPORT OF AMBIENT AIR QUALITY

1. Name of the location : OMPL West Side
2. Name of the industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Spécial Economic Zone, Permude
Mangalore-574509
3. Sample Collected By : M/s. Environmental Health & Safety Research and
Development Centre, Bangalore – 560 010.
4. Particulars of Sample Collected : Ambient Air collected through
Fine Particulate Sampler – APM 550
Respirable Dust Sampler – 460NL,
CO & O₃ Analyzers.
5. Date of Collection : For the Month of Nov- 2015 (Monitored for 24 hours)
6. Sample Number : EHSRDC/OMPL/A/15/11/

PARAMETERS	DATE	WK 42		WK 43		WK 44		WK 45	
		02/11/2015	03/11/2015	09/11/2015	10/11/2015	16/11/2015	17/11/2015	23/11/2015	24/11/2015
	CODE	8606	8683	8909	8965	9180	9340	9467	9508
	LIMITS								
PM ₁₀ (µg/m ³)	100	63	70	64	63	63	64	59	59
PM _{2.5} (µg/m ³)	60	16	20	17	16	21	16	19	17
SO ₂ (µg/m ³)	80	2.87	3.89	3.25	3.89	3.69	2.56	3.13	2.96
NO ₂ (µg/m ³)	80	3.93	4.05	3.78	3.65	4.25	3.64	4.32	3.45
CO (mg/m ³)	4	0.78	0.79	0.77	0.77	0.90	0.80	0.93	0.78
O ₃ (µg/m ³)	180	0.83	0.85	0.81	0.79	0.82	0.88	0.96	0.81

Test Report

PARAMETERS	DATE	WK 42		WK 43		WK 44		WK 45	
		02/11/2015	03/11/2015	09/11/2015	10/11/2015	16/11/2015	17/11/2015	23/11/2015	24/11/2015
	CODE	8606	8683	8909	8965	9180	9340	9467	9508
	LIMITS								
NH ₃ (µg/m ³)	400	2.10	1.83	1.79	1.78	1.66	1.70	1.21	1.21
Lead (µg/m ³)	1	0.014	0.024	0.011	0.0149	0.033	0.030	0.016	0.010
Arsenic (ng/m ³)	6	BDL	1.026	0.197	0.498	BDL	BDL	1.362	0.325
Nickel (ng/m ³)	20	1.352	1.942	2.122	1.494	1.635	1.005	2.256	2.541
Benzene (µg/m ³)	5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
B(a)P (ng/m ³)	1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

End of Report

Test Report

ANALYSIS REPORT OF FRESH WATER QUALITY

1. Name of the Location : GW1: Narayana Guru Community Hall, Permude
2. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Special Economic Zone, Permude
Mangalore-574509.
3. Sample Collected By : M/s. Environmental Health and Safety Research and Development
Centre, Bangalore - 560 010.
4. Date of Collection : 09.11.2015
5. Particulars of Sample Collected : Bore well water, Grab Sampling
6. Date of Sample Receipt : 11.11.2015
7. Sample Number : EHSRDC/OMPL/W/15/11 /8912
8. Protocol : APHA, 22nd Edition/IS Standard

Sl.No	PARAMETERS	UNIT	Test Methods	Std. IS 10500:2012 (Second Revision)		Code
				DL	PL	GW1 8912
1.	pH	--	4500H+ B	6.5-8.5		7.0
2.	Colour	Hazen	IS 3025(Part-4):1983	5	15	<1
3.	Odour	--	IS 3025(Part-5):1983	Unobjectionable		Unobjectionable
4.	Taste	--	IS 3025(Part-8):1984	Agreeable		Agreeable
5.	Turbidity	NTU	2130 B	1	5	0.8
6.	Total Dissolved Solids	mg/L	2540 C	500	2000	138
7.	Total Hardness	mg/L	2340 C	200	600	72
8.	Calcium as Ca	mg/L	3500-Ca	75	200	16
9.	Magnesium as Mg	mg/L	3500 Mg B	30	100	7.77
10.	Sulphate as SO ₄	mg/L	4500-SO ₄ ²⁻	200	400	0.187
11.	Fluoride as F	mg/L	4500F D	1	1.5	BDL
12.	Nitrate as NO ₃	mg/L	4500-NO ₃ E	45		0.15
13.	Chloride as Cl	mg/L	4500-Cl B	250	1000	15.76
14.	Iron as Fe	mg/L	3500-Fe B	0.3		0.28
15.	Alkalinity	mg/L	2320 B	200	600	96
16.	Chromium Hexavalent	mg/L	3500 Cr B	---		BDL
17.	E-Coli	CFU/100ml	IS:15185	Absent		Absent
18.	Total Coliform	CFU/100ml	9222 B	10		<1

Note:- BDL- Below Detectable Limit, DL - Desirable Limit, PL - Permissible Limit.

INFERENCE

As per IS 10500:2012(Second Revision),
Report Status: - The measured values for the above parameters for those standards
have been specified were observed to be within the said standard.

End of Report

Praveena
Authorized Signatory

Test Report

ANALYSIS REPORT OF FRESH WATER QUALITY

1. Name of the Location : GW2: Gagnet Labor Colony
2. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Spécial Economic Zone, Permude
Mangalore-574509.
3. Sample Collected By : M/s. Environmental Health and Safety Research and Development
Centre, Bangalore - 560 010.
4. Date of Collection : 09.11.2015
5. Particulars of Sample Collected : Bore well water, Grab Sampling
6. Date of Sample Receipt : 11.11.2015
7. Sample Number : EHSRDC/OMPL/W/15/11 /8913
8. Protocol : APHA, 22nd Edition/IS Standard

Sl.No	PARAMETERS	UNIT	Test Methods	Std. IS 10500:2012 (Second Revision)		Code
				DL	PL	
						GW2 8913
1.	pH	--	4500H ⁺ B	6.5-8.5		8.2
2.	Colour	Hazen	IS 3025(Part-4):1983	5	15	<1
3.	Odour	--	IS 3025(Part-5):1983	Unobjectionable		Unobjectionable
4.	Taste	--	IS 3025(Part-8):1984	Agreeable		Agreeable
5.	Turbidity	NTU	2130 B	1	5	0.9
6.	Total Dissolved Solids	mg/L	2540 C	500	2000	183
7.	Total Hardness	mg/L	2340 C	200	600	76
8.	Calcium as Ca	mg/L	3500-Ca	75	200	17.6
9.	Magnesium as Mg	mg/L	3500 Mg B	30	100	7.77
10.	Sulphate as SO ₄	mg/L	4500-SO ₄ ²⁻	200	400	29.77
11.	Fluoride as F	mg/L	4500F D	1	1.5	BDL
12.	Nitrate as NO ₃	mg/L	4500-NO ₃ E	45		0.39
13.	Chloride as Cl	mg/L	4500-Cl B	250	1000	21.68
14.	Iron as Fe	mg/L	3500-Fe B	0.3		0.22
15.	Alkalinity	mg/L	2320 B	200	600	104
16.	Chromium Hexavalent	mg/L	3500 Cr B	---		BDL
17.	E-Coli	CFU/100ml	IS:15185	Absent		Absent
18.	Total Coliform	CFU/100ml	9222 B	10		<1

Note:- BDL- Below Detectable Limit, DL - Desirable Limit, PL - Permissible Limit.

INFERENCE	As per IS 10500:2012(Second Revision), Report Status: - - The measured values for the above parameters for those standards have been specified were observed to be within the said standard.
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End of Report

Praveena
Authorized Signatory

Test Report

ANALYSIS REPORT OF FRESH WATER QUALITY

1. Name of the Location : OW1: Tenka-Ekkar
2. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Special Economic Zone, Permude
Mangalore-574509
3. Sample Collected By : M/s. Environmental Health and Safety Research and
Development Centre, Bangalore - 560 010.
4. Date of Collection : 09.11.2015
5. Particulars of Sample Collected : Open well water, Grab Sampling
6. Date of Sample Receipt : 11.11.2015
7. Sample Number : EHSRDC/OMPL/W/15/11 /8914
8. Protocol : APHA, 22nd Edition/IS Standard

Sl.No	PARAMETERS	UNIT	Test Methods	Std. IS 10500:2012 (Second Revision)		Code
				DL	PL	OW1 8914
1.	pH	--	4500H ⁺ B	6.5-8.5		7.6
2.	Colour	Hazen	IS 3025(Part-4):1983	5	15	<1
3.	Odour	--	IS 3025(Part-5):1983	Unobjectionable		Unobjectionable
4.	Taste	--	IS 3025(Part-8):1984	Agreeable		Agreeable
5.	Turbidity	NTU	2130 B	1	5	0.5
6.	Total Dissolved Solids	mg/L	2540 C	500	2000	118
7.	Total Hardness	mg/L	2340 C	200	600	60
8.	Calcium as Ca	mg/L	3500-Ca	75	200	14.4
9.	Magnesium as Mg	mg/L	3500 Mg B	30	100	5.83
10.	Sulphate as SO ₄	mg/L	4500-SO ₄ ²⁻	200	400	28.37
11.	Fluoride as F	mg/L	4500F D	1	1.5	0.29
12.	Nitrate as NO ₃	mg/L	4500-NO ₃ E	45		0.45
13.	Chloride as Cl	mg/L	4500-Cl B	250	1000	15.76
14.	Iron as Fe	mg/L	3500-Fe B	0.3		BDL
15.	Alkalinity	mg/L	2320 B	200	600	16
16.	Chromium Hexavalent	mg/L	3500 Cr B	---		BDL
17.	E-Coli	CFU/100ml	IS:15185	Absent		Absent
18.	Total Coliform	CFU/100ml	9222 B	10		<1

Note:- BDL- Below Detectable Limit, DL - Desirable Limit, PL - Permissible Limit.

INFERENCE

As per IS 10500:2012(Second Revision),
Report Status: - - The measured values for the above parameters for those standards
have been specified were observed to be within the said standard.

End of Report

Praveena
Authorized Signatory

Test Report

ANALYSIS REPORT OF FRESH WATER QUALITY

1. Name of the Location : SW1: Near Flare Area, OMPL
2. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Spécial Economic Zone, Permude
Mangalore-574509.
3. Sample Collected By : M/s. Environmental Health and Safety Research and Development
Centre, Bangalore - 560 010.
4. Date of Collection : 09.11.2015
5. Particulars of Sample Collected : Surface outlet water, Grab Sampling
6. Date of Sample Receipt : 11.11.2015
7. Sample Number : EHSRDC/OMPL/W/15/11/8915
8. Protocol : APHA, 22nd Edition/IS Standard

Sl.No	PARAMETERS	UNIT	Test Methods	Std. IS 10500:2012 (Second Revision)		Code
				DL	PL	SW1 8915
1.	pH	--	4500H ⁺ B	6.5-8.5		7.5
2.	Colour	Hazen	IS 3025(Part-4):1983	5	15	<1
3.	Odour	--	IS 3025(Part-5):1983	Unobjectionable		Unobjectionable
4.	Taste	--	IS 3025(Part-8):1984	Agreeable		Agreeable
5.	Turbidity	NTU	2130 B	1	5	0.6
6.	Total Dissolved Solids	mg/L	2540 C	500	2000	139
7.	Total Hardness	mg/L	2340 C	200	600	56
8.	Calcium as Ca	mg/L	3500-Ca	75	200	17.6
9.	Magnesium as Mg	mg/L	3500 Mg B	30	100	2.91
10.	Sulphate as SO ₄	mg/L	4500-SO ₄ ²⁻	200	400	13.48
11.	Fluoride as F	mg/L	4500F D	1	1.5	0.46
12.	Nitrate as NO ₃	mg/L	4500-NO ₃ E	45		1.24
13.	Chloride as Cl	mg/L	4500-Cl B	250	1000	27.59
14.	Iron as Fe	mg/L	3500-Fe B	0.3		0.26
15.	Alkalinity	mg/L	2320 B	200	600	44
16.	Chromium Hexavalent	mg/L	3500 Cr B	---		BDL
17.	E-Coli	CFU/100ml	IS:15185	Absent		Absent
18.	Total Coliform	CFU/100ml	9222 B	10		2

Note:- BDL- Below Detectable Limit, DL - Desirable Limit, PL - Permissible Limit.

INFERENCE

As per IS 10500:2012(Second Revision),
Report Status: - - The measured values for the above parameters for those standards
have been specified were observed to be within the said standard.

***End of Report**

Praveena
Authorized Signatory

Test Report

ANALYSIS REPORT OF FRESH WATER QUALITY

1. Name of the Location : SW2 : Near Central Warehouse, OMPL
2. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Special Economic Zone, Permude
Mangalore-574509
3. Sample Collected By : M/s. Environmental Health and Safety Research and
Development Centre, Bangalore - 560 010.
4. Date of Collection : 09.11.2015
5. Particulars of Sample Collected : Surface inlet water, Grab Sampling
6. Date of Sample Receipt : 11.11.2015
7. Sample Number : EHSRDC/OMPL/W/15/11 /8916
8. Protocol : APHA, 22nd Edition/IS Standard

Sl.No	PARAMETERS	UNIT	Test Methods	Std. IS 10500:2012 (Second Revision)		Code
				DL	PL	SW2
						8916
1.	pH	--	4500H* B	6.5-8.5		7.4
2.	Colour	Hazen	IS 3025(Part-4):1983	5	15	<1
3.	Odour	--	IS 3025(Part-5):1983	Unobjectionable		Unobjectionable
4.	Taste	--	IS 3025(Part-8):1984	Agreeable		Agreeable
5.	Turbidity	NTU	2130 B	1	5	1.0
6.	Total Dissolved Solids	mg/L	2540 C	500	2000	141
7.	Total Hardness	mg/L	2340 C	200	600	48
8.	Calcium as Ca	mg/L	3500-Ca	75	200	12.8
9.	Magnesium as Mg	mg/L	3500 Mg B	30	100	3.88
10.	Sulphate as SO ₄	mg/L	4500-SO ₄ ²⁻	200	400	8.98
11.	Fluoride as F	mg/L	4500F D	1	1.5	BDL
12.	Nitrate as NO ₃	mg/L	4500-NO ₃ E	45		1.09
13.	Chloride as Cl	mg/L	4500-Cl B	250	1000	25.62
14.	Iron as Fe	mg/L	3500-Fe B	0.3		0.21
15.	Alkalinity	mg/L	2320 B	200	600	12
16.	Chromium Hexavalent	mg/L	3500 Cr B	---		BDL
17.	E-Coli	CFU/100ml	IS:15185	Absent		Absent
18.	Total Coliform	CFU/100ml	9222 B	10		1

Note:- BDL- Below Detectable Limit, DL - Desirable Limit, PL - Permissible Limit.

INFERENCE

As per IS 10500:2012(Second Revision),
Report Status: -- The measured values for the above parameters for those standards
have been specified were observed to be within the said standard.

End of Report

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Authorized Signatory

Test Report

ANALYSIS REPORT OF FRESH WATER QUALITY

1. Name of the Location : GW3; L&T New Labor Colony
2. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Spécial Economic Zone, Permude
Mangalore-574509
3. Sample Collected By : M/s. Environmental Health and Safety Research and Development
Centre, Bangalore - 560 010.
4. Date of Collection : 09.11.2015
5. Particulars of Sample Collected : Bore well water ,Grab Sampling
6. Date of Sample Receipt : 11.11.2015
7. Sample Number : EHSRDC/OMPL/W/15/11 /8917
8. Protocol : APHA, 22nd Edition/IS Standard

Sl.No	PARAMETERS	UNIT	Test Methods	Std. IS 10500:2012 (Second Revision)		Code
				DL	PL	GW3
1.	pH	--	4500H ⁺ B	6.5-8.5		7.15
2.	Colour	Hazen	IS 3025(Part-4):1983	5	15	<1
3.	Odour	--	IS 3025(Part-5):1983	Unobjectionable		Unobjectionable
4.	Taste	--	IS 3025(Part-8):1984	Agreeable		Agreeable
5.	Turbidity	NTU	2130 B	1	5	1.03
6.	Total Dissolved Solids	mg/L	2540 C	500	2000	162
7.	Total Hardness	mg/L	2340 C	200	600	84
8.	Calcium as Ca	mg/L	3500-Ca	75	200	22.4
9.	Magnesium as Mg	mg/L	3500 Mg B	30	100	6.80
10.	Sulphate as SO ₄	mg/L	4500-SO ₄ ²⁻	200	400	13.95
11.	Fluoride as F	mg/L	4500F D	1	1.5	0.32
12.	Nitrate as NO ₃	mg/L	4500-NO ₃ E	45		BDL
13.	Chloride as Cl	mg/L	4500-Cl B	250	1000	15.76
14.	Iron as Fe	mg/L	3500-Fe B	0.3		0.30
15.	Alkalinity	mg/L	2320 B	200	600	64
16.	Chromium Hexavalent	mg/L	3500 Cr B	---		BDL
17.	E-Coli	CFU/100ml	IS:15185	Absent		Absent
18.	Total Coliform	CFU/100ml	9222 B	10		<1

Note:- BDL- Below Detectable Limit, DL - Desirable Limit, PL - Permissible Limit.

INFERENCE

As per IS 10500:2012(Second Revision),
Report Status: - - The measured values for the above parameters for those standards
have been specified were observed to be within the said standard.

End of Report

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Authorized Signatory

Test Report

ANALYSIS REPORT OF FRESH WATER QUALITY

1. Name of the Location : GW4: OMPL (Near ETP)
2. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Special Economic Zone, Permude
Mangalore-574509
3. Sample Collected By : M/s. Environmental Health and Safety Research and
Development Centre, Bangalore - 560 010.
4. Date of Collection : 09.11.2015
5. Particulars of Sample Collected : Bore well water, Grab Sampling
6. Date of Sample Receipt : 11.11.2015
7. Sample Number : EHSRDC/OMPL/W/15/11/8918
8. Protocol : APHA, 22nd Edition/IS Standard

Sl.No	PARAMETERS	UNIT	Test Methods	Std. IS 10500:2012 (Second Revision)		Code
				DL	PL	
						GW4 8918
1.	pH	--	4500H ⁺ B	6.5-8.5		6.55
2.	Colour	Hazen	IS 3025(Part-4):1983	5	15	<1
3.	Odour	--	IS 3025(Part-5):1983	Unobjectionable		Unobjectionable
4.	Taste	--	IS 3025(Part-8):1984	Agreeable		Agreeable
5.	Turbidity	NTU	2130 B	1	5	1.2
6.	Total Dissolved Solids	mg/L	2540 C	500	2000	198
7.	Total Hardness	mg/L	2340 C	200	600	68
8.	Calcium as Ca	mg/L	3500-Ca	75	200	20.8
9.	Magnesium as Mg	mg/L	3500 Mg B	30	100	3.88
10.	Sulphate as SO ₄	mg/L	4500-SO ₄ ²⁻	200	400	17.22
11.	Fluoride as F	mg/L	4500F D	1	1.5	0.193
12.	Nitrate as NO ₃	mg/L	4500-NO ₃ E	45		0.57
13.	Chloride as Cl	mg/L	4500-Cl B	250	1000	55.18
14.	Iron as Fe	mg/L	3500-Fe B	0.3		BDL
15.	Alkalinity	mg/L	2320 B	200	600	64
16.	Chromium Hexavalent	mg/L	3500 Cr B	---		BDL
17.	E-Coli	CFU/100ml	IS:15185	Absent		Absent
18.	Total Coliform	CFU/100ml	9222 B	10		<1

Note:- BDL- Below Detectable Limit, DL - Desirable Limit, PL - Permissible Limit.

INFERENCE

As per IS 10500:2012(Second Revision),
Report Status: - - The measured values for the above parameters for those standards
have been specified were observed to be within the said standard.

End of Report

Praveena
Authorized Signatory

Test Report

ANALYSIS REPORT OF FRESH WATER QUALITY

1. Name of the Location : OW2: Permude Village
2. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Spécial Economic Zone, Permude
Mangalore-574509
3. Sample Collected By : M/s. Environmental Health and Safety Research and
Development Centre, Bangalore - 560 010.
4. Date of Collection : 09.11.2015
5. Particulars of Sample Collected : Open well water, Grab Sampling
6. Date of Sample Receipt : 11.11.2015
7. Sample Number : EHSRDC/OMPL/W/15/11 /8919
8. Protocol : APHA, 22nd Edition/IS Standard

Sl.No	PARAMETERS	UNIT	Test Methods	Std. IS 10500:2012 (Second Revision)		Code
				DL	PL	OW2 8919
1.	pH	--	4500H+ B	6.5-8.5		6.57
2.	Colour	Hazen	IS 3025(Part-4):1983	5	15	<1
3.	Odour	--	IS 3025(Part-5):1983	Unobjectionable		Unobjectionable
4.	Taste	--	IS 3025(Part-8):1984	Agreeable		Agreeable
5.	Turbidity	NTU	2130 B	1	5	1.0
6.	Total Dissolved Solids	mg/L	2540 C	500	2000	84
7.	Total Hardness	mg/L	2340 C	200	600	32
8.	Calcium as Ca	mg/L	3500-Ca	75	200	4.8
9.	Magnesium as Mg	mg/L	3500 Mg B	30	100	4.86
10.	Sulphate as SO ₄	mg/L	4500-SO ₄ ²⁻	200	400	BDL
11.	Fluoride as F	mg/L	4500F D	1	1.5	BDL
12.	Nitrate as NO ₃	mg/L	4500-NO ₃ E	45		0.60
13.	Chloride as Cl	mg/L	4500-Cl B	250	1000	19.71
14.	Iron as Fe	mg/L	3500-Fe B	0.3		BDL
15.	Alkalinity	mg/L	2320 B	200	600	32
16.	Chromium Hexavalent	mg/L	3500 Cr B	---		BDL
17.	E-Coli	CFU/100ml	IS:15185	Absent		Absent
18.	Total Coliform	CFU/100ml	9222 B	10		<1

Note:- BDL- Below Detectable Limit, DL - Desirable Limit, PL - Permissible Limit.

INFERENCE

As per IS 10500:2012(Second Revision),

Report Status: - - The measured values for the above parameters for those standards
have been specified were observed to be within the said standard.

End of Report

Praveena
Authorized Signatory

Test Report

ANALYSIS REPORT OF FRESH WATER QUALITY

1. Name of the Location : OW3: Shanthiguda Village
2. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Special Economic Zone, Perumde
Mangalore-574509
3. Sample Collected By : M/s. Environmental Health and Safety Research and
Development Centre, Bangalore - 560 010.
4. Date of Collection : 22.11.2015
5. Particulars of Sample Collected : Open well water, Grab Sampling
6. Date of Sample Receipt : 23.11.2015
7. Sample Number : EHSRDC/OMPL/W/15/11/9394
8. Protocol : APHA, 22nd Edition/IS Standard

Sl.No	PARAMETERS	UNIT	Test Methods	Std. IS 10500:2012 (Second Revision)		Code
				DL	PL	
						OW3
						9394
1.	pH	--	4500H ⁺ B	6.5-8.5		8.45
2.	Colour	Hazen	IS 3025(Part-4):1983	5	15	<1
3.	Odour	--	IS 3025(Part-5):1983	Unobjectionable		Unobjectionable
4.	Taste	--	IS 3025(Part-8):1984	Agreeable		Agreeable
5.	Turbidity	NTU	2130 B	1	5	2.36
6.	Total Dissolved Solids	mg/L	2540 C	500	2000	54
7.	Total Hardness	mg/L	2340 C	200	600	48
8.	Calcium as Ca	mg/L	3500-Ca	75	200	6.4
9.	Magnesium as Mg	mg/L	3500 Mg B	30	100	7.77
10.	Sulphate as SO ₄	mg/L	4500-SO ₄ ²⁻	200	400	5.05
11.	Fluoride as F	mg/L	4500F D	1	1.5	0.53
12.	Nitrate as NO ₃	mg/L	4500-NO ₃ E	45		0.60
13.	Chloride as Cl	mg/L	4500-Cl B	250	1000	10.84
14.	Iron as Fe	mg/L	3500-Fe B	0.3		0.21
15.	Alkalinity	mg/L	2320 B	200	600	26
16.	Chromium Hexavalent	mg/L	3500 Cr B	---		BDL
17.	E-Coli	CFU/100ml	IS:15185	Absent		Absent
18.	Total Coliform	CFU/100ml	9222 B	10		<1

Note:- BDL- Below Detectable Limit, DL - Desirable Limit, PL - Permissible Limit.

INFERENCE	As per IS 10500:2012(Second Revision), Report Status: -- The measured values for the above parameters for those standards have been specified were observed to be within the said standard.
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End of Report

Praveena
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Test Report

AMBIENT NOISE LEVEL MONITORING REPORT

1. Name of the Project : M/s. ONGC Mangalore Petrochemicals Limited,
Mangalore Spécial Economic Zone,
Permude.Mangalore-574509.
2. Sample Collected by : M/s. Environmental Health and Safety Research &
Development Centre, Bangalore - 560 010.
3. Date of Collection : 21.11.2015
4. Particulars of Sample : Ambient Noise Level collected through
Collected Sound Level Meter EQ-8852/C-322
5. Date of Sample Receipt : 23.11.2015
6. Sample Number : EHSRDC/OMPL/N/15/11/ 9388-9391
7. Method Adopted : Instrument Method

Code No	Sample Location	Parameters		Std.
		Day Time dB(A)	Night Time dB(A)	
9388	OMPL East Side Boundary	64.44	53.29	75.0 dB(A) Day
9389	OMPL West Side Boundary	64.38	56.33	
9390	OMPL South Side Boundary	64.70	53.94	70 dB(A) Night
9391	OMPL North Side Boundary	64.98	55.43	

Note :

- Day Time is reckoned between 6 A.M and 10 P.M
- Night Time is reckoned between 10 P.M and 6 A.M
- L_{eq} : It is energy mean of the noise level over a specified period.
- *dB (A) L_{eq} denotes the time weighted average of the level of sound in decibels on scale A which is relatable to human hearing.
- A "decibel" is a unit in which noise is measured.
- "A", in dB (A) L_{eq} , denotes the frequency weighting in the measurement of noise and corresponds to Frequency response characteristics of the human ear.

End of Report

P.aveena
Authorized Signatory

Test Report

ANALYSIS REPORT OF EFFLUENT QUALITY

1. Name of the Location : Guard pond Pump Discharge
2. Name of the Project : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Spécial Economic Zone, Permude
Mangalore-574509.
3. Sample Collected by : M/s. Environmental Health and Safety Research &
Development Centre, Bangalore – 560 010.
4. Date of Collection : 09.11.2015
5. Particulars of Sample Collected : ETP Guard Pond Discharge Treated Effluent, Grab Sampling
6. Date of Sample Receipt : 11.11.2015
7. Sample Number : EHSRDC/OMPL/ WW/15/11/8920
8. Analysis started on : 11.11.2015
9. Analysis Completed on : 22.11.2015
10. Page No. : 01 of 2
11. Report to be Sent : 23.11.2015
12. Protocol : APHA, 22nd Edition/IS Method

Sl.No	Parameters	Test Methods	Unit	Result	Tolerance limit
1.	pH	IS 3025(Part-11) :1983	-	8.19	6.0-8.5
2.	Colour*	IS 3025(Part-4) :1983	Hazen	<1	All efforts should be made to remove colour and unpleasant odour as for as practicable.
3.	Odour*	IS 3025(Part-5) :1983	--	Unobjectionable	
4.	Temperature	APHA 2550 B	°C	25	Shall not exceed 5°C above the receiving water temperature.
5.	Particle Size of suspended solids*	-	-	Passes	(a)Settle able solids Max.850 microns
6.	B.O.D (3 days in 27°C)	5210 B	mg/L	Not detected	15
7.	C.O.D	5220 B	mg/L	12	125
8.	Total Suspended Solids	2540 D	mg/L	14	20
9.	Phosphate as PO ₄	4500- P D	mg/L	0.01	3
10.	Total Kjeldahl Nitrogen	4500- Norg B	mg/L	7.0	40
11.	Oil & Grease	5520 B	mg/L	BDL	5
12.	Total residual chlorine	APHA 4500- Cl	mg/l	BDL	1
13.	Free ammonia*	IS 3025 (part 34)	mg/L	Not Detected	5

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Test Report

Sample Number: EHSRDC/OMPL/ WW/15/11/8920

Page No: 02 of 02

14.	Ammonical Nitrogen	4500- NH ₃ ,B,C	mg/L	2.14	15
15.	Hexavalent Chromium	3500- Cr B	mg/L	BDL	0.1
16.	Sulphide	IS 3025 (part 29): 1986	mg/L	0.8	1.0
17.	Fluoride as F	IS 3025(Part 60): 2008	mg/L	BDL	1.5
18.	Nitrate as NO ₃	IS 3025(Part 34) :1988	mg/L	0.73	20
19.	Iron as Fe	IS 3025(Part 53):2003	mg/L	0.79	3
20.	Mercury as Hg*	IS 3025(Part-48):1994	mg/L	BDL	0.01
21.	Lead as Pb*	IS 3025(Part 47):1994	mg/L	BDL	2
22.	Cadmium as Cd*	IS 3025(Part 41):1992	mg/L	BDL	0.1
23.	Selenium as Se*	IS 3025(Part 56):2003	mg/L	BDL	0.05
24.	Arsenic as As*	IS 3025(Part 37):1988	mg/L	BDL	0.2
25.	Zinc as Zn*	IS 3025(Part 49):1994	mg/L	0.001	5
26.	Copper as Cu*	IS 3025(Part-42):1992	mg/L	BDL	1
27.	Manganese as Mn*	3111 B	mg/L	BDL	2
28.	Vanadium*	3500 -V	mg/L	BDL	0.1
29.	Nickel as Ni*	IS13428:2005 (Annex L)	mg/L	BDL	1
30.	Total chromium*	IS 13428:2005(Annex J)	mg/L	BDL	2
31.	Benzene*	APHA 6200 B	mg/L	0.01	0.1
32.	Benzo (a) pyrene*	APHA 6440	µg/l	BDL	0.2
33.	Bioassay*	IS 6582	% survivality	100	90% survival of fish after 96 hrs, in 100% effluent
34.	Phenolic compounds	IS 3025 (part 43):1992	mg/L	BDL	0.35
35.	Cyanide	IS 3025 (Part 27):1986	mg/L	BDL	0.2

*are not accredited by NABL.

INFERENCE

As per Tolerance limit,

Report Status: - The measured values for the above parameters for those standards have been specified were observed to be within the said standard.

End of Report

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Annexure - 15

Form-1 (Rule 4)
Returns Regarding Water Consumed during the Month of Nov., 2015

Name and address of the Consumer	Purpose for which water consumed	Reading at the beginning of the first day of the calendar month under report	Reading at the end of the last day of the calendar month under report	Quantity of Water Consumed in Kilo Letters	If the meter was out of order, the monthly average consumption of water for the previous 3 months of the working period	Quantity of water qualifying for rebate according to the assessee	Remarks
M/s ONGC Mangalore Petrochemicals Limited, Mangalore Special Economic Zone, Permude, Mangalore -574 509	Industrial cooling, spraying in mine pits or boiler feed	0	80766	80766			
	Cooling Water						
	Boiler Feed Water	0	85929	85929			
	Fire Water	0	70228	70228			
	Domestic purpose						
	Drinking Water & Sanitation Processing whereby water gets polluted and the pollutants are easily bio-degradable			3506			Flow through Running hours of pumps recorded
	Service Water						Subtracting total flow (by running hours of pumps) from BFW & CT consumption
Total Consumption				5912 246341			

Signature of the Consumer

SD

Name

Prashanth Kulkarni, Manager(TS)

Address

M/s ONGC Mangalore Petrochemicals Limited, Mangalore Special Economic Zone, Permude, Mangalore -574 509

Annexure - F

ONGC Mangalore Petrochemicals Limited

Production Details for November – 2015

Net Naptha Processed – 95342 MT

Sl. No.	Name of the Product	Quantity, MT
1	Paraxylene (Product)	43407
2	Benzene (Co product)	14172



ONGC Mangalore Petrochemicals Ltd.

2nd Floor, MUDA Building, Urwa Stores, Mangalore - 575 006

Phone +91-824 2451001-04 Fax +91-824 2451005

(A subsidiary of Mangalore Refinery and Petrochemicals Ltd.)

REF: OMPL/PCB/PK/2015-16/

Date: 14/1/2016

To:

The Environmental Officer

Regional Office

KSPCB

Baikampady, Mangalore-11

Dear Sir,

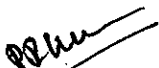
Sub: Submission of Environmental Monitoring Report for the Month of December 2015,
Production Report for December, 2015 & Returns Regarding Water Consumed for the
Month of December 2015

Ref: CFO No. PCB/245/HPI//ONGC/2014-15/593 dated 18th August 2014

With respect to the above subject, we are herewith submitting the following Environmental Monitoring Reports, production reports & Returns Regarding Water Consumed in the Month of December 2015 respectively, enclosed herewith.

1. Ambient Air Quality Monitoring at 5 different locations in and around OMPL, enclosed as Annexure- A
2. Water Analysis Reports at 9 different locations in and around OMPL, as Annexure-B
3. Noise Level Monitoring Report at OMPL, as Annexure-C
4. Stack Monitoring Report as Annexure-D
5. Treated Effluent Analysis Report – E
6. Returns Regarding Water Consumed, for the Month of December 2015, as Annexure-F
7. Production Report as Annexure-G

Thanking You,


Prashanth Kulkarni
Manager (TS)

CC: Member Secretary, KSPCB, Bangalore
CC: Head (Technical), MSEZ
CC: CEO, OMPL for info

REGIONAL OFFICE
Karnataka
Mangalore
14/1/16
Mangalore - 575 006

Annexure - F

JRM-1 (Rule 4)
Returns Regarding Water Consumed during the Month of Dec., 2015

Name and address of the Consumer	Purpose for which water consumed	Reading at the beginning of the first day of the calendar month under report	Reading at the end of the last day of the calendar month under report	Quantity of Water Consumed in Kilo Letters	If the meter was out of order, the monthly average consumption of water for the previous 3 months of the working period	Quantity of water qualifying for rebate according to the assessee	Remarks
M/s ONGC Mangalore Petrochemicals Limited, Mangalore Special Economic Zone, Perumde, Mangalore -574 509	Industrial cooling, spraying in mine pits or boiler feed						
	Cooling Water	0	88183	88183			
	Boiler Feed Water	0	86937	86937			
	Fire Water						
	Domestic purpose	0	54268	54268			
	Drinking Water & Sanitation Processing whereby water gets polluted and the pollutants are easily bio-degradable			3322			Flow through Running hours of pumps recorded
Service Water							Subtracting total flow (by running hours of pumps) from BFW & CT consumption
Total Consumption				4515			
				237225			

Signature of the Consumer

Name

Address

Prashanth Kulkarni, Manager(TS)

M/s ONGC Mangalore Petrochemicals Limited, Mangalore Special Economic Zone, Perumde, Mangalore -574 509

[Handwritten Signature]

[Handwritten Signature]

Test Report

ANALYSIS REPORT OF AMBIENT AIR QUALITY

1. Name of the location : OMPL East Side
2. Name of the industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Spécial Economic Zone, Permude
Mangalore-574509.
3. Sample Collected By : M/s. Environmental Health & Safety Research and Development
Centre, Bangalore – 560 010.
4. Particulars of Sample Collected : Ambient Air collected through
Fine Particulate Sampler – APM 550
Respirable Dust Sampler – 460NL,
CO & O₃ Analyzers.
5. Date of Collection : For the Month of Dec- 2015 (Monitored for 24 hours)
6. Sample Number : EHSRDC/OMPL/A/15/12/

PARAMETERS	DATE	WK 46		WK 47		WK 48		WK 49	
		01/12/2015	02/12/2015	07/12/2015	08/12/2015	14/12/2015	15/12/2015	21/12/2015	22/12/2015
	CODE	9872	9935	10150	10179	10444	10480	10740	10796
	LIMITS								
PM ₁₀ (µg/m ³)	100	55	61	63	63	59	64	62	60
PM _{2.5} (µg/m ³)	60	14	18	16	16	17	21	15	16
SO ₂ (µg/m ³)	80	2.93	3.01	2.06	2.76	2.65	2.68	2.49	3.11
NO ₂ (µg/m ³)	80	3.19	3.39	2.75	3.65	3.35	3.39	3.09	3.85
CO (mg/m ³)	4	0.74	0.75	0.82	0.85	0.78	0.76	0.83	0.67
O ₃ (µg/m ³)	180	0.82	0.83	0.92	0.72	0.85	0.82	0.87	0.73

Test Report

PARAMETERS	DATE	WK 46		WK 47		WK 48		WK 49	
		01/12/2015	02/12/2015	07/12/2015	08/12/2015	14/12/2015	15/12/2015	21/12/2015	22/12/2015
	CODE	9872	9935	10150	10179	10444	10480	10740	10796
	LIMITS								
NH ₃ (µg/m ³)	400	1.47	1.47	1.34	1.54	1.45	1.53	1.73	1.34
Lead (µg/m ³)	1	0.009	0.013	0.160	0.038	0.014	0.019	0.068	0.068
Arsenic (ng/m ³)	6	0.27	BDL	BDL	BDL	1.72	BDL	BDL	BDL
Nickel (ng/m ³)	20	1.62	2.38	1.76	1.91	1.32	BDL	1.69	1.36
Benzene (µg/m ³)	5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
B(a)P (ng/m ³)	1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

Note: BDL: Below Detectable Limit.

End of Report

Test Report

ANALYSIS REPORT OF AMBIENT AIR QUALITY

1. Name of the location : Shantigudda
2. Name of the industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Spécial Economic Zone, Permude
Mangalore-574509.
3. Sample Collected By : M/s. Environmental Health & Safety Research and
Development Centre, Bangalore - 560 010.
4. Particulars of Sample Collected : Ambient Air collected through
Fine Particulate Sampler - APM 550
Respirable Dust Sampler - 460NL,
CO & O₃ Analyzers.
5. Date of Collection : For the Month of Dec- 2015 (Monitored for 24 hours)
6. Sample Number : EHSRDC/OMPL/A/15/12/

PARAMETERS	DATE	WK 46		WK 47		WK 48		WK 49	
		01/12/2015	02/12/2015	07/12/2015	08/12/2015	14/12/2015	15/12/2015	21/12/2015	22/12/2015
	CODE	9871	9934	10149	10178	10443	10479	10739	10795
	LIMITS								
PM ₁₀ (µg/m ³)	100	58	64	61	60	63	60	63	63
PM _{2.5} (µg/m ³)	60	16	20	15	18	18	17	17	17
SO ₂ (µg/m ³)	80	2.89	2.96	2.16	2.45	2.35	2.65	2.66	2.44
NO ₂ (µg/m ³)	80	3.24	3.29	2.64	3.25	3.15	3.39	3.45	3.39
CO (mg/m ³)	4	0.77	0.79	0.78	0.76	0.76	0.87	0.83	0.80
O ₃ (µg/m ³)	180	0.81	0.83	0.83	0.80	0.83	0.92	0.85	0.85

Test Report

PARAMETERS	DATE	WK 46		WK 47		WK 48		WK 49	
		01/12/2015	02/12/2015	07/12/2015	08/12/2015	14/12/2015	15/12/2015	21/12/2015	22/12/2015
	CODE	9871	9934	10149	10178	10443	10479	10739	10795
	LIMITS								
NH ₃ (µg/m ³)	400	1.60	1.20	1.19	1.35	1.15	1.93	1.83	1.67
Lead (µg/m ³)	1	0.019	0.018	0.006	0.013	0.003	0.019	0.004	BDL
Arsenic (ng/m ³)	6	0.44	BDL	0.56	1.75	1.24	0.67	BDL	BDL
Nickel (ng/m ³)	20	2.72	BDL	2.12	0.66	1.36	3.58	BDL	2.58
Benzene (µg/m ³)	5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
B(a)P (ng/m ³)	1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

Note: BDL: Below Detectable Limit.

End of Report

Test Report

ANALYSIS REPORT OF AMBIENT AIR QUALITY

1. Name of the location : Tenka- Ekkar
2. Name of the industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Spécial Economic Zone, Permude
Mangalore-574509.
3. Sample Collected By : M/s. Environmental Health & Safety Research and
Development Centre, Bangalore - 560 010.
4. Particulars of Sample Collected : Ambient Air collected through
Fine Particulate Sampler - APM 550
Respirable Dust Sampler - 460NL,
CO & O₃ Analyzers.
5. Date of Collection : For the Month of Dec- 2015 (Monitored for 24 hours)
6. Sample Number : EHSRDC/OMPL/A/15/12/

PARAMETERS	DATE	WK 46		WK 47		WK 48		WK 49	
		03/12/2015	04/12/2015	09/12/2015	10/12/2015	16/12/2015	17/12/2015	23/12/2015	24/12/2015
	CODE	10058	10060	10205	10342	10544	10615	10797	10799
	LIMITS								
PM ₁₀ (µg/m ³)	100	58	64	58	61	68	70	59	67
PM _{2.5} (µg/m ³)	60	14	20	16	16	22	23	15	23
SO ₂ (µg/m ³)	80	3.48	2.21	2.85	2.45	2.72	2.53	2.16	2.45
NO ₂ (µg/m ³)	80	3.15	3.74	3.20	3.22	3.83	3.85	3.35	3.25
CO (mg/m ³)	4	0.71	0.75	0.75	0.88	0.76	0.83	0.83	0.67
O ₃ (µg/m ³)	180	0.85	0.80	0.83	0.92	0.82	0.87	0.78	0.78

Test Report

PARAMETERS	DATE	WK 46		WK 47		WK 48		WK 49	
		03/12/2015	04/12/2015	09/12/2015	10/12/2015	16/12/2015	17/12/2015	23/12/2015	24/12/2015
	CODE LIMITS	10058	10060	10205	10342	10544	10615	10797	10799
NH ₃ (µg/m ³)	400	1.32	1.26	1.16	1.81	1.13	1.67	1.49	1.17
Lead (µg/m ³)	1	0.018	0.012	0.027	0.007	0.008	0.001	0.006	BDL
Arsenic (ng/m ³)	6	0.74	0.41	BDL	BDL	0.69	BDL	BDL	BDL
Nickel (ng/m ³)	20	1.75	1.96	2.46	1.29	3.30	0.02	1.07	1.83
Benzene (µg/m ³)	5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
B(a)P (ng/m ³)	1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

Note: BDL: Below Detectable Limit.

End of Report

Test Report

ANALYSIS REPORT OF AMBIENT AIR QUALITY

1. Name of the location : Permude
2. Name of the industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Spécial Economic Zone, Permude
Mangalore-574509
3. Sample Collected By : M/s. Environmental Health & Safety Research and
Development Centre, Bangalore - 560 010.
4. Particulars of Sample Collected : Ambient Air collected through
Fine Particulate Sampler - APM 550
Respirable Dust Sampler - 460NL,
CO & O₃ Analyzers.
5. Date of Collection : For the Month of Dec- 2015 (Monitored for 24 hours)
6. Sample Number : EHSRDC/OMPL/A/15/12/

PARAMETERS	DATE	WK 46		WK 47		WK 48		WK 49	
		04/12/2015	05/12/2015	10/12/2015	11/12/2015	17/12/2015	18/12/2015	24/12/2015	25/12/2015
	CODE LIMITS	10059	10147	10341	10343	10616	10690	10798	10858
PM ₁₀ (µg/m ³)	100	62	70	66	59	63	66	62	68
PM _{2.5} (µg/m ³)	60	16	24	22	15	19	18	18	22
SO ₂ (µg/m ³)	80	2.54	2.36	2.11	2.83	2.45	2.65	2.49	2.85
NO ₂ (µg/m ³)	80	3.29	3.29	3.89	3.05	3.30	3.20	3.08	3.90
CO (mg/m ³)	4	0.83	0.76	0.70	0.69	0.79	0.72	0.83	0.80
O ₃ (µg/m ³)	180	0.85	0.82	0.76	0.78	0.85	0.80	0.85	0.84

Test Report

PARAMETERS	DATE	WK 46		WK 47		WK 48		WK 49	
		04/12/2015	05/12/2015	10/12/2015	11/12/2015	17/12/2015	18/12/2015	24/12/2015	25/12/2015
	CODE	10059	10147	10341	10343	10616	10690	10798	10858
	LIMITS								
NH ₃ (µg/m ³)	400	1.63	1.18	1.68	1.39	1.81	1.60	1.30	1.67
Lead (µg/m ³)	1	0.008	0.008	0.049	0.034	BDL	0.002	BDL	0.013
Arsenic (ng/m ³)	6	0.48	0.37	BDL	BDL	BDL	BDL	BDL	BDL
Nickel (ng/m ³)	20	1.04	2.69	1.01	2.34	BDL	BDL	1.23	1.14
Benzene (µg/m ³)	5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
B(a)P (ng/m ³)	1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

Note: BDL: Below Detectable Limit.

End of Report

Test Report

ANALYSIS REPORT OF AMBIENT AIR QUALITY

1. Name of the location : OMPL West Side
2. Name of the industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Spécial Economic Zone, Permude
Mangalore-574509
3. Sample Collected By : M/s. Environmental Health & Safety Research and
Development Centre, Bangalore - 560 010.
4. Particulars of Sample Collected : Ambient Air collected through
Fine Particulate Sampler - APM 550
Respirable Dust Sampler - 460NL,
CO & O₃ Analyzers.
5. Date of Collection : For the Month of Dec- 2015 (Monitored for 24 hours)
6. Sample Number : EHSRDC/OMPL/A/15/12/

PARAMETERS	DATE	WK 46		WK 47		WK 48		WK 49	
		01/12/2015	02/12/2015	07/12/2015	08/12/2015	14/12/2015	15/12/2015	21/12/2015	22/12/2015
	CODE	9870	9933	10148	10177	10442	10478	10738	10794
	LIMITS	9870	9933	10148	10177	10442	10478	10738	10794
PM ₁₀ (µg/m ³)	100	60	62	66	66	65	56	70	66
PM _{2.5} (µg/m ³)	60	23	17	22	22	22	15	23	22
SO ₂ (µg/m ³)	80	3.12	2.65	2.67	2.19	2.25	2.85	2.85	2.93
NO ₂ (µg/m ³)	80	3.64	3.22	3.78	3.09	3.19	3.29	3.19	3.67
CO (mg/m ³)	4	0.74	0.90	0.74	0.76	0.80	0.75	0.78	0.78
O ₃ (µg/m ³)	180	0.82	0.82	0.84	0.79	0.86	0.79	0.82	0.83

Test Report

PARAMETERS	DATE	WK 46		WK 47		WK 48		WK 49	
		01/12/2015	02/12/2015	07/12/2015	08/12/2015	14/12/2015	15/12/2015	21/12/2015	22/12/2015
	CODE LIMITS	9870	9933	10148	10177	10442	10478	10738	10794
NH ₃ (µg/m ³)	400	1.59	1.31	1.29	1.56	1.83	1.83	1.26	1.48
Lead (µg/m ³)	1	0.014	0.086	0.035	0.015	0.021	0.018	0.039	0.004
Arsenic (ng/m ³)	6	0.26	0.36	BDL	BDL	BDL	0.66	BDL	BDL
Nickel (ng/m ³)	20	1.75	2.04	1.41	2.57	BDL	BDL	2.525	1.55
Benzene (µg/m ³)	5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
B(a)P (ng/m ³)	1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

Note: BDL: Below Detectable Limit.

End of Report

Test Report

ANALYSIS REPORT OF FRESH WATER QUALITY

1. Name of the Location : GW1: Narayana Guru Community Hall, Permude
2. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Special Economic Zone, Permude
Mangalore-574509.
3. Sample Collected By : M/s. Environmental Health and Safety Research and Development
Centre, Bangalore - 560 010.
4. Date of Collection : 10.12.2015
5. Particulars of Sample Collected : Bore well water, Grab Sampling
6. Date of Sample Receipt : 11.12.2015
7. Sample Number : EHSRDC/OMPL/W/15/12/10206
8. Protocol : APHA, 22nd Edition/IS: Standard

Sl.No	PARAMETERS	UNIT	Test Methods	Std. IS 10500:2012 (Second Revision)		Code
				DL	PL	
1.	pH	--	4500H ⁺ B	6.5-8.5		GW1 10206
2.	Colour	Hazen	IS 3025(Part-4):1983	5	15	<1
3.	Odour	--	IS 3025(Part-5):1983	Unobjectionable		Unobjectionable
4.	Taste	--	IS 3025(Part-8):1984	Agreeable		Agreeable
5.	Turbidity	NTU	2130 B	1	5	4.13
6.	Total Dissolved Solids	mg/L	2540 C	500	2000	201
7.	Total Hardness	mg/L	2340 C	200	600	62
8.	Calcium as Ca	mg/L	3500-Ca	75	200	8.8
9.	Magnesium as Mg	mg/L	3500 Mg B	30	100	9.72
10.	Sulphate as SO ₄	mg/L	4500-SO ₄ ²⁻	200	400	5.99
11.	Fluoride as F	mg/L	4500F D	1	1.5	0.73
12.	Nitrate as NO ₃	mg/L	4500-NO ₃ E	45		1.12
13.	Chloride as Cl	mg/L	4500-Cl B	250	1000	13.79
14.	Iron as Fe	mg/L	3500-Fe B	0.3		0.13
15.	Alkalinity	mg/L	2320 B	200	600	64
16.	Chromium Hexavalent	mg/L	3500 Cr B	---		BDL
17.	E-Coli	CFU/100ml	IS:15185	Absent		Absent
18.	Total Coliform	CFU/100ml	9222 B	10		<1

Note:- BDL- Below Detectable Limit, DL - Desirable Limit, PL - Permissible Limit.

INFERENCE

As per IS 10500:2012(Second Revision),
Report Status: - The measured values for the above parameters for those standards
have been specified were observed to be within the said standard.

End of Report


Authorized Signatory

Test Report

ANALYSIS REPORT OF FRESH WATER QUALITY

1. Name of the Location : GW2: Gagnet Labor Colony
2. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Spécial Economic Zone, Permude
Mangalore-574509.
3. Sample Collected By : M/s. Environmental Health and Safety Research and Development
Centre, Bangalore - 560 010.
4. Date of Collection : 10.12.2015
5. Particulars of Sample Collected : Bore well water, Grab Sampling
6. Date of Sample Receipt : 11.12.2015
7. Sample Number : EHSRDC/OMPL/W/15/12/10207
8. Protocol : APHA, 22nd Edition/IS: Standard

Sl.No	PARAMETERS	UNIT	Test Methods	Std. IS 10500:2012 (Second Revision)		Code
				DL	PL	
						GW2 10207
1.	pH	--	4500H ⁺ B	6.5-8.5		8.2
2.	Colour	Hazen	IS 3025(Part-4):1983	5	15	<1
3.	Odour	--	IS 3025(Part-5):1983	Unobjectionable		Unobjectionable
4.	Taste	--	IS 3025(Part-8):1984	Agreeable		Agreeable
5.	Turbidity	NTU	2130 B	1	5	4.03
6.	Total Dissolved Solids	mg/L	2540 C	500	2000	188
7.	Total Hardness	mg/L	2340 C	200	600	98
8.	Calcium as Ca	mg/L	3500-Ca	75	200	19.2
9.	Magnesium as Mg	mg/L	3500 Mg B	30	100	12.15
10.	Sulphate as SO ₄	mg/L	4500-SO ₄ ²⁻	200	400	8.70
11.	Fluoride as F	mg/L	4500F D	1	1.5	0.59
12.	Nitrate as NO ₃	mg/L	4500-NO ₃ E	45		10.34
13.	Chloride as Cl	mg/L	4500-Cl B	250	1000	9.85
14.	Iron as Fe	mg/L	3500-Fe B	0.3		0.14
15.	Alkalinity	mg/L	2320 B	200	600	88
16.	Chromium Hexavalent	mg/L	3500 Cr B	---		BDL
17.	E-Coli	CFU/100ml	IS:15185	Absent		Absent
18.	Total Coliform	CFU/100ml	9222 B	10		<1

Note:- BDL- Below Detectable Limit, DL - Desirable Limit, PL - Permissible Limit.

INFERENCE

As per IS 10500:2012(Second Revision),
Report Status: - - The measured values for the above parameters for those standards
have been specified were observed to be within the said standard.

End of Report

Authorized Signatory

Test Report

ANALYSIS REPORT OF FRESH WATER QUALITY

1. Name of the Location : OW1: Tenka-Ekkar
2. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Special Economic Zone, Permude
Mangalore-574509
3. Sample Collected By : M/s. Environmental Health and Safety Research and
Development Centre, Bangalore - 560 010.
4. Date of Collection : 10.12.2015
5. Particulars of Sample Collected : Open well water, Grab Sampling
6. Date of Sample Receipt : 11.12.2015
7. Sample Number : EHSRDC/OMPL/W/15/12/10208
8. Protocol : APHA, 22nd Edition/IS: Standard

Sl.No	PARAMETERS	UNIT	Test Methods	Std. IS 10500:2012 (Second Revision)		Code
				DL	PL	
						OW1
						10208
1.	pH	--	4500H+ B	6.5-8.5		7.4
2.	Colour	Hazen	IS 3025(Part-4):1983	5	15	<1
3.	Odour	--	IS 3025(Part-5):1983	Unobjectionable		Unobjectionable
4.	Taste	--	IS 3025(Part-8):1984	Agreeable		Agreeable
5.	Turbidity	NTU	2130 B	1	5	0.76
6.	Total Dissolved Solids	mg/L	2540 C	500	2000	210
7.	Total Hardness	mg/L	2340 C	200	600	106
8.	Calcium as Ca	mg/L	3500-Ca	75	200	24.8
9.	Magnesium as Mg	mg/L	3500 Mg B	30	100	10.69
10.	Sulphate as SO ₄	mg/L	4500-SO ₄ ²⁻	200	400	27.43
11.	Fluoride as F	mg/L	4500F D	1	1.5	0.79
12.	Nitrate as NO ₃	mg/L	4500-NO ₃ E	45		1.36
13.	Chloride as Cl	mg/L	4500-Cl B	250	1000	10.84
14.	Iron as Fe	mg/L	3500-Fe B	0.3		0.19
15.	Alkalinity	mg/L	2320 B	200	600	72
16.	Chromium Hexavalent	mg/L	3500 Cr B	---		BDL
17.	E-Coli	CFU/100ml	IS:15185	Absent		Absent
18.	Total Coliform	CFU/100ml	9222 B	10		<1

Note:- BDL- Below Detectable Limit, DL - Desirable Limit, PL - Permissible Limit.

INFERENCE	As per IS 10500:2012(Second Revision), Report Status: - - The measured values for the above parameters for those standards have been specified were observed to be within the said standard.
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End of Report


Authorized Signatory

Test Report

ANALYSIS REPORT OF FRESH WATER QUALITY

1. Name of the Location : OW3: Shanthiguda Village
2. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Special Economic Zone, Permude
Mangalore-574509
3. Sample Collected By : M/s. Environmental Health and Safety Research and
Development Centre, Bangalore - 560 010.
4. Date of Collection : 10.12.2015
5. Particulars of Sample Collected : Open well water, Grab Sampling
6. Date of Sample Receipt : 11.12.2015
7. Sample Number : EHSRDC/OMPL/W/15/12/10209
8. Protocol : APHA, 22nd Edition/IS: Standard

Sl.No	PARAMETERS	UNIT	Test Methods	Std. IS 10500:2012 (Second Revision)		Code
				DL	PL	
						OW2 10209
1.	pH	--	4500H ⁺ B	6.5-8.5		7.6
2.	Colour	Hazen	IS 3025(Part-4):1983	5	15	<1
3.	Odour	--	IS 3025(Part-5):1983	Unobjectionable		Unobjectionable
4.	Taste	--	IS 3025(Part-8):1984	Agreeable		Agreeable
5.	Turbidity	NTU	2130 B	1	5	1.36
6.	Total Dissolved Solids	mg/L	2540 C	500	2000	68
7.	Total Hardness	mg/L	2340 C	200	600	28
8.	Calcium as Ca	mg/L	3500-Ca	75	200	5.6
9.	Magnesium as Mg	mg/L	3500 Mg B	30	100	3.40
10.	Sulphate as SO ₄	mg/L	4500-SO ₄ ²⁻	200	400	0.18
11.	Fluoride as F	mg/L	4500F D	1	1.5	0.44
12.	Nitrate as NO ₃	mg/L	4500-NO ₃ E	45		1.06
13.	Chloride as Cl	mg/L	4500-Cl B	250	1000	10.84
14.	Iron as Fe	mg/L	3500-Fe B	0.3		0.15
15.	Alkalinity	mg/L	2320 B	200	600	18
16.	Chromium Hexavalent	mg/L	3500 Cr B	---		BDL
17.	E-Coli	CFU/100ml	IS:15185	Absent		Absent
18.	Total Coliform	CFU/100ml	9222 B	10		<1

Note:- BDL- Below Detectable Limit, DL - Desirable Limit, PL - Permissible Limit.

INFERENCE

As per IS 10500:2012(Second Revision),
Report Status: -- The measured values for the above parameters for those standards
have been specified were observed to be within the said standard.

End of Report

Authorized Signatory

Test Report

ANALYSIS REPORT OF FRESH WATER QUALITY

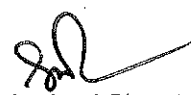
1. Name of the Location : SW1: Near Flare Area, OMPL
2. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Spécial Economic Zone, Permude
Mangalore-574509.
3. Sample Collected By : M/s. Environmental Health and Safety Research and Development
Centre, Bangalore - 560 010.
4. Date of Collection : 10.12.2015
5. Particulars of Sample Collected : Surface outlet water, Grab Sampling
6. Date of Sample Receipt : 11.12.2015
7. Sample Number : EHSRDC/OMPL/W/15/12/10210
8. Protocol : APHA, 22nd Edition/IS: Standard

Sl.No	PARAMETERS	UNIT	Test Methods	Std. IS 10500:2012 (Second Revision)		Code
				DL	PL	SW1 10210
1.	pH	--	4500H ⁺ B	6.5-8.5		7.3
2.	Colour	Hazen	IS 3025(Part-4):1983	5	15	<1
3.	Odour	--	IS 3025(Part-5):1983	Unobjectionable		Unobjectionable
4.	Taste	--	IS 3025(Part-8):1984	Agreeable		Agreeable
5.	Turbidity	NTU	2130 B	1	5	4.03
6.	Total Dissolved Solids	mg/L	2540 C	500	2000	212
7.	Total Hardness	mg/L	2340 C	200	600	58
8.	Calcium as Ca	mg/L	3500-Ca	75	200	12.8
9.	Magnesium as Mg	mg/L	3500 Mg B	30	100	6.31
10.	Sulphate as SO ₄	mg/L	4500-SO ₄ ²⁻	200	400	11.61
11.	Fluoride as F	mg/L	4500F D	1	1.5	0.68
12.	Nitrate as NO ₃	mg/L	4500-NO ₃ E	45		1.52
13.	Chloride as Cl	mg/L	4500-Cl B	250	1000	46.31
14.	Iron as Fe	mg/L	3500-Fe B	0.3		0.22
15.	Alkalinity	mg/L	2320 B	200	600	22
16.	Chromium Hexavalent	mg/L	3500 Cr B	---		0.002
17.	E-Coli	CFU/100ml	IS:15185	Absent		Absent
18.	Total Coliform	CFU/100ml	9222 B	10		1

Note:- BDL- Below Detectable Limit, DL - Desirable Limit, PL - Permissible Limit.

INFERENCE	As per IS 10500:2012(Second Revision), Report Status: - - The measured values for the above parameters for those standards have been specified were observed to be within the said standard.
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***End of Report**


Authorized Signatory

Test Report

ANALYSIS REPORT OF FRESH WATER QUALITY

1. Name of the Location : SW2 : Near Central Warehouse, OMPL
2. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Special Economic Zone, Permude
Mangalore-574509
3. Sample Collected By : M/s. Environmental Health and Safety Research and
Development Centre, Bangalore - 560 010.
4. Date of Collection : 10.12.2015
5. Particulars of Sample Collected : Surface inlet water, Grab Sampling
6. Date of Sample Receipt : 11.12.2015
7. Sample Number : EHSRDC/OMPL/W/15/12/10211
8. Protocol : APHA, 22nd Edition/IS: Standard

Sl.No	PARAMETERS	UNIT	Test Methods	Std. IS 10500:2012 (Second Revision)		Code
				DL	PL	SW2
						10211
1.	pH	--	4500H ⁺ B	6.5-8.5		7.5
2.	Colour	Hazen	IS 3025(Part-4):1983	5	15	<1
3.	Odour	--	IS 3025(Part-5):1983	Unobjectionable		Unobjectionable
4.	Taste	--	IS 3025(Part-8):1984	Agreeable		Agreeable
5.	Turbidity	NTU	2130 B	1	5	3.13
6.	Total Dissolved Solids	mg/L	2540 C	500	2000	198
7.	Total Hardness	mg/L	2340 C	200	600	64
8.	Calcium as Ca	mg/L	3500-Ca	75	200	16.8
9.	Magnesium as Mg	mg/L	3500 Mg B	30	100	5.34
10.	Sulphate as SO ₄	mg/L	4500-SO ₄ ²⁻	200	400	11.98
11.	Fluoride as F	mg/L	4500F D	1	1.5	0.80
12.	Nitrate as NO ₃	mg/L	4500-NO ₃ E	45		0.57
13.	Chloride as Cl	mg/L	4500-Cl B	250	1000	44.34
14.	Iron as Fe	mg/L	3500-Fe B	0.3		0.28
15.	Alkalinity	mg/L	2320 B	200	600	46
16.	Chromium Hexavalent	mg/L	3500 Cr B	---		0.002
17.	E-Coli	CFU/100ml	IS:15185	Absent		Absent
18.	Total Coliform	CFU/100ml	9222 B	10		<1

Note:- BDL- Below Detectable Limit, DL - Desirable Limit, PL - Permissible Limit.

INFERENCE

As per IS 10500:2012(Second Revision),
Report Status: -- The measured values for the above parameters for those standards
have been specified were observed to be within the said standard.

End of Report

Authorized Signatory

Test Report

ANALYSIS REPORT OF FRESH WATER QUALITY

1. Name of the Location : GW3: L&T New Labor Colony
2. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Spécial Economic Zone, Permude
Mangalore-574509
3. Sample Collected By : M/s. Environmental Health and Safety Research and Development
Centre, Bangalore - 560 010.
4. Date of Collection : 10.12.2015
5. Particulars of Sample Collected : Bore well water ,Grab Sampling
6. Date of Sample Receipt : 11.12.2015
7. Sample Number : EHSRDC/OMPL/W/15/12/10212
8. Protocol : APHA, 22nd Edition/IS: Standard

SL.No	PARAMETERS	UNIT	Test Methods	Std. IS 10500:2012 (Second Revision)		Code
				DL	PL	GW3 10212
1.	pH	--	4500H ⁺ B	6.5-8.5		7.8
2.	Colour	Hazen	IS 3025(Part-4):1983	5	15	<1
3.	Odour	--	IS 3025(Part-5):1983	Unobjectionable		Unobjectionable
4.	Taste	--	IS 3025(Part-8):1984	Agreeable		Agreeable
5.	Turbidity	NTU	2130 B	1	5	4.8
6.	Total Dissolved Solids	mg/L	2540 C	500	2000	215
7.	Total Hardness	mg/L	2340 C	200	600	106
8.	Calcium as Ca	mg/L	3500-Ca	75	200	25.6
9.	Magnesium as Mg	mg/L	3500 Mg B	30	100	10.20
10.	Sulphate as SO ₄	mg/L	4500-SO ₄ ²⁻	200	400	11.79
11.	Fluoride as F	mg/L	4500F D	1	1.5	0.86
12.	Nitrate as NO ₃	mg/L	4500-NO ₃ E	45		1.49
13.	Chloride as Cl	mg/L	4500-Cl B	250	1000	9.86
14.	Iron as Fe	mg/L	3500-Fe B	0.3		0.27
15.	Alkalinity	mg/L	2320 B	200	600	102
16.	Chromium Hexavalent	mg/L	3500 Cr B	---		BDL
17.	E-Coli	CFU/100ml	IS:15185	Absent		Absent
18.	Total Coliform	CFU/100ml	9222 B	10		<1

Note:- BDL- Below Detectable Limit, DL - Desirable Limit, PL - Permissible Limit.

INFERENCE	As per IS 10500:2012(Second Revision), Report Status: - - The measured values for the above parameters for those standards have been specified were observed to be within the said standard.
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End of Report


Authorized Signatory

Test Report

ANALYSIS REPORT OF FRESH WATER QUALITY

1. Name of the Location : OW3: Permude Village
2. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Spécial Economic Zone, Permude
Mangalore-574509
3. Sample Collected By : M/s. Environmental Health and Safety Research and
Development Centre, Bangalore - 560 010.
4. Date of Collection : 10.12.2015
5. Particulars of Sample Collected : Open well water, Grab Sampling
6. Date of Sample Receipt : 11.12.2015
7. Sample Number : EHSRDC/OMPL/W/15/12/10213
8. Protocol : APHA, 22nd Edition/IS: Standard

Sl.No	PARAMETERS	UNIT	Test Methods	Std. IS 10500:2012 (Second Revision)		Code
				DL	PL	
						OW3
						10213
1.	pH	--	4500H ⁺ B	6.5-8.5		7.2
2.	Colour	Hazen	IS 3025(Part-4):1983	5	15	<1
3.	Odour	--	IS 3025(Part-5):1983	Unobjectionable		Unobjectionable
4.	Taste	--	IS 3025(Part-8):1984	Agreeable		Agreeable
5.	Turbidity	NTU	2130 B	1	5	0.70
6.	Total Dissolved Solids	mg/L	2540 C	500	2000	178
7.	Total Hardness	mg/L	2340 C	200	600	124
8.	Calcium as Ca	mg/L	3500-Ca	75	200	13.6
9.	Magnesium as Mg	mg/L	3500 Mg B	30	100	21.87
10.	Sulphate as SO ₄	mg/L	4500-SO ₄ ²⁻	200	400	29.12
11.	Fluoride as F	mg/L	4500F D	1	1.5	1.0
12.	Nitrate as NO ₃	mg/L	4500-NO ₃ E	45		1.0
13.	Chloride as Cl	mg/L	4500-Cl B	250	1000	9.85
14.	Iron as Fe	mg/L	3500-Fe B	0.3		0.18
15.	Alkalinity	mg/L	2320 B	200	600	48
16.	Chromium Hexavalent	mg/L	3500 Cr B	---		BDL
17.	E-Coli	CFU/100ml	IS:15185	Absent		Absent
18.	Total Coliform	CFU/100ml	9222 B	10		<1

Note:- BDL- Below Detectable Limit, DL - Desirable Limit, PL - Permissible Limit.

INFERENCE

As per IS 10500:2012(Second Revision),
Report Status: -- The measured values for the above parameters for those standards
have been specified were observed to be within the said standard.

End of Report

Authorized Signatory

Test Report

ANALYSIS REPORT OF FRESH WATER QUALITY

1. Name of the Location : GW4: OMPL (Near ETP)
2. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Special Economic Zone, Permude
Mangalore-574509
3. Sample Collected By : M/s. Environmental Health and Safety Research and
Development Centre, Bangalore - 560 010.
4. Date of Collection : 10.12.2015
5. Particulars of Sample Collected : Bore well water, Grab Sampling
6. Date of Sample Receipt : 11.12.2015
7. Sample Number : EHSRDC/OMPL/W/15/12/10214
8. Protocol : APHA, 22nd Edition/IS: Standard

Sl.No	PARAMETERS	UNIT	Test Methods	Std. IS 10500:2012 (Second Revision)		Code
				DL	PL	GW4 10214
1.	pH	--	4500H ⁺ B	6.5-8.5		7.7
2.	Colour	Hazen	IS 3025(Part-4):1983	5	15	<1
3.	Odour	--	IS 3025(Part-5):1983	Unobjectionable		Unobjectionable
4.	Taste	--	IS 3025(Part-8):1984	Agreeable		Agreeable
5.	Turbidity	NTU	2130 B	1	5	3.3
6.	Total Dissolved Solids	mg/L	2540 C	500	2000	196
7.	Total Hardness	mg/L	2340 C	200	600	64
8.	Calcium as Ca	mg/L	3500-Ca	75	200	12.8
9.	Magnesium as Mg	mg/L	3500 Mg B	30	100	7.77
10.	Sulphate as SO ₄	mg/L	4500-SO ₄ ²⁻	200	400	12.54
11.	Fluoride as F	mg/L	4500F D	1	1.5	0.47
12.	Nitrate as NO ₃	mg/L	4500-NO ₃ E	45		0.30
13.	Chloride as Cl	mg/L	4500-Cl B	250	1000	34.49
14.	Iron as Fe	mg/L	3500-Fe B	0.3		0.21
15.	Alkalinity	mg/L	2320 B	200	600	46
16.	Chromium Hexavalent	mg/L	3500 Cr B	---		BDL
17.	E-Coli	CFU/100ml	IS:15185	Absent		Absent
18.	Total Coliform	CFU/100ml	9222 B	10		<1

Note:- BDL- Below Detectable Limit, DL - Desirable Limit, PL - Permissible Limit.

INFERENCE

As per IS 10500:2012(Second Revision),
Report Status: - - The measured values for the above parameters for those standards
have been specified were observed to be within the said standard.

End of Report

Authorized Signatory

Test Report

AMBIENT NOISE LEVEL MONITORING REPORT

1. Name of the Project : M/s. ONGC Mangalore Petrochemicals Limited,
Mangalore Spécial Economic Zone,
Permude.Mangalore-574509.
2. Sample Collected by : M/s. Environmental Health and Safety Research &
Development Centre, Bangalore - 560 010.
3. Date of Collection : 16.12.2015
4. Particulars of Sample : Ambient Noise Level collected through
Collected Sound Level Meter C-322
5. Date of Sample Receipt : 17.12.2015
6. Sample Number : EHSRDC/OMPL/N/15/12/ 10484-10487
7. Method Adopted : Instrument Method

Code No	Sample Location	Parameters		Std.
		Day Time dB(A)	Night Time dB(A)	
10484	OMPL East Side Boundary	63.40	52.08	75.0 dB(A) Day
10485	OMPL West Side Boundary	60.49	55.16	
10486	OMPL South Side Boundary	60.31	53.98	70 dB(A) Night
10487	OMPL North Side Boundary	60.89	55.75	

Note :

- Day Time is reckoned between 6 A.M and 10 P.M
- Night Time is reckoned between 10 P.M and 6 A.M
- L_{eq} : It is energy mean of the noise level over a specified period.
- *dB (A) L_{eq} denotes the time weighted average of the level of sound in decibels on scale A which is relatable to human hearing.
- A "decibel" is a unit in which noise is measured.
- "A", in dB (A) L_{eq} , denotes the frequency weighting in the measurement of noise and corresponds to Frequency response characteristics of the human ear.

End of Report

Authorized Signatory

Test Report

ANALYSIS REPORT FOR SOURCE EMISSION

1. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Spécial Economic Zone, Permude
Mangalore-574509.
2. Stack ID : CPP (GTG + HRSG) -1
3. Sample Collected by : M/s. Environmental Health and Safety Research &
Development Centre, Bangalore - 560 010.
4. Date of Collection : 14.12.2015
5. Particulars of Sample : Emissions from stack collected through
Collected Stack Sampler VSS1
6. Date of Sample Receipt : 16.12.2015
7. Sample Number : EHSRDC/OMPL/S/12/15/10445
8. Report to be Sent : 19.12.2015
9. Page No : 1 of 9

GENERAL DETAILS

Date of Monitoring	14.12.2015
Ambient Temperature (°C)	32
Stack Temperature (°C)	152
Velocity (m/s)	7.29
Diameter (m)	2.8
Cross Sectional Area in meter square (m²)	6.154
Quantity of flue gas discharged into atmosphere (Nm³/h)	115865.77
Dust Emission Rate of PM, kg/hr	2.5142

RESULTS

Parameters	Protocol	Unit	Result	Standard
Particulate matter	IS: 11255(P1)	mg/Nm³	21.70	50
Nitrogen dioxide	IS: 11255 (P7)	mg/ Nm³	10.41	350
Sulphur dioxide	IS: 11255, (P2)	mg/Nm³	9.60	850
Carbon Monoxide	EPA method (10)	mg/Nm³	56.5	150

INFERENCE	As per KSPCB Standards, Report Status: - The measured values for above parameters are within the standard.
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End of Report


Authorized Signatory

Test Report

ANALYSIS REPORT FOR SOURCE EMISSION

1. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Spécial Economic Zone, Permude
Mangalore-574509.
2. Stack ID : CPP Utility Boiler
3. Sample Collected by : M/s. Environmental Health and Safety Research &
Development Centre, Bangalore - 560 010.
4. Date of Collection : 14.12.2015
5. Particulars of Sample : Emissions from stack collected through
Collected Stack Sampler VSS1
6. Date of Sample Receipt : 16.12.2015
7. Sample Number : EHSRDC/OMPL/S/12/15/10446
8. Report to be Sent : 19.12.2015
9. Page No : 2 of 9

GENERAL DETAILS

Date of Monitoring	14.12.2015
Ambient Temperature (°C)	30
Stack Temperature (°C)	125
Velocity (m/s)	6.62
Diameter (m)	2.74
Cross Sectional Area in meter square (m ²)	5.893
Quantity of flue gas discharged into atmosphere (Nm ³ /h)	106993.4
Dust Emission Rate of PM, kg/hr	1.6986

RESULTS

Parameters	Protocol	Unit	Result	Standard
Particulate matter	IS: 11255(P1)	mg/Nm ³	15.88	50
Nitrogen dioxide	IS: 11255 (P7)	mg/ Nm ³	12.99	350
Sulphur dioxide	IS: 11255, (P2)	mg/Nm ³	12.80	850
Carbon Monoxide	EPA method (10)	mg/Nm ³	45.6	150

INFERENCE	As per KSPCB Standards, Report Status: - The measured values for above parameters are within the standard.
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End of Report


Authorized Signatory

Test Report

ANALYSIS REPORT FOR SOURCE EMISSION

1. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Spécial Economic Zone, Permude
Mangalore-574509.
2. Stack ID : NHT Charge Heater
3. Sample Collected by : M/s. Environmental Health and Safety Research &
Development Centre, Bangalore - 560 010.
4. Date of Collection : 14.12.2015
5. Particulars of Sample : Emissions from stack collected through
Collected Stack Sampler VSS1
6. Date of Sample Receipt : 16.12.2015
7. Sample Number : EHSRDC/OMPL/S/12/15/10447
8. Report to be Sent : 19.12.2015
9. Page No : 3 of 9

GENERAL DETAILS

Date of Monitoring	14.12.2015
Ambient Temperature (°C)	34
Stack Temperature (°C)	242
Velocity (m/s)	6.04
Diameter (m)	1.94
Cross Sectional Area in meter square (m²)	2.954
Quantity of flue gas discharged into atmosphere (Nm³/h)	38318.73
Dust Emission Rate of PM, kg/hr	0.1770

RESULTS

Parameters	Protocol	Unit	Result	Standard
Particulate matter	IS: 11255(P1)	mg/Nm³	4.62	5
Nitrogen dioxide	IS: 11255 (P7)	mg/ Nm³	6.72	250
Sulphur dioxide	IS: 11255, (P2)	mg/Nm³	5.49	50
Carbon Monoxide	EPA method (10)	mg/Nm³	63.5	100

INFERENCE	As per KSPCB Standards, Report Status: - The measured values for above parameters are within the standard.
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End of Report


Authorized Signatory

Test Report

ANALYSIS REPORT FOR SOURCE EMISSION

1. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Spécial Economic Zone, Permude
Mangalore-574509.
2. Stack ID : Tatory charge Heater
3. Sample Collected by : M/s. Environmental Health and Safety Research &
Development Centre, Bangalore - 560 010.T
4. Date of Collection : 14.12.2015
5. Particulars of Sample : Emissions from stack collected through
Collected Stack Sampler VSS1
6. Date of Sample Receipt : 16.12.2015
7. Sample Number : EHSRDC/OMPL/S/12/15/10448
8. Report to be Sent : 19.12.2015
9. Page No : 4 of 9

GENERAL DETAILS

Date of Monitoring	14.12.2015
Ambient Temperature (°C)	32
Stack Temperature (°C)	210
Velocity (m/s)	7.05
Diameter (m)	1.75
Cross Sectional Area in meter square (m²)	2.404
Quantity of flue gas discharged into atmosphere (Nm³/h)	38527.92
Dust Emission Rate of PM, kg/hr	0.1695

RESULTS

Parameters	Protocol	Unit	Result	Standard
Particulate matter	IS: 11255(P1)	mg/Nm³	4.40	5
Nitrogen dioxide	IS: 11255 (P7)	mg/ Nm³	11.84	250
Sulphur dioxide	IS: 11255, (P2)	mg/Nm³	9.06	50
Carbon Monoxide	EPA method (10)	mg/Nm³	59.4	100

INFERENCE	As per KSPCB Standards, Report Status: - The measured values for above parameters are within the standard.
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End of Report


Authorized Signatory

Test Report

ANALYSIS REPORT FOR SOURCE EMISSION

1. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Spécial Economic Zone, Permude
Mangalore-574509.
2. Stack ID : ISOMER Charge Heater
3. Sample Collected by : M/s. Environmental Health and Safety Research &
Development Centre, Bangalore - 560 010.
4. Date of Collection : 15.12.2015
5. Particulars of Sample : Emissions from stack collected through
Collected Stack Sampler VSS1
6. Date of Sample Receipt : 16.12.2015
7. Sample Number : EHSRDC/OMPL/S/12/15/10449
8. Report to be Sent : 19.12.2015
9. Page No : 5 of 9

GENERAL DETAILS

Date of Monitoring	15.12.2015
Ambient Temperature (°C)	33
Stack Temperature (°C)	235
Velocity (m/s)	7.18
Diameter (m)	2.3
Cross Sectional Area in meter square (m²)	4.153
Quantity of flue gas discharged into atmosphere (Nm³/h)	64638.914
Dust Emission Rate of PM, kg/hr	0.3135

RESULTS

Parameters	Protocol	Unit	Result	Standard
Particulate matter	IS: 11255(P1)	mg/Nm³	4.85	5
Nitrogen dioxide	IS: 11255 (P7)	mg/ Nm³	8.32	250
Sulphur dioxide	IS: 11255, (P2)	mg/Nm3	6.40	50
Carbon Monoxide	EPA method (10)	mg/Nm³	69.5	100

INFERENCE

As per KSPCB Standards,
Report Status: - The measured values for above parameters are within the standard.

End of Report


Authorized Signatory

Test Report

ANALYSIS REPORT FOR SOURCE EMISSION

1. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Spécial Economic Zone, Permude
Mangalore-574509.
2. Stack ID : Platformer Charge Heater
3. Sample Collected by : M/s. Environmental Health and Safety Research &
Development Centre, Bangalore - 560 010.
4. Date of Collection : 15.12.2015
5. Particulars of Sample : Emissions from stack collected through
Collected Stack Sampler VSS1
6. Date of Sample Receipt : 16.12.2015
7. Sample Number : EHSRDC/OMPL/S/12/15/10451
8. Report to be Sent : 19.12.2015
9. Page No : 6 of 9

GENERAL DETAILS

Date of Monitoring	15.12.2015
Ambient Temperature (°C)	34
Stack Temperature (°C)	352
Velocity (m/s)	10.46
Diameter (m)	4.10
Cross Sectional Area in meter square (m²)	13.196
Quantity of flue gas discharged into atmosphere (Nm³/h)	24392.38
Dust Emission Rate of PM, kg/hr	0.9393

RESULTS

Parameters	Protocol	Unit	Result	Standard
Particulate matter	IS: 11255(P1)	mg/Nm³	3.85	5
Nitrogen dioxide	IS: 11255 (P7)	mg/ Nm³	11.98	250
Sulphur dioxide	IS: 11255, (P2)	mg/Nm³	9.60	50
Carbon Monoxide	EPA method (10)	mg/Nm³	86.2	100

INFERENCE	As per KSPCB Standards, Report Status: - The measured value for above parameters is within the standard.
-----------	---

End of Report


Authorized Signatory

Test Report

ANALYSIS REPORT FOR SOURCE EMISSION

1. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Spécial Economic Zone, Permude
Mangalore-574509.
2. Stack ID : Xylene column Reboiler Heater Part -A
3. Sample Collected by : M/s. Environmental Health and Safety Research &
Development Centre, Bangalore - 560 010.
4. Date of Collection : 16.12.2015
5. Particulars of Sample : Emissions from stack collected through
Collected Stack Sampler VSS1
6. Date of Sample Receipt : 17.12.2015
7. Sample Number : EHSRDC/OMPL/S/12/15/10481
8. Report to be Sent : 19.12.2015
9. Page No : 7 of 9

GENERAL DETAILS

Date of Monitoring	16.12.2015
Ambient Temperature (°C)	32
Stack Temperature (°C)	188
Velocity (m/s)	7.81
Diameter (m)	3.69
Cross Sectional Area in meter square (m²)	10.689
Quantity of flue gas discharged into atmosphere (Nm³/h)	198814.305
Dust Emission Rate of PM, kg/hr	3.4793

RESULTS

Parameters	Protocol	Unit	Result	Standard
Particulate matter	IS: 11255(P1)	mg/Nm³	17.50	50
Nitrogen dioxide	IS: 11255 (P7)	mg/ Nm³	13.97	350
Sulphur dioxide	IS: 11255, (P2)	mg/Nm³	13.44	850
Carbon Monoxide	EPA method (10)	mg/Nm³	87.2	150

INFERENCE	As per KSPCB Standards, Report Status: - The measured values for above parameters are within the standard.
-----------	---

End of Report


Authorized Signatory

Test Report

ANALYSIS REPORT FOR SOURCE EMISSION

1. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Spécial Economic Zone, Permude
Mangalore-574509.
2. Stack ID : Xylene column Reboiler Heater Part- B
3. Sample Collected by : M/s. Environmental Health and Safety Research &
Development Centre, Bangalore - 560 010.
4. Date of Collection : 16.12.2015
5. Particulars of Sample : Emissions from stack collected through
Collected Stack Sampler VSS1
6. Date of Sample Receipt : 17.12.2015
7. Sample Number : EHSRDC/OMPL/S/12/15/10482
8. Report to be Sent : 19.12.2015
9. Page No : 8 of 9

GENERAL DETAILS

Date of Monitoring	16.12.2015
Ambient Temperature (°C)	30
Stack Temperature (°C)	183
Velocity (m/s)	6.73
Diameter (m)	3.69
Cross Sectional Area in meter square (m ²)	10.689
Quantity of flue gas discharged into atmosphere (Nm ³ /h)	171984.41
Dust Emission Rate of PM, kg/hr	3.5429

RESULTS

Parameters	Protocol	Unit	Result	Standard
Particulate matter	IS: 11255(P1)	mg/Nm ³	20.60	50
Nitrogen dioxide	IS: 11255 (P7)	mg/ Nm ³	12.19	350
Sulphur dioxide	IS: 11255, (P2)	mg/Nm ³	10.47	850
Carbon Monoxide	EPA method (10)	mg/Nm ³	74.6	150

INFERENCE

As per KSPCB Standards,
Report Status: - The measured values for above parameters are within the standard.

End of Report


Authorized Signatory

Test Report

ANALYSIS REPORT FOR SOURCE EMISSION

1. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Spécial Economic Zone, Permude
Mangalore-574509.
2. Stack ID : BTF(Benzene Toluene fractionation Column
ReboilerHeater)
3. Sample Collected by : M/s. Environmental Health and Safety Research &
Development Centre, Bangalore - 560 010.
4. Date of Collection : 16.12.2015
5. Particulars of Sample Collected : Emissions from stack collected through
Stack Sampler VSS1
6. Date of Sample Receipt : 17.12.2015
7. Sample Number : EHSRDC/OMPL/S/12/15/10483
8. Report to be Sent : 19.12.2015
9. Page No : 9 of 9

GENERAL DETAILS

Date of Monitoring	16.12.2015
Ambient Temperature (°C)	30
Stack Temperature (°C)	181
Velocity (m/s)	6.41
Diameter (m)	3.29
Cross Sectional Area in meter square (m²)	8.497
Quantity of flue gas discharged into atmosphere (Nm³/h)	130788.13
Dust Emission Rate of PM, kg/hr	3.1782

RESULTS

Parameters	Protocol	Unit	Result	Standard
Particulate matter	IS: 11255(P1)	mg/Nm³	24.30	50
Nitrogen dioxide	IS: 11255 (P7)	mg/ Nm³	12.35	350
Sulphur dioxide	IS: 11255, (P2)	mg/Nm³	12.00	850
Carbon Monoxide	EPA method (10)	mg/Nm³	73.4	150

INFERENCE

As per KSPCB Standards,
Report Status: - The measured values for above parameters are within the standard.

*

End of Report


Authorized Signatory

Test Report

Sample Number: EHSRDC/OMPL/ WW/15/12/10215
Page No: 02 of 02

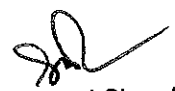
14.	Ammonical Nitrogen	4500- NH ₃ ,B,C	mg/L	0.46	15
15.	Hexavalent Chromium	3500- Cr B	mg/L	0.008	0.1
16.	Sulphide	IS 3025 (part 29): 1986	mg/L	0.4	1.0
17.	Fluoride as F	IS 3025(Part 60): 2008	mg/L	0.95	1.5
18.	Nitrate as NO ₃	IS 3025(Part 34): 1988	mg/L	1.58	20
19.	Iron as Fe	IS 3025(Part 53):2003	mg/L	0.60	3
20.	Mercury as Hg*	IS 3025(Part-48):1994	mg/L	BDL	0.01
21.	Lead as Pb*	IS 3025(Part 47):1994	mg/L	0.005	2
22.	Cadmium as Cd*	IS 3025(Part 41):1992	mg/L	0.001	0.1
23.	Selenium as Se*	IS 3025(Part 56):2003	mg/L	BDL	0.05
24.	Arsenic as As*	IS 3025(Part 37):1988	mg/L	0.004	0.2
25.	Zinc as Zn*	IS 3025(Part 49):1994	mg/L	0.020	5
26.	Copper as Cu*	IS 3025(Part-42):1992	mg/L	0.003	1
27.	Manganese as Mn*	3111 B	mg/L	0.003	2
28.	Vanadium*	3500 -V	mg/L	BDL	0.1
29.	Nickel as Ni*	IS13428:2005 (Annex L)	mg/L	0.001	1
30.	Total chromium*	IS 13428:2005(Annex J)	mg/L	0.008	2
31.	Benzene*	APHA 6200 B	mg/L	0.02	0.1
32.	Benzo (a) pyrene*	APHA 6440	µg/l	BDL	0.2
33.	Bioassay*	IS 6582	% survivality	100	90% survival of fish after 96 hrs, in 100% effluent
34.	Phenolic compounds	IS 3025 (part 43):1992	mg/L	BDL	0.35
35.	Cyanide	IS 3025 (Part 27):1986	mg/L	BDL	0.2

*are not accredited by NABL.

Note: BDL: Below Detectable Limit.

INFERENCE	As per Tolerance limit, Report Status: - The measured values for the above parameters for those standards have been specified were observed to be within the said standard.
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End of Report


Authorized Signatory

Annexure - F

Form-1 (Rule 4)
Returns Regarding Water Consumed during the Month of Dec., 2015

Name and address of the Consumer	Purpose for which water consumed	Reading at the beginning of the first day of the calendar month under report	Reading at the end of the last day of the calendar month under report	Quantity of Water Consumed in Kilo Liters	If the meter was out of order, the monthly average consumption of water for the previous 3 months of the working period	Quantity of water qualifying for rebate according to the assessee	Remarks
M/s ONGC Mangalore Petrochemicals Limited, Mangalore Special Economic Zone, Permude, Mangalore -574 509	Industrial cooling, spraying in mine pits or boiler feed	0	88183	88183			
	Cooling Water						
	Boiler Feed Water	0	86937	86937			
	Fire Water	0	54268	54268			
	Domestic purpose						
	Drinking Water & Sanitation						Flow through Running hours of pumps recorded
	Processing whereby water gets polluted and the pollutants are easily bio-degradable			3322			
	Service Water						Subtracting total flow (by running hours of pumps) from BFW & CT consumption
Total Consumption				4515			
				237225			

Signature of the Consumer

Name

Prashanth Kulkarni, Manager(TS)

Address

M/s ONGC Mangalore Petrochemicals Limited, Mangalore Special Economic Zone, Permude, Mangalore -574 509

Amixur - G.

ONGC Mangalore Petrochemicals Limited

Production Details for December – 2015

Net Naptha Processed – 108849 MT

Sl. No.	Name of the Product	Quantity, MT
1	Paraxylene (Product)	62001
2	Benzene (Co product)	16150



ONGC Mangalore Petrochemicals Limited

(A Subsidiary of Mangalore Refinery and Petrochemicals Ltd.)
Mangalore Special Economic Zone, Permude, Mangaluru-574 509
CIN : U40107KA2006PLC041258 Website : www.ompl.co.in
Phone : +91 824 2881518 Fax : +91 824 2881539

REF: OMPL/PCB/PK/2015-16/

Date: 14/2/2016

To:
The Environmental Officer
Regional Office
KSPCB
Baikampady, Mangalore-11



Dear Sir,

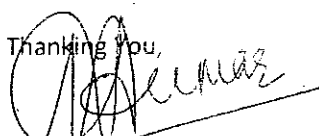
Sub: Submission of Environmental Monitoring Report for the Month of January 2016
Production Report for January, 2016 & Returns Regarding Water Consumed for the
Month of January 2016

Ref: CFO No. PCB/245/HPI//ONGC/2014-15/593 dated 18th August 2014

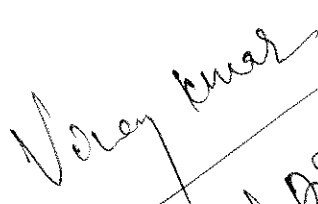
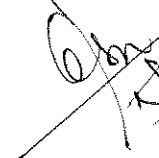
With respect to the above subject; we are herewith submitting the following Environmental Monitoring Reports, production reports & Returns Regarding Water Consumed in the Month of January 2016 respectively, enclosed herewith.

1. Ambient Air Quality Monitoring at 5 different locations in and around OMPL, enclosed as Annexure- A
2. Water Analysis Reports at 9 different locations in and around OMPL, as Annexure-B
3. Noise Level Monitoring Report at OMPL, as Annexure-C
4. Treated Effluent Analysis Report – D
5. Returns Regarding Water Consumed, for the Month of January 2016, as Annexure-E
6. Production Report as Annexure-F

Thanking You,


Prashanth Kulkarni
Manager (TS)

CC: Member Secretary, KSPCB, Bangalore
CC: Head (Technical), MSEZ
CC: CEO, OMPL for info


Virey Kumar
Chief Officer

15/2/16

Test Report

ANALYSIS REPORT OF AMBIENT AIR QUALITY

1. Name of the location : OMPL East Side
2. Name of the industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Spécial Economic Zone, Perumde
Mangalore-574509.
3. Sample Collected By : M/s. Environmental Health & Safety Research and Development
Centre, Bangalore - 560 010.
4. Particulars of Sample Collected : Ambient Air collected through
Fine Particulate Sampler - APM 550
Respirable Dust Sampler - 460NL,
CO & O₃ Analyzers.
5. Date of Collection : For the Month of January-2016(Monitored for 24 hours)
6. Sample Number : EHSRDC/OMPL/A/16/01/

PARAMETERS	DATE	WK 50		WK 51		WK 52		WK 53	
		04/01/2016	05/01/2016	11/01/2016	12/01/2016	18/01/2016	19/01/2016	25/01/2016	26/01/2016
	CODE	11218	11221	11500	11542	11700	11767	11953	12015
	LIMITS								
PM ₁₀ (µg/m ³)	100	63	67	59	66	65	67	63	67
PM _{2.5} (µg/m ³)	60	16	19	14	18	16	22	22	16
SO ₂ (µg/m ³)	80	2.81	2.28	2.13	2.54	2.60	2.11	2.69	3.05
NO ₂ (µg/m ³)	80	3.18	3.58	3.09	3.42	3.09	3.35	3.28	3.27
CO (mg/m ³)	4	0.77	0.78	0.82	0.85	0.79	0.79	0.83	0.72
O ₃ (µg/m ³)	180	0.74	0.87	0.86	0.72	0.82	0.83	0.90	0.79

Test Report

PARAMETERS	DATE	WK 50		WK 51		WK 52		WK 53	
		04/01/2016	05/01/2016	11/01/2016	12/01/2016	18/01/2016	19/01/2016	25/01/2016	26/01/2016
	CODE	11218	11221	11500	11542	11700	11767	11953	12015
	LIMITS								
NH ₃ (µg/m ³)	400	1.21	1.26	1.49	1.36	1.83	1.63	1.53	1.50
Lead (µg/m ³)	1	0.01	0.010	0.045	0.016	BDL	BDL	0.006	0.008
Arsenic (ng/m ³)	6	BDL	BDL	BDL	BDL	BDL	BDL	0.49	BDL
Nickel (ng/m ³)	20	1.09	1.066	2.84	1.39	1.65	1.01	1.06	1.09
Benzene (µg/m ³)	5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
B(a)P (ng/m ³)	1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

Note: BDL: Below Detectable Limit.

End of Report

Test Report

ANALYSIS REPORT OF AMBIENT AIR QUALITY

1. Name of the location : Shantigudda
2. Name of the industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Spécial Economic Zone, Permude
Mangalore-574509.
3. Sample Collected By : M/s. Environmental Health & Safety Research and
Development Centre, Bangalore - 560 010.
4. Particulars of Sample Collected : Ambient Air collected through
Fine Particulate Sampler - APM 550
Respirable Dust Sampler - 460NL,
CO & O₃ Analyzers.
5. Date of Collection : For the Month of January-2016(Monitored for 24 hours)
6. Sample Number : EHSRDC/OMPL/A/16/01/

PARAMETERS	DATE	WK 50		WK 51		WK 52		WK 53	
		04/01/2016	05/01/2016	11/01/2016	12/01/2016	18/01/2016	19/01/2016	25/01/2016	26/01/2016
	CODE	11217	11220	11499	11541	11699	11766	11952	12014
	LIMITS								
PM ₁₀ (µg/m ³)	100	65	64	65	69	63	64	60	69
PM _{2.5} (µg/m ³)	60	18	17	17	20	18	18	19	17
SO ₂ (µg/m ³)	80	2.62	2.36	2.06	2.70	2.63	2.85	2.63	2.69
NO ₂ (µg/m ³)	80	3.25	3.40	3.61	3.58	3.01	3.13	3.05	3.69
CO (mg/m ³)	4	0.79	0.78	0.78	0.76	0.78	0.79	0.80	0.78
O ₃ (µg/m ³)	180	0.83	0.87	0.83	0.80	0.83	0.85	0.84	0.81

Test Report

PARAMETERS	DATE	WK 50		WK 51		WK 52		WK 53	
		04/01/2016	05/01/2016	11/01/2016	12/01/2016	18/01/2016	19/01/2016	25/01/2016	26/01/2016
	CODE	11217	11220	11499	11541	11699	11766	11952	12014
	LIMITS								
NH ₃ (µg/m ³)	400	1.65	1.65	1.43	1.29	2.05	1.45	1.45	1.63
Lead (µg/m ³)	1	0.008	0.006	BDL	0.013	BDL	BDL	0.005	0.0034
Arsenic (ng/m ³)	6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.49
Nickel (ng/m ³)	20	1.88	BDL	1.47	1.71	1.95	1.99	1.44	1.45
Benzene (µg/m ³)	5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
B(a)P (ng/m ³)	1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

Note: BDL: Below Detectable Limit.

End of Report

Test Report

ANALYSIS REPORT OF AMBIENT AIR QUALITY

1. Name of the location : Tenka- Ekkar
2. Name of the industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Spécial Economic Zone, Permude
Mangalore-574509.
3. Sample Collected By : M/s. Environmental Health & Safety Research and
Development Centre, Bangalore - 560 010.
4. Particulars of Sample Collected : Ambient Air collected through
Fine Particulate Sampler - APM 550.
Respirable Dust Sampler - 460NL,
CO & O₃ Analyzers.
5. Date of Collection : For the Month of January-2016(Monitored for 24 hours)
6. Sample Number : EHSRDC/OMPL/A/16/01/

PARAMETERS	DATE	WK 50		WK 51		WK 52		WK 53	
		06/01/2016	07/01/2016	13/01/2016	14/01/2016	20/01/2016	21/01/2016	27/01/2016	28/01/2016
	CODE LIMITS	11263	11265	11543	11636	11854	11856	12016	12022
PM ₁₀ (µg/m ³)	100	67	65	67	67	69	68	70	68
PM _{2.5} (µg/m ³)	60	18	19	19	17	17	18	20	20
SO ₂ (µg/m ³)	80	2.25	2.48	2.76	2.65	2.72	2.45	2.64	2.63
NO ₂ (µg/m ³)	80	3.09	3.15	2.90	3.02	3.83	3.30	3.35	2.96
CO (mg/m ³)	4	0.78	0.92	0.75	0.81	0.76	0.79	0.85	0.80
O ₃ (µg/m ³)	180	0.83	0.83	0.83	0.75	0.82	0.85	0.87	0.84

Test Report

PARAMETERS	DATE	WK 50		WK 51		WK 52		WK 53	
		06/01/2016	07/01/2016	13/01/2016	14/01/2016	20/01/2016	21/01/2016	27/01/2016	28/01/2016
	CODE	11263	11265	11543	11636	11854	11856	12016	12022
	LIMITS								
NH ₃ (µg/m ³)	400	1.63	1.33	1.33	1.66	1.13	1.81	1.35	1.88
Lead (µg/m ³)	1	0.008	0.002	BDL	BDL	0.008	0.006	0.009	0.022
Arsenic (ng/m ³)	6	BDL	BDL	BDL	BDL	0.73	0.74	0.99	BDL
Nickel (ng/m ³)	20	1.17	1.56	1.11	1.14	1.08	1.44	1.98	1.66
Benzene (µg/m ³)	5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
B(a)P (ng/m ³)	1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

Note: BDL: Below Detectable Limit.

End of Report

Test Report

ANALYSIS REPORT OF AMBIENT AIR QUALITY

1. Name of the location : Permude
2. Name of the industry : M/s. ONGC Mangalore Petrochemicals Limited.
Mangalore Spécial Economic Zone, Permude.
Mangalore-574509
3. Sample Collected By : M/s. Environmental Health & Safety Research and,
Development Centre, Bangalore - 560 010.
4. Particulars of Sample Collected : Ambient Air collected through
Fine Particulate Sampler - APM 550 -
Respirable Dust Sampler - 460NL,
CO & O₃ Analyzers.
5. Date of Collection : For the Month of January-2016(Monitored for 24 hours)
6. Sample Number : EHSRDC/OMPL/A/16/01/

PARAMETERS	DATE	WK 50		WK 51		WK 52		WK 53	
		07/01/2016	08/01/2016	14/01/2016	15/01/2016	21/01/2016	22/01/2016	28/01/2016	29/01/2016
	CODE	11264	11317	11635	11637	11855	11871	12021	12141
	LIMITS								
PM ₁₀ (µg/m ³)	100	63	66	70	69	66	58	66	58
PM _{2.5} (µg/m ³)	60	16	18	21	18	19	15	18	16
SO ₂ (µg/m ³)	80	2.45	2.54	2.88	2.93	2.53	2.16	2.25	2.11
NO ₂ (µg/m ³)	80	3.36	3.14	3.09	3.35	3.85	3.48	3.32	3.83
CO (mg/m ³)	4	0.83	0.80	0.76	0.83	0.83	0.77	0.87	0.76
O ₃ (µg/m ³)	180	0.88	0.85	0.80	0.72	0.87	0.82	0.78	0.83

Test Report

PARAMETERS	DATE	WK 50		WK 51		WK 52		WK 53	
		07/01/2016	08/01/2016	14/01/2016	15/01/2016	21/01/2016	22/01/2016	28/01/2016	29/01/2016
	CODE	11264	11317	11635	11637	11855	11871	12021	12141
	LIMITS								
NH ₃ (µg/m ³)	400	1.29	1.63	1.45	1.78	1.67	1.53	1.65	1.35
Lead (µg/m ³)	1	0.015	0.006	0.048	BDL	0.038	0.008	0.010	0.005
Arsenic (ng/m ³)	6	BDL	BDL	BDL	BDL	BDL	2.24	BDL	BDL
Nickel (ng/m ³)	20	1.79	1.024	1.025	1.05	1.90	1.97	1.38	BDL
Benzene (µg/m ³)	5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
B(a)P (ng/m ³)	1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

Note: BDL: Below Detectable Limit.

End of Report

Test Report

ANALYSIS REPORT OF AMBIENT AIR QUALITY

1. Name of the location : OMPL West Side
2. Name of the industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Spécial Economic Zone, Permude
Mangalore-574509
3. Sample Collected By : M/s. Environmental Health & Safety Research and
Development Centre, Bangalore - 560 010.
4. Particulars of Sample Collected : Ambient Air collected through
Fine Particulate Sampler - APM 550
Respirable Dust Sampler - 460NL,
CO & O₃ Analyzers.
5. Date of Collection : For the Month of January-2016(Monitored for 24 hours)
6. Sample Number : EHSRDC/OMPL/A/16/01/

PARAMETERS	DATE	WK 50		WK 51		WK 52		WK 53	
		04/01/2016	05/01/2016	11/01/2016	12/01/2016	18/01/2016	19/01/2016	25/01/2016	26/01/2016
	CODE	11216	11219	11498	11540	11698	11765	11951	12013
	LIMITS								
PM ₁₀ (µg/m ³)	100	68	58	62	64	58	60	56	65
PM _{2.5} (µg/m ³)	60	21	15	15	16	15	16	16	19
SO ₂ (µg/m ³)	80	2.44	2.54	2.62	2.44	2.66	2.51	3.29	2.60
NO ₂ (µg/m ³)	80	3.11	3.09	3.22	2.86	3.89	3.11	3.45	3.16
CO (mg/m ³)	4	0.77	0.81	0.74	0.76	0.78	0.80	0.78	0.80
O ₃ (µg/m ³)	180	0.71	0.84	0.84	0.79	0.82	0.83	0.84	0.86

Test Report

PARAMETERS	DATE	WK 50		WK 51		WK 52		WK 53	
		04/01/2016	05/01/2016	11/01/2016	12/01/2016	18/01/2016	19/01/2016	25/01/2016	26/01/2016
	CODE LIMITS	11216	11219	11498	11540	11698	11765	11951	12013
NH ₃ (µg/m ³)	400	1.45	1.11	1.23	1.40	1.35	1.67	1.65	1.54
Lead (µg/m ³)	1	0.035	0.007	0.009	0.005	0.008	BDL	0.054	0.028
Arsenic (ng/m ³)	6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.48
Nickel (ng/m ³)	20	1.026	1.956	1.365	1.35	1.221	1.245	1.585	1.992
Benzene (µg/m ³)	5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
B(a)P (ng/m ³)	1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

Note: BDL: Below Detectable Limit.

End of Report

Test Report

ANALYSIS REPORT OF FRESH WATER QUALITY

1. Name of the Location : GW1: Narayana GuruCommunity Hall, Permude
2. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Special Economic Zone,Permude
Mangalore-574509.
3. Sample Collected By : M/s. Environmental Health and Safety Research and Development
Centre, Bangalore - 560 010.
4. Date of Collection : 16.01.2016
5. Particulars of Sample Collected : Bore well water, Grab Sampling
6. Date of Sample Receipt : 18.01.2016
7. Sample Number : EHSRDC/OMPL/W/16/01/11622
8. Protocol : APHA, 22nd Edition/IS: Standard

Sl.No	PARAMETERS	UNIT	Test Methods	Std. IS 10500:2012 (Second Revision)		Code
				DL	PL	
						GW1 11622
1.	pH	--	4500H ⁺ B	6.5-8.5		6.6
2.	Colour	Hazen	IS 3025(Part-4):1983	5	15	<1
3.	Odour	--	IS 3025(Part-5):1983	Unobjectionable		Unobjectionable
4.	Taste	--	IS 3025(Part-8):1984	Agreeable		Agreeable
5.	Turbidity	NTU	2130 B	1	5	2.8
6.	Total Dissolved Solids	mg/L	2540 C	500	2000	122
7.	Total Hardness	mg/L	2340 C	200	600	62.0
8.	Calcium as Ca	mg/L	3500-Ca	75	200	10.0
9.	Magnesium as Mg	mg/L	3500 Mg B	30	100	8.99
10.	Sulphate as SO ₄	mg/L	4500-SO ₄ ²⁻	200	400	2.24
11.	Fluoride as F	mg/L	4500F D	1	1.5	0.24
12.	Nitrate as NO ₃	mg/L	4500-NO ₃ E	45		0.15
13.	Chloride as Cl	mg/L	4500-Cl B	250	1000	20.69
14.	Iron as Fe	mg/L	3500-Fe B	0.3		0.22
15.	Alkalinity	mg/L	2320 B	200	600	74.0
16.	Chromium Hexavalent	mg/L	3500 Cr B	---		BDL
17.	E-Coli	CFU/100ml	IS15185:2002	Absent		Absent
18.	Total Coliform	CFU/100ml	IS15185:2002	Absent		Absent

Note:- BDL- Below Detectable Limit, DL - Desirable Limit, PL - Permissible Limit.

INFERENCE

As per IS 10500:2012(Second Revision),
Report Status: - The measured values for the above parameters for those standards
have been specified were observed to be within the said standard.

End of Report

Praveena
Authorized Signatory

Test Report

ANALYSIS REPORT OF FRESH WATER QUALITY

1. Name of the Location : GW2: GagnetLabor Colony
2. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Spécial Economic Zone, Permude
Mangalore-574509.
3. Sample Collected By : M/s. Environmental Health and Safety Research and Development
Centre, Bangalore - 560 010.
4. Date of Collection : 16.01.2016
5. Particulars of Sample Collected : Bore well water, Grab Sampling
6. Date of Sample Receipt : 18.01.2016
7. Sample Number : EHSRDC/OMPL/W/16/01/11623
8. Protocol : APHA, 22nd Edition/IS: Standard

Sl.No	PARAMETERS	UNIT	Test Methods	Std. IS 10500:2012 (Second Revision)		Code
				DL	PL	GW2 11623
1.	pH	--	4500H ⁺ B	6.5-8.5		8.3
2.	Colour	Hazen	IS 3025(Part-4):1983	5	15	<1
3.	Odour	--	IS 3025(Part-5):1983	Unobjectionable		Unobjectionable
4.	Taste	--	IS 3025(Part-8):1984	Agreeable		Agreeable
5.	Turbidity	NTU	2130 B	1	5	4.5
6.	Total Dissolved Solids	mg/L	2540 C	500	2000	161
7.	Total Hardness	mg/L	2340 C	200	600	90.0
8.	Calcium as Ca	mg/L	3500-Ca	75	200	18.0
9.	Magnesium as Mg	mg/L	3500 Mg B	30	100	10.93
10.	Sulphate as SO ₄	mg/L	4500-SO ₄ ²⁻	200	400	14.60
11.	Fluoride as F	mg/L	4500F D	1	1.5	0.61
12.	Nitrate as NO ₃	mg/L	4500-NO ₃ E	45		BDL
13.	Chloride as Cl	mg/L	4500-Cl B	250	1000	15.27
14.	Iron as Fe	mg/L	3500-Fe B	0.3		0.29
15.	Alkalinity	mg/L	2320 B	200	600	88.0
16.	Chromium Hexavalent	mg/L	3500 Cr B	---		BDL
17.	E-Coli	CFU/100ml	IS 15185:2002	Absent		Absent
18.	Total Coliform	CFU/100ml	IS 15185:2002	Absent		Absent

Note:- BDL- Below Detectable Limit, DL - Desirable Limit, PL - Permissible Limit.

INFERENCE

As per IS 10500:2012(Second Revision),
Report Status: - The measured values for the above parameters for those standards
have been specified were observed to be within the said standard.

End of Report

Praveena

Authorized Signatory

Test Report

ANALYSIS REPORT OF FRESH WATER QUALITY

1. Name of the Location : OW1: Tenka-Ekkar
2. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Special Economic Zone, Permude
Mangalore-574509
3. Sample Collected By : M/s. Environmental Health and Safety Research and
Development Centre, Bangalore - 560 010.
4. Date of Collection : 16.01.2016
5. Particulars of Sample Collected : Open well water, Grab Sampling
6. Date of Sample Receipt : 18.01.2016
7. Sample Number : EHSRDC/OMPL/W/16/01/11624
8. Protocol : APHA, 22nd Edition/IS: Standard

Sl.No	PARAMETERS	UNIT	Test Methods	Std. IS 10500:2012 (Second Revision)		Code
				DL	PL	
						OW1 11624
1.	pH	--	4500H ⁺ B	6.5-8.5		8.36
2.	Colour	Hazen	IS 3025(Part-4):1983	5	15	<1
3.	Odour	--	IS 3025(Part-5):1983	Unobjectionable		Unobjectionable
4.	Taste	--	IS 3025(Part-8):1984	Agreeable		Agreeable
5.	Turbidity	NTU	2130 B	1	5	1.18
6.	Total Dissolved Solids	mg/L	2540 C	500	2000	72.0
7.	Total Hardness	mg/L	2340 C	200	600	36.0
8.	Calcium as Ca	mg/L	3500-Ca	75	200	9.6
9.	Magnesium as Mg	mg/L	3500 Mg B	30	100	2.91
10.	Sulphate as SO ₄	mg/L	4500-SO ₄ ²⁻	200	400	BDL
11.	Fluoride as F	mg/L	4500F D	1	1.5	0.46
12.	Nitrate as NO ₃	mg/L	4500-NO ₃ E	45		0.30
13.	Chloride as Cl	mg/L	4500-Cl B	250	1000	14.78
14.	Iron as Fe	mg/L	3500-Fe B	0.3		0.12
15.	Alkalinity	mg/L	2320 B	200	600	36.0
16.	Chromium Hexavalent	mg/L	3500 Cr B	---		BDL
17.	E-Coli	CFU/100ml	IS 15185:2002	Absent		Absent
18.	Total Coliform	CFU/100ml	IS 15185:2002	Absent		Absent

Note:- BDL- Below Detectable Limit, DL - Desirable Limit, PL - Permissible Limit.

INFERENCE	As per IS 10500:2012(Second Revision), Report Status:- The measured values for the above parameters for those standards have been specified were observed to be within the said standard.
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End of Report

Paveena
Authorized Signatory

Test Report

ANALYSIS REPORT OF FRESH WATER QUALITY

1. Name of the Location : OW3: Shanthiguda Village
2. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Special Economic Zone, Perumde
Mangalore-574509
3. Sample Collected By : M/s. Environmental Health and Safety Research and
Development Centre, Bangalore - 560 010.
4. Date of Collection : 16.01.2016
5. Particulars of Sample Collected : Open well water, Grab Sampling
6. Date of Sample Receipt : 18.01.2016
7. Sample Number : EHSRDC/OMPL/W/16/01/11625
8. Protocol : APHA, 22nd Edition/IS: Standard

Sl.No	PARAMETERS	UNIT	Test Methods	Std. IS 10500:2012 (Second Revision)		Code
				DL	PL	
						OW2
						11625
1.	pH	--	4500H ⁺ B	6.5-8.5		7.2
2.	Colour	Hazen	IS 3025(Part-4):1983	5	15	<1
3.	Odour	--	IS 3025(Part-5):1983	Unobjectionable		Unobjectionable
4.	Taste	--	IS 3025(Part-8):1984	Agreeable		Agreeable
5.	Turbidity	NTU	2130 B	1	5	1.02
6.	Total Dissolved Solids	mg/L	2540 C	500	2000	60.0
7.	Total Hardness	mg/L	2340 C	200	600	27.0
8.	Calcium as Ca	mg/L	3500-Ca	75	200	4.8
9.	Magnesium as Mg	mg/L	3500 Mg B	30	100	3.64
10.	Sulphate as SO ₄	mg/L	4500-SO ₄ ²⁻	200	400	BDL
11.	Fluoride as F	mg/L	4500F D	1	1.5	0.58
12.	Nitrate as NO ₃	mg/L	4500-NO ₃ E	45		0.39
13.	Chloride as Cl	mg/L	4500-Cl B	250	1000	14.28
14.	Iron as Fe	mg/L	3500-Fe B	0.3		0.26
15.	Alkalinity	mg/L	2320 B	200	600	20.0
16.	Chromium Hexavalent	mg/L	3500 Cr B	---		BDL
17.	E-Coli	CFU/100ml	IS 15185:2002	Absent		Absent
18.	Total Coliform	CFU/100ml	IS 15185:2002	Absent		Absent

Note:- BDL- Below Detectable Limit, DL - Desirable Limit, PL - Permissible Limit.

INFERENCE

As per IS 10500:2012(Second Revision),

Report Status:- The measured values for the above parameters for those standards have been specified were observed to be within the said standard.

End of Report

Praveena
Authorized Signatory

Test Report

ANALYSIS REPORT OF FRESH WATER QUALITY

1. Name of the Location : SW1: Near Flare Area, OMPL
2. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Spécial Economic Zone, Permude
Mangalore-574509.
3. Sample Collected By : M/s. Environmental Health and Safety Research and Development
Centre, Bangalore - 560 010.
4. Date of Collection : 16.01.2016
5. Particulars of Sample Collected : Surface outlet water, Grab Sampling
6. Date of Sample Receipt : 18.01.2016
7. Sample Number : EHSRDC/OMPL/W/16/01/11626
8. Protocol : APHA, 22nd Edition/IS: Standard

Sl.No	PARAMETERS	UNIT	Test Methods	Std. IS 10500:2012 (Second Revision)		Code
				DL	PL	SW1 11626
1.	pH	--	4500H ⁺ B	6.5-8.5		6.9
2.	Colour	Hazen	IS 3025(Part-4):1983	5	15	<1
3.	Odour	--	IS 3025(Part-5):1983	Unobjectionable		Unobjectionable
4.	Taste	--	IS 3025(Part-8):1984	Agreeable		Agreeable
5.	Turbidity	NTU	2130 B	1	5	3.26
6.	Total Dissolved Solids	mg/L	2540 C	500	2000	112.0
7.	Total Hardness	mg/L	2340 C	200	600	60.0
8.	Calcium as Ca	mg/L	3500-Ca	75	200	16.4
9.	Magnesium as Mg	mg/L	3500 Mg B	30	100	4.61
10.	Sulphate as SO ₄	mg/L	4500-SO ₄ ²⁻	200	400	12.26
11.	Fluoride as F	mg/L	4500F D	1	1.5	0.34
12.	Nitrate as NO ₃	mg/L	4500-NO ₃ E	45		0.39
13.	Chloride as Cl	mg/L	4500-Cl B	250	1000	31.53
14.	Iron as Fe	mg/L	3500-Fe B	0.3		0.28
15.	Alkalinity	mg/L	2320 B	200	600	42.0
16.	Chromium Hexavalent	mg/L	3500 Cr B	---		BDL
17.	E-Coli	CFU/100ml	IS 15185:2002	Absent		Absent
18.	Total Coliform	CFU/100ml	IS 15185:2002	Absent		Absent

Note:- BDL- Below Detectable Limit, DL - Desirable Limit, PL - Permissible Limit.

INFERENCE	As per IS 10500:2012(Second Revision), Report Status:- The measured values for the above parameters for those standards have been specified were observed to be within the said standard.
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***End of Report**

Paveena
Authorized Signatory

Test Report

ANALYSIS REPORT OF FRESH WATER QUALITY

1. Name of the Location : SW2 : Near Central Warehouse, OMPL
2. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Special Economic Zone, Permude
Mangalore-574509
3. Sample Collected By : M/s. Environmental Health and Safety Research and
Development Centre, Bangalore - 560 010.
4. Date of Collection : 16.01.2016
5. Particulars of Sample Collected : Surface inlet water, Grab Sampling
6. Date of Sample Receipt : 18.01.2016
7. Sample Number : EHSRDC/OMPL/W/16/01/11627
8. Protocol : APHA, 22nd Edition/IS: Standard

Sl.No	PARAMETERS	UNIT	Test Methods	Std. IS 10500:2012 (Second Revision)		Code
				DL	PL	SW2
						11627
1.	pH	--	4500H ⁺ B	6.5-8.5		7.5
2.	Colour	Hazen	IS 3025(Part-4):1983	5	15	<1
3.	Odour	--	IS 3025(Part-5):1983	Unobjectionable		Unobjectionable
4.	Taste	--	IS 3025(Part-8):1984	Agreeable		Agreeable
5.	Turbidity	NTU	2130 B	1	5	3.23
6.	Total Dissolved Solids	mg/L	2540 C	500	2000	153
7.	Total Hardness	mg/L	2340 C	200	600	70.0
8.	Calcium as Ca	mg/L	3500-Ca	75	200	22.4
9.	Magnesium as Mg	mg/L	3500 Mg B	30	100	3.4
10.	Sulphate as SO ₄	mg/L	4500-SO ₄ ²⁻	200	400	12.36
11.	Fluoride as F	mg/L	4500F D	1	1.5	0.37
12.	Nitrate as NO ₃	mg/L	4500-NO ₃ E	45		0.42
13.	Chloride as Cl	mg/L	4500-Cl B	250	1000	32.53
14.	Iron as Fe	mg/L	3500-Fe B	0.3		0.29
15.	Alkalinity	mg/L	2320 B	200	600	59.0
16.	Chromium Hexavalent	mg/L	3500 Cr B	---		BDL
17.	E-Coli	CFU/100ml	IS 15185:2002	Absent		Absent
18.	Total Coliform	CFU/100ml	IS 15185:2002	Absent		Absent

Note:- BDL- Below Detectable Limit, DL - Desirable Limit, PL - Permissible Limit.

INFERENCE

As per IS 10500:2012(Second Revision),
Report Status: - The measured values for the above parameters for those standards
have been specified were observed to be within the said standard.

End of Report

Praveena
Authorized Signatory

Test Report

ANALYSIS REPORT OF FRESH WATER QUALITY

1. Name of the Location : GW3: L&T New Labor Colony
2. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Spécial Economic Zone, Permude
Mangalore-574509
3. Sample Collected By : M/s. Environmental Health and Safety Research and Development
Centre, Bangalore - 560 010.
4. Date of Collection : 16.01.2016
5. Particulars of Sample Collected : Bore well water ,Grab Sampling
6. Date of Sample Receipt : 18.01.2016
7. Sample Number : EHSRDC/OMPL/W/16/01/11628
8. Protocol : APHA, 22nd Edition/IS: Standard

Sl.No	PARAMETERS	UNIT	Test Methods	Std. IS 10500:2012 (Second Revision)		Code
				DL	PL	GW3
						11628
1.	pH	--	4500H+ B	6.5-8.5		8.4
2.	Colour	Hazen	IS 3025(Part-4):1983	5	15	<1
3.	Odour	--	IS 3025(Part-5):1983	Unobjectionable		Unobjectionable
4.	Taste	--	IS 3025(Part-8):1984	Agreeable		Agreeable
5.	Turbidity	NTU	2130 B	1	5	4.31
6.	Total Dissolved Solids	mg/L	2540 C	500	2000	180.0
7.	Total Hardness	mg/L	2340 C	200	600	91.0
8.	Calcium as Ca	mg/L	3500-Ca	75	200	23.2
9.	Magnesium as Mg	mg/L	3500 Mg B	30	100	8.01
10.	Sulphate as SO ₄	mg/L	4500-SO ₄ ²⁻	200	400	14.51
11.	Fluoride as F	mg/L	4500F D	1	1.5	0.19
12.	Nitrate as NO ₃	mg/L	4500-NO ₃ E	45		BDL
13.	Chloride as Cl	mg/L	4500-Cl B	250	1000	14.28
14.	Iron as Fe	mg/L	3500-Fe B	0.3		0.29
15.	Alkalinity	mg/L	2320 B	200	600	85.0
16.	Chromium Hexavalent	mg/L	3500 Cr B	---		BDL
17.	E-Coli	CFU/100ml	IS 15185:2002	Absent		Absent
18.	Total Coliform	CFU/100ml	IS 15185:2002	Absent		Absent

Note:- BDL- Below Detectable Limit, DL - Desirable Limit, PL - Permissible Limit.

INFERENCE

As per IS 10500:2012(Second Revision),
Report Status:- The measured values for the above parameters for those standards
have been specified were observed to be within the said standard.

End of Report

Phaveena
Authorized Signatory

Test Report

ANALYSIS REPORT OF FRESH WATER QUALITY

1. Name of the Location : OW3: Permude Village
2. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore SpécialEconomicZone, Permude
Mangalore-574509
3. Sample Collected By : M/s. Environmental Health and Safety Research and
Development Centre, Bangalore - 560 010.
4. Date of Collection : 16.01.2016
5. Particulars of Sample Collected : Open well water, Grab Sampling
6. Date of Sample Receipt : 18.01.2016
7. Sample Number : EHSRDC/OMPL/W/16/01/11629
8. Protocol : APHA, 22nd Edition/IS: Standard

Sl.No	PARAMETERS	UNIT	Test Methods	Std. IS 10500:2012 (Second Revision)		Code
				DL	PL	
						OW3
						11629
1.	pH	--	4500H* B	6.5-8.5		8.38
2.	Colour	Hazen	IS 3025(Part-4):1983	5	15	<1
3.	Odour	--	IS 3025(Part-5):1983	Unobjectionable		Unobjectionable
4.	Taste	--	IS 3025(Part-8):1984	Agreeable		Agreeable
5.	Turbidity	NTU	2130 B	1	5	0.28
6.	Total Dissolved Solids	mg/L	2540 C	500	2000	167
7.	Total Hardness	mg/L	2340 C	200	600	94.0
8.	Calcium as Ca	mg/L	3500-Ca	75	200	26.4
9.	Magnesium as Mg	mg/L	3500 Mg B	30	100	6.80
10.	Sulphate as SO ₄	mg/L	4500-SO ₄ ²⁻	200	400	29.3
11.	Fluoride as F	mg/L	4500F D	1	1.5	0.84
12.	Nitrate as NO ₃	mg/L	4500-NO ₃ E	45		0.27
13.	Chloride as Cl	mg/L	4500-Cl B	250	1000	13.3
14.	Iron as Fe	mg/L	3500-Fe B	0.3		BDL
15.	Alkalinity	mg/L	2320 B	200	600	74.0
16.	Chromium Hexavalent	mg/L	3500 Cr B	---		BDL
17.	E-Coli	CFU/100ml	IS 15185:2002	Absent		Absent
18.	Total Coliform	CFU/100ml	IS 15185:2002	Absent		Absent

Note:- BDL- Below Detectable Limit, DL - Desirable Limit, PL - Permissible Limit.

INFERENCE

As per IS 10500:2012(Second Revision),
Report Status: - The measured values for the above parameters for those standards
have been specified were observed to be within the said standard.

End of Report

Praveena

Authorized Signatory

Test Report

ANALYSIS REPORT OF FRESH WATER QUALITY

1. Name of the Location : GW4: OMPL (Near ETP)
2. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore SpecialEconomicZone, Permude
Mangalore-574509
3. Sample Collected By : M/s. Environmental Health and Safety Research and
Development Centre, Bangalore - 560 010.
4. Date of Collection : 16.01.2016
5. Particulars of Sample Collected : Bore well water, Grab Sampling
6. Date of Sample Receipt : 18.01.2016
7. Sample Number : EHSRDC/OMPL/W/16/01/11630
8. Protocol : APHA, 22nd Edition/IS: Standard

Sl.No	PARAMETERS	UNIT	Test Methods	Std. IS 10500:2012 (Second Revision)		Code
				DL	PL	GW4 11630
1.	pH	--	4500H ⁺ B	6.5-8.5		6.97
2.	Colour	Hazen	IS 3025(Part-4):1983	5	15	<1
3.	Odour	--	IS 3025(Part-5):1983	Unobjectionable		Unobjectionable
4.	Taste	--	IS 3025(Part-8):1984	Agreeable		Agreeable
5.	Turbidity	NTU	2130 B	1	5	1.92
6.	Total Dissolved Solids	mg/L	2540 C	500	2000	144
7.	Total Hardness	mg/L	2340 C	200	600	60.0
8.	Calcium as Ca	mg/L	3500-Ca	75	200	12.4
9.	Magnesium as Mg	mg/L	3500 Mg B	30	100	7.04
10.	Sulphate as SO ₄	mg/L	4500-SO ₄ ²⁻	200	400	14.4
11.	Fluoride as F	mg/L	4500F D	1	1.5	0.07
12.	Nitrate as NO ₃	mg/L	4500-NO ₃ E	45		BDL
13.	Chloride as Cl	mg/L	4500-Cl B	250	1000	41.88
14.	Iron as Fe	mg/L	3500-Fe B	0.3		0.21
15.	Alkalinity	mg/L	2320 B	200	600	42.0
16.	Chromium Hexavalent	mg/L	3500 Cr B	---		BDL
17.	E-Coli	CFU/100ml	IS 15185:2002	Absent		Absent
18.	Total Coliform	CFU/100ml	IS 15185:2002	Absent		Absent

Note:- BDL- Below Detectable Limit, DL - Desirable Limit, PL - Permissible Limit.

INFERENCE

As per IS 10500:2012(Second Revision),
Report Status: - The measured values for the above parameters for those standards
have been specified were observed to be within the said standard.

End of Report

Phaveena
Authorized Signatory

Test Report

AMBIENT NOISE LEVEL MONITORING REPORT

1. Name of the Project : M/s. ONGC Mangalore Petrochemicals Limited,
Mangalore Spécial Economic Zone,
Permude.Mangalore-574509.
2. Sample Collected by : M/s. Environmental Health and Safety Research &
Development Centre, Bangalore - 560 010.
3. Date of Collection : 19.01.2016
4. Particulars of Sample Collected : Ambient Noise Level collected through
Sound Level Meter C-322
5. Date of Sample Receipt : 21.01.2016
6. Sample Number : EHSRDC/OMPL/N/16/01/ 11768-11771
7. Method Adopted : Instrument Method

Code No	Sample Location	Parameters		Std.
		Day Time dB(A)	Night Time dB(A)	
11768	OMPL East Side Boundary	61.85	54.06	75.0 dB(A) Day
11769	OMPL West Side Boundary	64.72	54.70	
11770	OMPL North Side Boundary	65.29	54.07	70 dB(A) Night
11771	OMPL South Side Boundary	59.45	53.91	

Note :

- Day Time is reckoned between 6 A.M and 10 P.M
- Night Time is reckoned between 10 P.M and 6 A.M
- L_{eq} : It is energy mean of the noise level over a specified period.
- *dB (A) L_{eq} denotes the time weighted average of the level of sound in decibels on scale A which is relatable to human hearing.
- A "decibel" is a unit in which noise is measured.
- "A", in dB (A) L_{eq} , denotes the frequency weighting in the measurement of noise and corresponds to Frequency response characteristics of the human ear.

End of Report

Praveena
Authorized Signatory

Test Report

ANALYSIS REPORT OF EFFLUENT QUALITY

1. Name of the Location : Guard pond Pump Discharge
2. Name of the Project : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Spécial Economic Zone, Permude
Mangalore-574509.
3. Sample Collected by : M/s. Environmental Health and Safety Research &
Development Centre, Bangalore – 560 010.
4. Date of Collection : 16.01.2016
5. Particulars of Sample Collected : ETP Guard Pond Discharge Treated Effluent, Grab Sampling
6. Date of Sample Receipt : 18.01.2016
7. Sample Number : EHSRDC/OMPL/ WW/16/01/11631
8. Analysis started on : 18.01.2016
9. Analysis Completed on : 23.01.2016
10. Page No. : 01 of 2
11. Report to be Sent : 01.02.2016
12. Protocol : APHA, 22nd Edition/IS Method

Sl.No	Parameters	Test Methods	Unit	Result	Tolerance limit
1.	pH	IS 3025(Part-11) :1983	-	8.01	6.0-8.5
2.	Colour*	IS 3025(Part-4) :1983	Hazen	<1	All efforts should be made to remove colour and unpleasant odour as for as practicable.
3.	Odour*	IS 3025(Part-5) :1983	--	Unobjectionable	
4.	Temperature	APHA 2550 B	⁰ C	25	Shall not exceed 5 ⁰ Cabove the receiving water temperature.
5.	Particle Size of suspended solids*	-	-	Passes	(a)Settle able solids Max.850 microns
6.	B.O.D (3 days in 27°C)	5210 B	mg/L	3.0	15
7.	C.O.D	5220 B	mg/L	36.0	125
8.	Total Suspended Solids	2540 D	mg/L	16.0	20
9.	Phosphate as PO ₄	4500- P D	mg/L	0.26	3
10.	Total Kjeldahl Nitrogen	4500- Norg B	mg/L	39.76	40
11.	Oil & Grease	5520 B	mg/L	BDL	5
12.	Total residual chlorine	APHA 4500- Cl	mg/L	BDL	1
13.	Free ammonia*	IS 3025 (part 34)	mg/L	Not Detected	5

haveena
Authorized Signatory

Test Report

Sample Number: EHSRDC/OMPL/ WW/16/01/11631

Page No: 02 of 02

14.	Ammonical Nitrogen	4500- NH ₃ ,B,C	mg/L	7.46	15
15.	Hexavalent Chromium	3500- Cr B	mg/L	BDL	0.1
16.	Sulphide	IS 3025 (part 29): 1986	mg/L	0.6	1.0
17.	Fluoride as F	IS 3025(Part 60): 2008	mg/L	0.61	1.5
18.	Nitrate as NO ₃	IS 3025(Part 34) :1988	mg/L	0.57	20
19.	Iron as Fe	IS 3025(Part 53):2003	mg/L	0.74	3
20.	Mercury as Hg*	IS 3025(Part-48):1994	mg/L	BDL	0.01
21.	Lead as Pb*	IS 3025(Part 47):1994	mg/L	BDL	2
22.	Cadmium as Cd*	IS 3025(Part 41):1992	mg/L	BDL	0.1
23.	Selenium as Se*	IS 3025(Part 56):2003	mg/L	BDL	0.05
24.	Arsenic as As*	IS 3025(Part 37):1988	mg/L	BDL	0.2
25.	Zinc as Zn*	IS 3025(Part 49):1994	mg/L	0.030	5
26.	Copper as Cu*	IS 3025(Part-42):1992	mg/L	0.0119	1
27.	Manganese as Mn*	3111 B	mg/L	BDL	2
28.	Vanadium*	3500 -V	mg/L	BDL	0.1
29.	Nickel as Ni*	IS13428:2005 (Annex L)	mg/L	BDL	1
30.	Total chromium*	IS 13428:2005(Annex J)	mg/L	BDL	2
31.	Benzene*	APHA 6200 B	mg/L	BDL	0.1
32.	Benzo (a) pyrene*	APHA 6440	µg/l	BDL	0.2
33.	Bioassay*	IS 6582	% survivality	100%	90% survival of fish after 96 hrs, in 100% effluent
34.	Phenolic compounds	IS 3025 (part 43):1992	mg/L	BDL	0.35
35.	Cyanide	IS 3025 (Part 27):1986	mg/L	BDL	0.2

*are not accredited by NABL.

Note: BDL: Below Detectable Limit.

INFERENCE	As per Tolerance limit, Report Status: - The measured values for the above parameters for those standards have been specified were observed to be within the said standard.
------------------	--

End of Report

Praveena
Authorized Signatory

Form-1 (Rule 4)

Returns Regarding Water Consumed during the Month of Jan., 2016

Name and address of the Consumer	Purpose for which water consumed	Reading at the beginning of the first day of the calendar month under report	Reading at the end of the last day of the calendar month under report	Quantity of Water Consumed in Kilo Liters	If the meter was out of order, the monthly average consumption of water for the previous 3 months of the working period	Quantity of water qualifying for rebate according to the assessee	Remarks
M/s ONGC Mangalore Petrochemicals Limited, Mangalore Special Economic Zone, Permude, Mangalore -574 509	Industrial cooling, spraying in mine pits or boiler feed						
	Cooling Water	0	94253	94253			
	Boiler Feed Water	0	84665	84665			
	Fire Water						
	Domestic purpose	0	50550	50550			
	Drinking Water & Sanitation						
	Processing whereby water gets polluted and the pollutants are easily bio-degradable			3059			Flow through Running hours of pumps recorded
	Service Water						Subtracting total flow (by running hours of pumps) from BFW & CT consumption
Total Consumption				4558			
				237085			

Signature of the Consumer

Name

Address

Prashanth Kulkarni, Manager(TS)

M/s ONGC Mangalore Petrochemicals Limited, Mangalore Special Economic Zone, Permude, Mangalore -574 509

ONGC Mangalore Petrochemicals Limited

Production Details for January – 2016

Net Naptha Processed – 120864 MT

Sl. No.	Name of the Product	Quantity, MT
1	Paraxylene (Product)	66202
2	Benzene (Co product)	17749





ONGC Mangalore Petrochemicals Limited

(A Subsidiary of Mangalore Refinery & Petrochemicals Ltd.)

Mangalore Special Economic Zone, Permude, Mangaluru - 574 509

CIN : U40107KA2006PLC041258 Website : www.ompl.co.in

Phone : +91-824 2881518 Fax +91-824 2881539

REF: OMPL/PCB/PK/2015-16/

Date: 14/3/2016

To:

The Environmental Officer

Regional Office

KSPCB

Baikampady, Mangalore-11

Dear Sir,

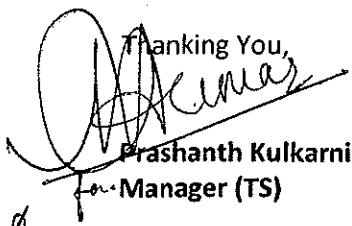
Sub: Submission of Environmental Monitoring Report for the Month of February 2016.
Production Report for February, 2016 & Returns Regarding Water Consumed for the
Month of February 2016

Ref: CFO No. PCB/245/HPI//ONGC/2014-15/593 dated 18th August 2014

With respect to the above subject; we are herewith submitting the following Environmental Monitoring Reports, production reports & Returns Regarding Water Consumed in the Month of February 2016 respectively, enclosed herewith.

1. Ambient Air Quality Monitoring at 5 different locations in and around OMPL, enclosed as Annexure- A
2. Water Analysis Reports at 9 different locations in and around OMPL, as Annexure-B
3. Noise Level Monitoring Report at OMPL, as Annexure-C
4. Treated Effluent Analysis Report – D
5. Returns Regarding Water Consumed, for the Month of February 2016, as Annexure-E
6. Production Report as Annexure-F

Thanking You,


Prashanth Kulkarni
Manager (TS)

CC: Member Secretary, KSPCB, Bangalore
CC: Head (Technical), MSEZ
CC: CEO, OMPL for info

Received


RECEIVED
Karnataka State Pollution Control Board
Plot No. 10 - B, Baikampady Industrial Area
MANGALORE - 575 011

Test Report

ANALYSIS REPORT OF AMBIENT AIR QUALITY

1. Name of the location : OMPL East Side
2. Name of the industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Spécial Economic Zone, Permude
Mangalore-574509.
3. Sample Collected By : M/s. Environmental Health & Safety Research and Development
Centre, Bangalore - 560 010.
4. Particulars of Sample Collected : Ambient Air collected through
Fine Particulate Sampler - APM 550
Respirable Dust Sampler - 460NL,
CO & O₃ Analyzers.
5. Date of Collection : For the Month of February-2016 (Monitored for 24 hours)
6. Sample Number : EHSRDC/OMPL/A/16/02/

PARAMETERS	DATE	WK 54		WK 55		WK 56		WK 57	
		01/02/2016	02/02/2016	08/02/2016	09/02/2016	15/02/2016	16/02/2016	22/02/2016	23/02/2016
	CODE LIMITS	12240	12243	12483	12517	12860	12863	13047	13139
PM ₁₀ (µg/m ³)	100	68	59	54	68	60	53	68	55
PM _{2.5} (µg/m ³)	60	21	17	15	20	19	15	19	16
SO ₂ (µg/m ³)	80	2.44	2.83	2.89	2.81	2.56	2.39	2.22	2.78
NO ₂ (µg/m ³)	80	3.01	3.45	3.87	3.36	3.46	3.78	3.36	3.71
CO (mg/m ³)	4	0.88	0.79	0.85	0.78	0.75	0.68	0.88	0.72
O ₃ (µg/m ³)	180	0.95	0.73	0.81	0.72	0.96	0.76	0.84	0.79

Test Report

PARAMETERS	DATE	WK 54		WK 55		WK 56		WK 57	
		01/02/2016	02/02/2016	08/02/2016	09/02/2016	15/02/2016	16/02/2016	22/02/2016	23/02/2016
	CODE	12240	12243	12483	12517	12860	12863	13047	13139
	LIMITS								
NH ₃ (µg/m ³)	400	1.19	1.83	1.49	1.61	1.48	1.59	1.38	1.64
Lead (µg/m ³)	1	0.025	0.017	0.101	0.023	0.011	0.016	0.0036	0.015
Arsenic (ng/m ³)	6	0.48	0.73	BDL	0.97	0.02	0.65	0.69	0.48
Nickel (ng/m ³)	20	1.42	1.20	2.79	0.71	1.46	1.73	2.24	0.89
Benzene (µg/m ³)	5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
B(a)P (ng/m ³)	1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

Note: BDL: Below Detectable Limit.

End of Report

Test Report

ANALYSIS REPORT OF AMBIENT AIR QUALITY

1. Name of the location : Shantigudda
2. Name of the industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Spécial Economic Zone, Permude
Mangalore-574509.
3. Sample Collected By : M/s. Environmental Health & Safety Research and
Development Centre, Bangalore – 560 010.
4. Particulars of Sample Collected : Ambient Air collected through
Fine Particulate Sampler – APM 550
Respirable Dust Sampler – 460NL,
CO & O₃ Analyzers.
5. Date of Collection : For the Month of February-2016(Monitored for 24 hours)
6. Sample Number : EHSRDC/OMPL/A/16/02/

PARAMETERS	DATE	WK 54		WK 55		WK 56		WK 57	
		01/02/2016	02/02/2016	08/02/2016	09/02/2016	15/02/2016	16/02/2016	22/02/2016	23/02/2016
	CODE	12239	12242	12482	12516	12859	12862	13046	13138
	LIMITS								
PM ₁₀ (µg/m ³)	100	64	67	63	59	56	58	62	60
PM _{2.5} (µg/m ³)	60	23	22	18	16	17	18	15	19
SO ₂ (µg/m ³)	80	2.23	2.40	2.34	2.98	2.74	2.66	2.44	2.37
NO ₂ (µg/m ³)	80	3.41	3.65	3.54	3.47	3.08	3.59	3.45	3.22
CO (mg/m ³)	4	0.90	0.83	0.79	0.69	0.79	0.70	0.82	0.78
O ₃ (µg/m ³)	180	0.93	0.87	0.83	0.80	0.83	0.82	0.81	0.81

Test Report

PARAMETERS	DATE	WK 54		WK 55		WK 56		WK 57	
		01/02/2016	02/02/2016	08/02/2016	09/02/2016	15/02/2016	16/02/2016	22/02/2016	23/02/2016
	CODE LIMITS	12239	12242	12482	12516	12859	12862	13046	13138
NH ₃ (µg/m ³)	400	1.49	1.73	1.63	1.26	1.65	1.38	1.56	1.44
Lead (µg/m ³)	1	0.024	0.003	0.011	0.009	0.005	0.008	0.005	0.015
Arsenic (ng/m ³)	6	BDL	0.22	BDL	0.74	0.69	0.22	0.245	BDL
Nickel (ng/m ³)	20	1.26	2.23	1.83	0.93	1.96	2.72	1.44	0.63
Benzene (µg/m ³)	5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
B(a)P (ng/m ³)	1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

Note: BDL: Below Detectable Limit.

End of Report

Test Report

ANALYSIS REPORT OF AMBIENT AIR QUALITY

1. Name of the location : Tenka- Ekkar
2. Name of the industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Spécial Economic Zone, Permude
Mangalore-574509.
3. Sample Collected By : M/s. Environmental Health & Safety Research and
Development Centre, Bangalore – 560 010.
4. Particulars of Sample Collected : Ambient Air collected through
Fine Particulate Sampler – APM 550
Respirable Dust Sampler – 460NL,
CO & O₃ Analyzers.
- 5 Date of Collection : For the Month of February-2016(Monitored for 24 hours)

PARAMETERS	DATE	WK 54		WK 55		WK 56		WK 57	
		03/02/2016	04/02/2016	10/02/2016	11/02/2016	17/02/2016	18/02/2016	24/02/2016	25/02/2016
	CODE	12291	12329	12580	12689	12953	12955	13154	13156
	LIMITS								
PM ₁₀ (µg/m ³)	100	63	58	61	64	57	59	68	60
PM _{2.5} (µg/m ³)	60	17	17	17	19	15	18	20	16
SO ₂ (µg/m ³)	80	2.94	2.45	2.44	2.70	2.39	2.64	3.02	2.38
NO ₂ (µg/m ³)	80	3.19	3.65	3.44	3.61	3.78	3.74	3.21	3.64
CO (mg/m ³)	4	0.83	0.78	0.78	0.76	0.68	0.72	0.80	0.78
O ₃ (µg/m ³)	180	0.87	0.87	0.81	0.85	0.76	0.84	0.84	0.75

Test Report

PARAMETERS	DATE	WK 54		WK 55		WK 56		WK 57	
		03/02/2016	04/02/2016	10/02/2016	11/02/2016	17/02/2016	18/02/2016	24/02/2016	25/02/2016
	CODE LIMITS	12291	12329	12580	12689	12953	12955	13154	13156
NH ₃ (µg/m ³)	400	1.45	1.64	1.45	1.65	1.59	1.48	1.59	1.63
Lead (µg/m ³)	1	0.010	0.009	0.004	0.003	0.011	0.007	0.031	0.007
Arsenic (ng/m ³)	6	0.98	2.45	0.24	0.24	BDL	BDL	0.73	BDL
Nickel (ng/m ³)	20	0.89	1.45	0.14	1.72	1.62	0.14	1.59	1.68
Benzene (µg/m ³)	5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
B(a)P (ng/m ³)	1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

Note: BDL: Below Detectable Limit.

End of Report

Test Report

ANALYSIS REPORT OF AMBIENT AIR QUALITY

1. Name of the location : Permude
2. Name of the industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Spécial Economic Zone, Permude
Mangalore-574509
3. Sample Collected By : M/s. Environmental Health & Safety Research and
Development Centre, Bangalore - 560 010.
4. Particulars of Sample Collected : Ambient Air collected through
Fine Particulate Sampler - APM 550
Respirable Dust Sampler - 460NL,
CO & O₃ Analyzers.
5. Date of Collection : For the Month of February-2016(Monitored for 24 hours)
6. Sample Number : EHSRDC/OMPL/A/16/02/

PARAMETERS	DATE	WK 54		WK 55		WK 56		WK 57	
		04/02/2016	05/02/2016	11/02/2016	12/02/2016	18/02/2016	19/02/2016	25/02/2016	26/02/2016
	CODE	12328	12398	12688	12690	12954	12985	13155	13255
	LIMITS								
PM ₁₀ (µg/m ³)	100	53	56	66	61	62	61	63	61
PM _{2.5} (µg/m ³)	60	14	18	20	18	19	20	18	18
SO ₂ (µg/m ³)	80	2.18	2.55	2.40	2.84	2.86	2.44	2.65	2.45
NO ₂ (µg/m ³)	80	3.24	3.29	3.38	3.55	3.19	3.29	3.48	3.45
CO (mg/m ³)	4	0.85	0.75	0.79	0.80	0.68	0.77	0.82	0.76
O ₃ (µg/m ³)	180	0.91	0.82	0.88	0.89	0.79	0.82	0.77	0.83

Test Report

PARAMETERS	DATE	WK 54		WK 55		WK 56		WK 57	
		04/02/2016	05/02/2016	11/02/2016	12/02/2016	18/02/2016	19/02/2016	25/02/2016	26/02/2016
	CODE	12328	12398	12688	12690	12954	12985	13155	13255
	LIMITS								
NH ₃ (µg/m ³)	400	1.47	1.32	1.59	1.44	1.56	1.48	1.38	1.24
Lead (µg/m ³)	1	0.038	0.014	0.004	0.007	0.003	0.013	0.020	0.009
Arsenic (ng/m ³)	6	BDL	0.98	1.22	0.49	0.49	BDL	BDL	0.50
Nickel (ng/m ³)	20	1.44	1.62	1.72	1.97	0.48	1.72	0.51	0.76
Benzene (µg/m ³)	5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
B(a)P (ng/m ³)	1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

Note: BDL: Below Detectable Limit.

End of Report

Test Report

ANALYSIS REPORT OF AMBIENT AIR QUALITY

1. Name of the location : OMPL West Side
2. Name of the industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Spécial Economic Zone, Permude
Mangalore-574509
3. Sample Collected By : M/s. Environmental Health & Safety Research and
Development Centre, Bangalore - 560 010.
4. Particulars of Sample Collected : Ambient Air collected through
Fine Particulate Sampler - APM 550
Respirable Dust Sampler - 460NL,
CO & O₃ Analyzers.
5. Date of Collection : For the Month of February-2016(Monitored for 24 hours)
6. Sample Number : EHSRDC/OMPL/A/16/02/

PARAMETERS	DATE	WK 54		WK 55		WK 56		WK 57	
		01/02/2016	02/02/2016	08/02/2016	09/02/2016	15/02/2016	16/02/2016	22/02/2016	23/02/2016
	CODE LIMITS	12238	12241	12481	12515	12858	12861	13045	13137
PM ₁₀ (µg/m ³)	100	70	69	58	60	68	55	66	58
PM _{2.5} (µg/m ³)	60	22	24	16	17	22	16	17	18
SO ₂ (µg/m ³)	80	2.84	2.15	2.78	2.52	2.30	2.88	3.48	2.82
NO ₂ (µg/m ³)	80	3.95	3.20	3.24	3.64	3.22	3.11	3.54	3.42
CO (mg/m ³)	4	0.74	0.73	0.80	0.75	0.80	0.69	0.80	0.80
O ₃ (µg/m ³)	180	0.82	0.78	0.81	0.84	0.72	0.80	0.77	0.86

Test Report

PARAMETERS	DATE	WK 54		WK 55		WK 56		WK 57	
		01/02/2016	02/02/2016	08/02/2016	09/02/2016	15/02/2016	16/02/2016	22/02/2016	23/02/2016
	CODE	12238	12241	12481	12515	12858	12861	13045	13137
	LIMITS								
NH ₃ (µg/m ³)	400	1.65	1.63	1.48	1.59	1.24	1.76	1.28	1.23
Lead (µg/m ³)	1	0.035	0.095	0.087	0.030	0.088	0.117	0.093	0.115
Arsenic (ng/m ³)	6	1.22	BDL	BDL	1.93	BDL	BDL	BDL	BDL
Nickel (ng/m ³)	20	0.89	1.29	1.03	0.29	2.66	2.44	1.82	2.31
Benzene (µg/m ³)	5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
B(a)P (ng/m ³)	1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

Note: BDL: Below Detectable Limit.

End of Report

Test Report

ANALYSIS REPORT OF FRESH WATER QUALITY

1. Name of the Location : GW1: Narayana Guru Community Hall, Permude
2. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Special Economic Zone, Permude
Mangalore-574509.
3. Sample Collected By : M/s. Environmental Health and Safety Research and Development
Centre, Bangalore - 560 010.
4. Date of Collection : 15.02.2016
5. Particulars of Sample Collected : Bore well water, Grab Sampling
6. Date of Sample Receipt : 16.02.2016
7. Sample Number : EHSRDC/OMPL/W/16/02/12718
8. Protocol : APHA, 22nd Edition/IS: Standard

Sl.No	PARAMETERS	UNIT	Test Methods	Std. IS 10500:2012 (Second Revision)		Code
				DL	PL	
1.	pH	--	4500H+ B	6.5-8.5		GW1 12718
2.	Colour	Hazen	IS 3025(Part-4):1983	5	15	6.6
3.	Odour	--	IS 3025(Part-5):1983	Unobjectionable		Unobjectionable
4.	Taste	--	IS 3025(Part-8):1984	Agreeable		Agreeable
5.	Turbidity	NTU	2130 B	1	5	3.2
6.	Total Dissolved Solids	mg/L	2540 C	500	2000	163
7.	Total Hardness	mg/L	2340 C	200	600	80.0
8.	Calcium as Ca	mg/L	3500-Ca	75	200	16.0
9.	Magnesium as Mg	mg/L	3500 Mg B	30	100	9.72
10.	Sulphate as SO ₄	mg/L	4500-SO ₄ ²⁻	200	400	6.46
11.	Fluoride as F	mg/L	4500F D	1	1.5	0.24
12.	Nitrate as NO ₃	mg/L	4500-NO ₃ E	45		0.69
13.	Chloride as Cl	mg/L	4500-Cl B	250	1000	13.79
14.	Iron as Fe	mg/L	3500-Fe B	0.3		0.27
15.	Alkalinity	mg/L	2320 B	200	600	80.0
16.	Chromium Hexavalent	mg/L	3500 Cr B	---		BDL
17.	E-Coli	CFU/100ml	IS 15185:2002	Absent		Absent
18.	Total Coliform	CFU/100ml	IS 15185:2002	Absent		Absent

Note:- BDL- Below Detectable Limit, DL - Desirable Limit, PL - Permissible Limit.

INFERENCE

As per IS 10500:2012(Second Revision),
Report Status: - The measured values for the above parameters for those standards
have been specified were observed to be within the said standard.

End of Report

Authorized Signatory

See NOTE overleaf

Test Report

ANALYSIS REPORT OF FRESH WATER QUALITY

1. Name of the Location : GW2: Gagnet Labor Colony
2. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Spécial Economic Zone, Permude
Mangalore-574509.
3. Sample Collected By : M/s. Environmental Health and Safety Research and Development
Centre, Bangalore - 560 010.
4. Date of Collection : 15.02.2016
5. Particulars of Sample Collected : Bore well water, Grab Sampling
6. Date of Sample Receipt : 16.02.2016
7. Sample Number : EHSRDC/OMPL/W/16/02/12719
8. Protocol : APHA, 22nd Edition/IS: Standard

Sl.No	PARAMETERS	UNIT	Test Methods	Std. IS 10500:2012 (Second Revision)		Code
				DL	PL	
						GW2
						12719
1.	pH	--	4500H ⁺ B	6.5-8.5		7.0
2.	Colour	Hazen	IS 3025(Part-4):1983	5	15	<1
3.	Odour	--	IS 3025(Part-5):1983	Unobjectionable		Unobjectionable
4.	Taste	--	IS 3025(Part-8):1984	Agreeable		Agreeable
5.	Turbidity	NTU	2130 B	1	5	2.9
6.	Total Dissolved Solids	mg/L	2540 C	500	2000	191
7.	Total Hardness	mg/L	2340 C	200	600	124
8.	Calcium as Ca	mg/L	3500-Ca	75	200	24.0
9.	Magnesium as Mg	mg/L	3500 Mg B	30	100	15.55
10.	Sulphate as SO ₄	mg/L	4500-SO ₄ ²⁻	200	400	12.36
11.	Fluoride as F	mg/L	4500F D	1	1.5	BDL
12.	Nitrate as NO ₃	mg/L	4500-NO ₃ E	45		0.48
13.	Chloride as Cl	mg/L	4500-Cl B	250	1000	13.79
14.	Iron as Fe	mg/L	3500-Fe B	0.3		0.24
15.	Alkalinity	mg/L	2320 B	200	600	94.0
16.	Chromium Hexavalent	mg/L	3500 Cr B	---		BDL
17.	E-Coli	CFU/100ml	IS 15185:2002	Absent		Absent
18.	Total Coliform	CFU/100ml	IS 15185:2002	Absent		Absent

Note:- BDL- Below Detectable Limit, DL - Desirable Limit, PL - Permissible Limit.

INFERENCE	As per IS 10500:2012(Second Revision), Report Status: - The measured values for the above parameters for those standards have been specified were observed to be within the said standard.
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End of Report

Authorized Signatory

Test Report

ANALYSIS REPORT OF FRESH WATER QUALITY

1. Name of the Location : OW1: Tenka-Ekkar
2. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Special Economic Zone, Permude
Mangalore-574509.
3. Sample Collected By : M/s. Environmental Health and Safety Research and
Development Centre, Bangalore - 560 010.
4. Date of Collection : 15.02.2016
5. Particulars of Sample Collected : Open well water, Grab Sampling
6. Date of Sample Receipt : 16.02.2016
7. Sample Number : EHSRDC/OMPL/W/16/02/12720
8. Protocol : APHA, 22nd Edition/IS: Standard

Sl.No	PARAMETERS	UNIT	Test Methods	Std. IS 10500:2012 (Second Revision)		Code
				DL	PL	
						OW1 12720
1.	pH	--	4500H+ B	6.5-8.5		6.7
2.	Colour	Hazen	IS 3025(Part-4):1983	5	15	<1
3.	Odour	--	IS 3025(Part-5):1983	Unobjectionable		Unobjectionable
4.	Taste	--	IS 3025(Part-8):1984	Agreeable		Agreeable
5.	Turbidity	NTU	2130 B	1	5	1.07
6.	Total Dissolved Solids	mg/L	2540 C	500	2000	157
7.	Total Hardness	mg/L	2340 C	200	600	88.0
8.	Calcium as Ca	mg/L	3500-Ca	75	200	18.0
9.	Magnesium as Mg	mg/L	3500 Mg B	30	100	10.44
10.	Sulphate as SO ₄	mg/L	4500-SO ₄ ²⁻	200	400	5.99
11.	Fluoride as F	mg/L	4500F D	1	1.5	0.28
12.	Nitrate as NO ₃	mg/L	4500-NO ₃ E	45		0.48
13.	Chloride as Cl	mg/L	4500-Cl B	250	1000	15.76
14.	Iron as Fe	mg/L	3500-Fe B	0.3		0.05
15.	Alkalinity	mg/L	2320 B	200	600	57.0
16.	Chromium Hexavalent	mg/L	3500 Cr B	---		BDL
17.	E-Coli	CFU/100ml	IS 15185:2002	Absent		Absent
18.	Total Coliform	CFU/100ml	IS 15185:2002	Absent		Absent

Note:- BDL- Below Detectable Limit, DL - Desirable Limit, PL - Permissible Limit.

INFERENCE

As per IS 10500:2012(Second Revision),
Report Status:- The measured values for the above parameters for those standards
have been specified were observed to be within the said standard.

End of Report

Authorized Signatory

Test Report

ANALYSIS REPORT OF FRESH WATER QUALITY

1. Name of the Location : OW3: Shanthiguda Village
2. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Special Economic Zone, Perumde
Mangalore-574509.
3. Sample Collected By : M/s. Environmental Health and Safety Research and
Development Centre, Bangalore - 560 010.
4. Date of Collection : 15.02.2016
5. Particulars of Sample Collected : Open well water, Grab Sampling
6. Date of Sample Receipt : 16.02.2016
7. Sample Number : EHSRDC/OMPL/W/16/02/12721
8. Protocol : APHA, 22nd Edition/IS: Standard

Sl.No	PARAMETERS	UNIT	Test Methods	Std. IS 10500:2012 (Second Revision)		Code
				DL	PL	
						OW2 12721
1.	pH	--	4500H ⁺ B	6.5-8.5		7.6
2.	Colour	Hazen	IS 3025(Part-4):1983	5	15	<1
3.	Odour	--	IS 3025(Part-5):1983	Unobjectionable		Unobjectionable
4.	Taste	--	IS 3025(Part-8):1984	Agreeable		Agreeable
5.	Turbidity	NTU	2130 B	1	5	0.5
6.	Total Dissolved Solids	mg/L	2540 C	500	2000	53.0
7.	Total Hardness	mg/L	2340 C	200	600	30
8.	Calcium as Ca	mg/L	3500-Ca	75	200	6.4
9.	Magnesium as Mg	mg/L	3500 Mg B	30	100	3.4
10.	Sulphate as SO ₄	mg/L	4500-SO ₄ ²⁻	200	400	4.86
11.	Fluoride as F	mg/L	4500F D	1	1.5	0.26
12.	Nitrate as NO ₃	mg/L	4500-NO ₃ E	45		0.82
13.	Chloride as Cl	mg/L	4500-Cl B	250	1000	15.76
14.	Iron as Fe	mg/L	3500-Fe B	0.3		0.14
15.	Alkalinity	mg/L	2320 B	200	600	24.0
16.	Chromium Hexavalent	mg/L	3500 Cr B	---		BDL
17.	E-Coli	CFU/100ml	IS 15185:2002	Absent		Absent
18.	Total Coliform	CFU/100ml	IS 15185:2002	Absent		Absent

Note:- BDL- Below Detectable Limit, DL - Desirable Limit, PL - Permissible Limit.

INFERENCE	As per IS 10500:2012(Second Revision), Report Status: - The measured values for the above parameters for those standards have been specified were observed to be within the said standard.
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End of Report

Authorized Signatory

Test Report

ANALYSIS REPORT OF FRESH WATER QUALITY

1. Name of the Location : SW1: Near Flare Area, OMPL
2. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Spécial Economic Zone, Permude
Mangalore-574509.
3. Sample Collected By : M/s. Environmental Health and Safety Research and Development
Centre, Bangalore - 560 010.
4. Date of Collection : 15.02.2016
5. Particulars of Sample Collected : Surface outlet water, Grab Sampling
6. Date of Sample Receipt : 16.02.2016
7. Sample Number : EHSRDC/OMPL/W/16/02/12722
8. Protocol : APHA, 22nd Edition/IS: Standard

Sl.No	PARAMETERS	UNIT	Test Methods	Std. IS 10500:2012 (Second Revision)		Code
				DL	PL	SW1 12722
1.	pH	--	4500H ⁺ B	6.5-8.5		7.6
2.	Colour	Hazen	IS 3025(Part-4):1983	5	15	<1
3.	Odour	--	IS 3025(Part-5):1983	Unobjectionable		Unobjectionable
4.	Taste	--	IS 3025(Part-8):1984	Agreeable		Agreeable
5.	Turbidity	NTU	2130 B	1	5	3.8
6.	Total Dissolved Solids	mg/L	2540 C	500	2000	143
7.	Total Hardness	mg/L	2340 C	200	600	70.0
8.	Calcium as Ca	mg/L	3500-Ca	75	200	14.4
9.	Magnesium as Mg	mg/L	3500 Mg B	30	100	8.26
10.	Sulphate as SO ₄	mg/L	4500-SO ₄ ²⁻	200	400	8.14
11.	Fluoride as F	mg/L	4500F D	1	1.5	BDL
12.	Nitrate as NO ₃	mg/L	4500-NO ₃ E	45		0.24
13.	Chloride as Cl	mg/L	4500-Cl B	250	1000	10.34
14.	Iron as Fe	mg/L	3500-Fe B	0.3		0.17
15.	Alkalinity	mg/L	2320 B	200	600	49.0
16.	Chromium Hexavalent	mg/L	3500 Cr B	---		BDL
17.	E-Coli	CFU/100ml	IS 15185:2002	Absent		Absent
18.	Total Coliform	CFU/100ml	IS 15185:2002	Absent		Absent

Note:- BDL- Below Detectable Limit, DL - Desirable Limit, PL - Permissible Limit.

INFERENCE

As per IS 10500:2012(Second Revision),
Report Status: - The measured values for the above parameters for those standards
have been specified were observed to be within the said standard.

***End of Report**

Authorized Signatory

Test Report

ANALYSIS REPORT OF FRESH WATER QUALITY

1. Name of the Location : SW2 : Near Central Warehouse, OMPL
2. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Special Economic Zone, Permude
Mangalore-574509.
3. Sample Collected By : M/s. Environmental Health and Safety Research and
Development Centre, Bangalore - 560 010.
4. Date of Collection : 15.02.2016
5. Particulars of Sample Collected : Surface inlet water, Grab Sampling
6. Date of Sample Receipt : 16.02.2016
7. Sample Number : EHSRDC/OMPL/W/16/02/12723
8. Protocol : APHA, 22nd Edition/IS: Standard

Sl.No	PARAMETERS	UNIT	Test Methods	Std. IS 10500:2012 (Second Revision)		Code
				DL	PL	SW2
						12723
1.	pH	--	4500H ⁺ B	6.5-8.5		7.8
2.	Colour	Hazen	IS 3025(Part-4):1983	5	15	<1
3.	Odour	--	IS 3025(Part-5):1983	Unobjectionable		Unobjectionable
4.	Taste	--	IS 3025(Part-8):1984	Agreeable		Agreeable
5.	Turbidity	NTU	2130 B	1	5	3.1
6.	Total Dissolved Solids	mg/L	2540 C	500	2000	150
7.	Total Hardness	mg/L	2340 C	200	600	75.0
8.	Calcium as Ca	mg/L	3500-Ca	75	200	15.2
9.	Magnesium as Mg	mg/L	3500 Mg B	30	100	8.99
10.	Sulphate as SO ₄	mg/L	4500-SO ₄ ²⁻	200	400	12.82
11.	Fluoride as F	mg/L	4500F D	1	1.5	BDL
12.	Nitrate as NO ₃	mg/L	4500-NO ₃ E	45		0.94
13.	Chloride as Cl	mg/L	4500-Cl B	250	1000	47.3
14.	Iron as Fe	mg/L	3500-Fe B	0.3		0.22
15.	Alkalinity	mg/L	2320 B	200	600	48.0
16.	Chromium Hexavalent	mg/L	3500 Cr B	---		BDL
17.	E-Coli	CFU/100ml	IS 15185:2002	Absent		Absent
18.	Total Coliform	CFU/100ml	IS 15185:2002	Absent		Absent

Note:- BDL- Below Detectable Limit, DL - Desirable Limit, PL - Permissible Limit.

INFERENCE

As per IS 10500:2012(Second Revision),
Report Status: - The measured values for the above parameters for those standards
have been specified were observed to be within the said standard.

End of Report

Authorized Signatory

Test Report

ANALYSIS REPORT OF FRESH WATER QUALITY

1. Name of the Location : GW3: L&T New Labor Colony
2. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Spécial Economic Zone, Permude
Mangalore-574509.
3. Sample Collected By : M/s. Environmental Health and Safety Research and Development
Centre, Bangalore - 560 010.
4. Date of Collection : 15.02.2016
5. Particulars of Sample Collected : Bore well water ,Grab Sampling
6. Date of Sample Receipt : 16.02.2016
7. Sample Number : BHSRDC/OMPL/W/16/02/12724
8. Protocol : APHA, 22nd Edition/IS: Standard

Sl.No	PARAMETERS	UNIT	Test Methods	Std. IS 10500:2012 (Second Revision)		Code
				DL	PL	GW3
						12724
1.	pH	--	4500H* B	6.5-8.5		6.9
2.	Colour	Hazen	IS 3025(Part-4):1983	5	15	<1
3.	Odour	--	IS 3025(Part-5):1983	Unobjectionable		Unobjectionable
4.	Taste	--	IS 3025(Part-8):1984	Agreeable		Agreeable
5.	Turbidity	NTU	2130 B	1	5	3.0
6.	Total Dissolved Solids	mg/L	2540 C	500	2000	227
7.	Total Hardness	mg/L	2340 C	200	600	86.0
8.	Calcium as Ca	mg/L	3500-Ca	75	200	16.8
9.	Magnesium as Mg	mg/L	3500 Mg B	30	100	10.69
10.	Sulphate as SO ₄	mg/L	4500-SO ₄ ²⁻	200	400	31.27
11.	Fluoride as F	mg/L	4500F D	1	1.5	BDL
12.	Nitrate as NO ₃	mg/L	4500-NO ₃ E	45		0.21
13.	Chloride as Cl	mg/L	4500-Cl B	250	1000	11.82
14.	Iron as Fe	mg/L	3500-Fe B	0.3		0.21
15.	Alkalinity	mg/L	2320 B	200	600	86.0
16.	Chromium Hexavalent	mg/L	3500 Cr B	---		BDL
17.	E-Coli	CFU/100ml	IS 15185:2002	Absent		Absent
18.	Total Coliform	CFU/100ml	IS 15185:2002	Absent		Absent

Note:- BDL- Below Detectable Limit, DL - Desirable Limit, PL - Permissible Limit.

INFERENCE

As per IS 10500:2012(Second Revision),
Report Status:- The measured values for the above parameters for those standards
have been specified were observed to be within the said standard.

End of Report


Authorized Signatory

Test Report

ANALYSIS REPORT OF FRESH WATER QUALITY

1. Name of the Location : OW3: Permude Village
2. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Spécial Economic Zone, Permude
Mangalore-574509
3. Sample Collected By : M/s. Environmental Health and Safety Research and
Development Centre, Bangalore - 560 010.
4. Date of Collection : 15.02.2016
5. Particulars of Sample Collected : Open well water, Grab Sampling
6. Date of Sample Receipt : 16.02.2016
7. Sample Number : EHSRDC/OMPL/W/16/02/12725
8. Protocol : APHA, 22nd Edition/IS: Standard

Sl.No	PARAMETERS	UNIT	Test Methods	Std. IS 10500:2012 (Second Revision)		Code
				DL	PL	OW3
						12725
1.	pH	--	4500H+ B	6.5-8.5		7.10
2.	Colour	Hazen	IS 3025(Part-4):1983	5	15	<1
3.	Odour	--	IS 3025(Part-5):1983	Unobjectionable		Unobjectionable
4.	Taste	--	IS 3025(Part-8):1984	Agreeable		Agreeable
5.	Turbidity	NTU	2130 B	1	5	0.5
6.	Total Dissolved Solids	mg/L	2540 C	500	2000	115
7.	Total Hardness	mg/L	2340 C	200	600	64.0
8.	Calcium as Ca	mg/L	3500-Ca	75	200	14.8
9.	Magnesium as Mg	mg/L	3500 Mg B	30	100	6.56
10.	Sulphate as SO ₄	mg/L	4500-SO ₄ ²⁻	200	400	6.18
11.	Fluoride as F	mg/L	4500F D	1	1.5	0.78
12.	Nitrate as NO ₃	mg/L	4500-NO ₃ E	45		0.27
13.	Chloride as Cl	mg/L	4500-Cl B	250	1000	21.68
14.	Iron as Fe	mg/L	3500-Fe B	0.3		0.18
15.	Alkalinity	mg/L	2320 B	200	600	62.0
16.	Chromium Hexavalent	mg/L	3500 Cr B	---		BDL
17.	E-Coli	CFU/100ml	IS 15185:2002	Absent		Absent
18.	Total Coliform	CFU/100ml	IS 15185:2002	Absent		Absent

Note:- BDL- Below Detectable Limit, DL - Desirable Limit, PL - Permissible Limit.

INFERENCE

As per IS 10500:2012(Second Revision),
Report Status: - The measured values for the above parameters for those standards
have been specified were observed to be within the said standard.

End of Report

Authorized Signatory

Test Report

ANALYSIS REPORT OF FRESH WATER QUALITY

1. Name of the Location : GW4: OMPL (Near ETP)
2. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Special Economic Zone, Permude
Mangalore-574509
3. Sample Collected By : M/s. Environmental Health and Safety Research and
Development Centre, Bangalore - 560 010.
4. Date of Collection : 15.02.2016
5. Particulars of Sample Collected : Bore well water, Grab Sampling
6. Date of Sample Receipt : 16.02.2016
7. Sample Number : EHSRDC/OMPL/W/16/02/12726
8. Protocol : APHA, 22nd Edition/IS: Standard

Sl.No	PARAMETERS	UNIT	Test Methods	Std. IS 10500:2012 (Second Revision)		Code
				DL	PL	GW4 12726
1.	pH	--	4500H+ B	6.5-8.5		7.2
2.	Colour	Hazen	IS 3025(Part-4):1983	5	15	<1
3.	Odour	--	IS 3025(Part-5):1983	Unobjectionable		Unobjectionable
4.	Taste	--	IS 3025(Part-8):1984	Agreeable		Agreeable
5.	Turbidity	NTU	2130 B	1	5	1.8
6.	Total Dissolved Solids	mg/L	2540 C	500	2000	134
7.	Total Hardness	mg/L	2340 C	200	600	75.0
8.	Calcium as Ca	mg/L	3500-Ca	75	200	16.0
9.	Magnesium as Mg	mg/L	3500 Mg B	30	100	8.50
10.	Sulphate as SO ₄	mg/L	4500-SO ₄ ²⁻	200	400	42.98
11.	Fluoride as F	mg/L	4500F D	1	1.5	0.62
12.	Nitrate as NO ₃	mg/L	4500-NO ₃ E	45		1.06
13.	Chloride as Cl	mg/L	4500-Cl B	250	1000	39.42
14.	Iron as Fe	mg/L	3500-Fe B	0.3		0.26
15.	Alkalinity	mg/L	2320 B	200	600	50.0
16.	Chromium Hexavalent	mg/L	3500 Cr B	---		BDL
17.	E-Coli	CFU/100ml	IS 15185:2002	Absent		Absent
18.	Total Coliform	CFU/100ml	IS 15185:2002	Absent		Absent

Note:- BDL- Below Detectable Limit, DL - Desirable Limit, PL - Permissible Limit.

INFERENCE

As per IS 10500:2012(Second Revision),
Report Status: - The measured values for the above parameters for those standards
have been specified were observed to be within the said standard.

End of Report


Authorized Signatory

Test Report

AMBIENT NOISE LEVEL MONITORING REPORT

1. Name of the Project : M/s. ONGC Mangalore Petrochemicals Limited,
Mangalore Spécial Economic Zone,
Permude.Mangalore-574509.
2. Sample Collected by : M/s. Environmental Health and Safety Research &
Development Centre, Bangalore - 560 010.
3. Date of Collection : 20.02.2016
4. Particulars of Sample Collected : Ambient Noise Level collected through
Sound Level Meter C-322
5. Date of Sample Receipt : 22.02.2016
6. Sample Number : EHSRDC/OMPL/N/16/02/ 12986-12989
7. Method Adopted : Instrument Method

Code No	Sample Location	Parameters		Std.
		Day Time dB(A)	Night Time dB(A)	
12986	OMPL East Side Boundary	69.72	52.93	75.0 dB(A) Day
12987	OMPL West Side Boundary	68.59	54.70	
12988	OMPL North Side Boundary	68.86	53.82	70 dB(A) Night
12989	OMPL South Side Boundary	67.25	54.62	

Note :

- Day Time is reckoned between 6 A.M and 10 P.M
- Night Time is reckoned between 10 P.M and 6 A.M
- L_{eq} It is energy mean of the noise level over a specified period.
- *dB (A) L_{eq} denotes the time weighted average of the level of sound in decibels on scale A which is relatable to human hearing.
- A "decibel" is a unit in which noise is measured.
- "A", in dB (A) L_{eq} , denotes the frequency weighting in the measurement of noise and corresponds to Frequency response characteristics of the human ear.

End of Report


Authorized Signatory

Test Report

ANALYSIS REPORT OF EFFLUENT QUALITY

1. Name of the Location : Guard Pond Pump Discharge
2. Name of the Project : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Spécial Economic Zone, Permude
Mangalore-574509.
3. Sample Collected by : M/s. Environmental Health and Safety Research &
Development Centre, Bangalore - 560 010.
4. Date of Collection : 15.02.2016
5. Particulars of Sample Collected : ETP Guard Pond Discharge Treated Effluent, Grab Sampling
6. Date of Sample Receipt : 16.02.2016
7. Sample Number : EHSRDC/OMPL/ WW/16/02/12727
8. Analysis started on : 16.02.2016
9. Analysis Completed on : 29.02.2016
10. Page No. : 01 of 2
11. Report to be Sent : 29.02.2016
12. Protocol : APHA, 22nd Edition/IS Method

Sl.No	Parameters	Test Methods	Unit	Result	Tolerance limit
1.	pH	IS 3025(Part-11) :1983	-	6.5	6.0-8.5
2.	Colour*	IS 3025(Part-4) :1983	Hazen	<1	All efforts should be made to remove colour and unpleasant odour as for as practicable.
3.	Odour*	IS 3025(Part-5) :1983	--	Unobjectionable	
4.	Temperature	APHA 2550 B	°C	25	Shall not exceed 5°C above the receiving water temperature.
5.	Particle Size of suspended solids*	-	-	Passes	(a)Settle able solids Max.850 microns
6.	B.O.D (3 days in 27°C)	5210 B	mg/L	3.0	15
7.	C.O.D	5220 B	mg/L	24.0	125
8.	Total Suspended Solids	2540 D	mg/L	13.0	20
9.	Phosphate as PO ₄	4500- P D	mg/L	0.29	3
10.	Total Kjeldahl Nitrogen	4500- Norg B	mg/L	17.92	40
11.	Oil & Grease	5520 B	mg/L	BDL	5
12.	Total Residual Chlorine	4500- Cl	mg/L	BDL	1
13.	Free ammonia*	IS 3025 (part 34)	mg/L	Not Detected	5

Signature
Authorized Signatory

Test Report

Sample Number: EHSRDC/OMPL/ WW/16/02/12727

Page No: 02 of 02

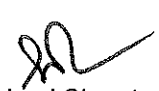
14.	Ammonical Nitrogen	4500- NH ₃ ,B,C	mg/L	7.0	15
15.	Hexavalent Chromium	3500- Cr B	mg/L	BDL	0.1
16.	Sulphide	IS 3025 (part 29): 1986	mg/L	0.8	1.0
17.	Fluoride as F	IS 3025(Part 60): 2008	mg/L	0.32	1.5
18.	Nitrate as NO ₃	IS 3025(Part 34) :1988	mg/L	BDL	20
19.	Iron as Fe	IS 3025(Part 53):2003	mg/L	2.28	3
20.	Mercury as Hg*	IS 3025(Part-48):1994	mg/L	BDL	0.01
21.	Lead as Pb*	IS 3025(Part 47):1994	mg/L	0.002	2
22.	Cadmium as Cd*	IS 3025(Part 41):1992	mg/L	0.001	0.1
23.	Selenium as Se*	IS 3025(Part 56):2003	mg/L	BDL	0.05
24.	Arsenic as As*	IS 3025(Part 37):1988	mg/L	BDL	0.2
25.	Zinc as Zn*	IS 3025(Part 49):1994	mg/L	0.051	5
26.	Copper as Cu*	IS 3025(Part-42):1992	mg/L	0.003	1
27.	Manganese as Mn*	3111 B	mg/L	0.049	2
28.	Vanadium*	3500 -V	mg/L	BDL	0.1
29.	Nickel as Ni*	IS13428:2005 (Annex L)	mg/L	0.001	1
30.	Total chromium*	IS 13428:2005(Annex J)	mg/L	0.005	2
31.	Benzene*	APHA 6200 B	mg/L	BDL	0.1
32.	Benzo (a) pyrene*	APHA 6440	µg/l	BDL	0.2
33.	Bioassay*	IS 6582	% survivality	100%	90% survival of fish after 96 hrs, in100% effluent
34.	Phenolic compounds	IS 3025 (part 43):1992	mg/L	BDL	0.35
35.	Cyanide	IS 3025 (Part 27):1986	mg/L	BDL	0.2

*are not accredited by NABL.

Note: BDL: Below Detectable Limit.

INFERENCE	As per Tolerance limit, Report Status: - The measured values for the above parameters for those standards have been specified were observed to be within the said standard.
------------------	--

End of Report


Authorized Signatory

Annexure E

Form-1 (Rule 4)
Returns Regarding Water Consumed during the Month of Feb., 2016

Name and address of the Consumer	Purpose for which water consumed	Reading at the beginning of the first day of the calendar month under report	Reading at the end of the last day of the calendar month under report	Quantity of Water Consumed in Kilo Liters	If the meter was out of order, the monthly average consumption of water for the previous 3 months of the working period	Quantity of water qualifying for rebate according to the assessee	Remarks
M/s ONGC Mangalore Petrochemicals Limited, Mangalore Special Economic Zone, Permude, Mangalore -574 509	Industrial cooling, spraying in mine pits or boiler feed						
	Cooling Water	0	88337	88337			
	Boiler Feed Water	0	79731	79731			
	Fire Water	0	50505	50505			
	Domestic purpose						
	Drinking Water & Sanitation			2651			Flow through Running hours of pumps recorded
	Processing whereby water gets polluted and the pollutants are easily bio-degradable						
	Service Water			3214			Subtracting total flow (by running hours of pumps) from BFW & CT consumption
Total Consumption				224438			

Signature of the Consumer

Name

Address

Prashanth Kulkarni, Manager(TS)

M/s ONGC Mangalore Petrochemicals Limited, Mangalore Special Economic Zone, Permude, Mangalore -574 509

SD

Annexure F

ONGC Mangalore Petrochemicals Limited

Production Details for February – 2016

Net Naptha Processed – 82025 MT

Sl. No.	Name of the Product	Quantity, MT
1	Paraxylene (Product)	46981.09
2	Benzene (Co product)	14304.326





ONGC Mangalore Petrochemicals Limited

(A Subsidiary of Mangalore Refinery & Petrochemicals Ltd.)

Mangalore Special Economic Zone, Permude, Mangaluru - 574 509

CIN : U40107KA2006PLC041258 Website : www.ompl.co.in

Phone : +91-824 2881518 Fax +91-824 2881539

69
615

REF: OMPL/PCB/PK/2016-17/

To:

The Environmental Officer

Regional Office

KSPCB

Baikampady, Mangalore-11

Genl. for na Vinay Kumar Chetty
29/4/16
Date: 14/4/2016
MANGALORE SEZ LTD.
RECEIVED
29 APR 2016
10263/16
MANGALORE-575 006

Dear Sir,

Sub: Submission of Environmental Monitoring Report for the Month of March 2016,
Production Report for March, 2016 & Returns Regarding Water Consumed for the
Month of March 2016

Ref: CFO No. PCB/245/HPI//ONGC/2014-15/593 dated 18th August 2014

With respect to the above subject; we are herewith submitting the following Environmental Monitoring Reports, production reports & Returns Regarding Water Consumed in the Month of March 2016 respectively, enclosed herewith.

1. Ambient Air Quality Monitoring at 5 different locations in and around OMPL, enclosed as Annexure- A
2. Water Analysis Reports at 9 different locations in and around OMPL, as Annexure-B
3. Noise Level Monitoring Report at OMPL, as Annexure-C
4. Stack Monitoring Report as Annexure-D
5. Treated Effluent Analysis Report – E
6. Returns Regarding Water Consumed, for the Month of March 2016, as Annexure-F
7. Production Report as Annexure-G

Thanking You,

Prashanth Kulkarni
Manager (TS)

CC: Member Secretary, KSPCB, Bangalore

CC: Head (Technical), MSEZ

CC: CEO, OMPL for info

Test Report

ANALYSIS REPORT OF AMBIENT AIR QUALITY

1. Name of the location : OMPL East Side
2. Name of the industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Spécial Economic Zone, Permude
Mangalore-574509.
3. Sample Collected By : M/s. Environmental Health & Safety Research and
Development Centre, Bangalore - 560 010.
4. Particulars of Sample Collected : Ambient Air collected through
Fine Particulate Sampler - APM 550
Respirable Dust Sampler - 460NL,
CO & O₃ Analyzers.
5. Date of Collection : For the Month of March-2016 (Monitored for 24 hours)
6. Sample Number : EHSRDC/OMPL/A/16/03/

PARAMETERS	DATE	WK 58		WK 59		WK 60		WK 61	
		01/03/2016	02/03/2016	07/03/2016	08/03/2016	14/03/2016	15/03/2016	21/03/2016	22/03/2016
	CODE	13350	13409	13709	13817	14154	14170	14380	14539
	LIMITS								
PM ₁₀ (µg/m ³)	100	63	62	59	67	63	64	62	58
PM _{2.5} (µg/m ³)	60	17	19	16	18	18	20	17	16
SO ₂ (µg/m ³)	80	2.65	2.57	2.58	2.57	2.34	2.57	2.19	2.33
NO ₂ (µg/m ³)	80	3.36	3.47	3.06	3.82	3.67	3.42	3.14	3.39
CO (mg/m ³)	4	0.78	0.81	0.72	0.81	0.84	0.69	0.75	0.75
O ₃ (µg/m ³)	180	0.83	0.84	0.80	0.83	0.96	0.78	0.86	0.84

Test Report

PARAMETERS	DATE	WK 58		WK 59		WK 60		WK 61	
		01/03/2016	02/03/2016	07/03/2016	08/03/2016	14/03/2016	15/03/2016	21/03/2016	22/03/2016
	CODE	13350	13409	13709	13817	14154	14170	14380	14539
	LIMITS								
NH ₃ (µg/m ³)	400	1.55	1.70	1.48	1.54	1.47	1.23	1.46	1.67
Lead (µg/m ³)	1	0.005	0.010	0.007	0.036	0.027	0.007	0.025	0.021
Arsenic (ng/m ³)	6	0.97	1.00	0.970	BDL	BDL	BDL	BDL	0.48
Nickel (ng/m ³)	20	1.25	0.52	1.11	0.95	0.44	1.62	1.24	1.65
Benzene (µg/m ³)	5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
B(a)P (ng/m ³)	1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

Note: BDL: Below Detectable Limit.

End of Report

Test Report

ANALYSIS REPORT OF AMBIENT AIR QUALITY

1. Name of the location : Shantigudda
2. Name of the industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Spécial Economic Zone, Permude
Mangalore-574509.
3. Sample Collected By : M/s. Environmental Health & Safety Research and
Development Centre, Bangalore – 560 010.
4. Particulars of Sample Collected : Ambient Air collected through
Fine Particulate Sampler – APM 550
Respirable Dust Sampler – 460NL,
CO & O₃ Analyzers.
5. Date of Collection : For the Month of March-2016(Monitored for 24 hours)
6. Sample Number : EHSRDC/OMPL/A/16/03/

PARAMETERS	DATE	WK 58		WK 59		WK 60		WK 61	
		01/03/2016	02/03/2016	07/03/2016	08/03/2016	14/03/2016	15/03/2016	21/03/2016	22/03/2016
	CODE	13349	13408	13708	13816	14153	14169	14379	14538
	LIMITS								
PM ₁₀ (µg/m ³)	100	69	59	60	57	61	60	59	56
PM _{2.5} (µg/m ³)	60	19	15	18	14	17	15	15	14
SO ₂ (µg/m ³)	80	2.08	2.46	2.07	2.46	2.21	2.13	2.37	2.17
NO ₂ (µg/m ³)	80	3.25	3.19	3.59	3.44	3.16	3.26	3.34	3.26
CO (mg/m ³)	4	0.88	0.84	0.78	0.71	0.76	0.78	0.83	0.77
O ₃ (µg/m ³)	180	0.77	0.86	0.82	0.78	0.84	0.87	0.95	0.89

Test Report

PARAMETERS	DATE	WK 58		WK 59		WK 60		WK 61	
		01/03/2016	02/03/2016	07/03/2016	08/03/2016	14/03/2016	15/03/2016	21/03/2016	22/03/2016
	CODE	13349	13408	13708	13816	14153	14169	14379	14538
	LIMITS								
NH ₃ (µg/m ³)	400	1.64	1.34	1.35	1.44	1.56	1.32	1.67	1.46
Lead (µg/m ³)	1	0.005	0.011	0.006	0.006	0.003	0.002	0.036	0.016
Arsenic (ng/m ³)	6	0.248	BDL	BDL	BDL	BDL	0.249	BDL	BDL
Nickel (ng/m ³)	20	1.45	1.35	2.480	0.68	0.67	1.97	0.79	1.88
Benzene (µg/m ³)	5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
B(a)P (ng/m ³)	1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

Note: BDL: Below Detectable Limit.

End of Report

Test Report

ANALYSIS REPORT OF AMBIENT AIR QUALITY

1. Name of the location : Tenka- Ekkar
2. Name of the industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Spécial Economic Zone, Permude
Mangalore-574509.
3. Sample Collected By : M/s. Environmental Health & Safety Research and
Development Centre, Bangalore – 560 010.
4. Particulars of Sample Collected : Ambient Air collected through
Fine Particulate Sampler – APM 550
Respirable Dust Sampler – 460NL,
CO & O₃ Analyzers.
5. Date of Collection : For the Month of March-2016(Monitored for 24 hours)
6. Sample Number : EHSRDC/OMPL/A/16/03/

PARAMETERS	DATE	WK 58		WK 59		WK 60		WK 61	
		03/03/2016	04/03/2016	09/03/2016	10/03/2016	16/03/2016	17/03/2016	23/03/2016	24/03/2016
	CODE	13542	13544	13818	13877	14296	14297	14540	14579
	LIMITS								
PM ₁₀ (µg/m ³)	100	58	66	55	58	67	62	63	60
PM _{2.5} (µg/m ³)	60	14	18	15	14	19	17	20	16
SO ₂ (µg/m ³)	80	2.37	2.31	2.37	2.45	2.16	2.35	2.45	2.17
NO ₂ (µg/m ³)	80	3.24	3.31	3.75	3.19	3.54	3.75	3.16	3.24
CO (mg/m ³)	4	0.79	0.80	0.80	0.82	0.71	0.74	0.83	0.81
O ₃ (µg/m ³)	180	0.82	0.84	0.86	0.94	0.81	0.86	0.96	0.92

Test Report

PARAMETERS	DATE	WK 58		WK 59		WK 60		WK 61	
		03/03/2016	04/03/2016	09/03/2016	10/03/2016	16/03/2016	17/03/2016	23/03/2016	24/03/2016
	CODE	13542	13544	13818	13877	14296	14297	14540	14579
	LIMITS								
NH ₃ (µg/m ³)	400	1.29	1.53	1.72	1.63	1.71	1.56	1.26	1.75
Lead (µg/m ³)	1	0.007	0.011	0.003	BDL	0.006	0.008	0.007	0.022
Arsenic (ng/m ³)	6	BDL	1.01	BDL	0.24	1.25	1.25	0.49	0.245
Nickel (ng/m ³)	20	0.25	1.76	2.45	BDL	1.60	0.58	1.06	1.36
Benzene (µg/m ³)	5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
B(a)P (ng/m ³)	1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

Note: BDL: Below Detectable Limit.

End of Report

Test Report

ANALYSIS REPORT OF AMBIENT AIR QUALITY

1. Name of the location : Permude
2. Name of the industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Spécial Economic Zone, Permude
Mangalore-574509
3. Sample Collected By : M/s. Environmental Health & Safety Research and
Development Centre, Bangalore – 560 010.
4. Particulars of Sample Collected : Ambient Air collected through
Fine Particulate Sampler – APM 550
Respirable Dust Sampler – 460NL,
CO & O₃ Analyzers.
5. Date of Collection : For the Month of March-2016(Monitored for 24
hours)
6. Sample Number : EHSRDC/OMPL/A/16/03/

PARAMETERS	DATE	WK 58		WK 59		WK 60		WK 61	
		04/03/2016	05/03/2016	10/03/2016	11/03/2016	17/03/2016	18/03/2016	24/03/2016	25/03/2016
	CODE	13543	13545	13876	13982	14332	14336	14578	14614
	LIMITS								
PM ₁₀ (µg/m ³)	100	64	61	60	62	68	55	67	64
PM _{2.5} (µg/m ³)	60	16	17	17	16	20	14	18	19
SO ₂ (µg/m ³)	80	2.61	2.17	2.63	2.15	2.33	2.19	2.64	2.25
NO ₂ (µg/m ³)	80	3.75	3.24	3.26	3.06	3.44	3.19	3.59	3.44
CO (mg/m ³)	4	0.77	0.75	0.79	0.75	0.85	0.74	0.79	0.76
O ₃ (µg/m ³)	180	0.80	0.81	0.87	0.86	0.96	0.88	0.88	0.85

Test Report

PARAMETERS	DATE	WK 58		WK 59		WK 60		WK 61	
		04/03/2016	05/03/2016	10/03/2016	11/03/2016	17/03/2016	18/03/2016	24/03/2016	25/03/2016
	CODE	13543	13545	13876	13982	14332	14336	14578	14614
	LIMITS								
NH ₃ (µg/m ³)	400	1.61	1.45	1.34	1.25	1.67	1.48	1.34	1.64
Lead (µg/m ³)	1	0.006	0.0059	0.007	0.006	0.005	0.109	0.009	0.013
Arsenic (ng/m ³)	6	BDL	BDL	0.74	BDL	0.73	BDL	BDL	BDL
Nickel (ng/m ³)	20	0.69	1.46	0.44	1.47	0.75	1.99	0.99	1.50
Benzene (µg/m ³)	5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
B(a)P (ng/m ³)	1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

Note: BDL: Below Detectable Limit.

End of Report

Test Report

ANALYSIS REPORT OF AMBIENT AIR QUALITY

1. Name of the location : OMPL West Side
2. Name of the industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Spécial Economic Zone, Permude
Mangalore-574509
3. Sample Collected By : M/s. Environmental Health & Safety Research and
Development Centre, Bangalore – 560 010.
4. Particulars of Sample Collected : Ambient Air collected through
Fine Particulate Sampler – APM 550
Respirable Dust Sampler – 460NL,
CO & O₃ Analyzers.
5. Date of Collection : For the Month of March-2016(Monitored for 24
hours)
6. Sample Number : EHSRDC/OMPL/A/16/03/

PARAMETERS	DATE	WK 58		WK 59		WK 60		WK 61	
		01/03/2016	02/03/2016	07/03/2016	08/03/2016	14/03/2016	15/03/2016	21/03/2016	22/03/2016
	CODE LIMITS	13348	13407	13707	13815	14152	14168	14378	14537
PM ₁₀ (µg/m ³)	100	66	65	54	63	56	57	66	61
PM _{2.5} (µg/m ³)	60	21	20	14	17	14	16	19	19
SO ₂ (µg/m ³)	80	2.36	2.14	2.44	2.23	2.66	2.45	2.46	2.54
NO ₂ (µg/m ³)	80	3.18	3.64	3.14	3.67	3.34	3.77	3.82	3.64
CO (mg/m ³)	4	0.82	0.79	0.81	0.76	0.83	0.73	0.78	0.81
O ₃ (µg/m ³)	180	0.86	0.81	0.79	0.84	0.95	0.80	0.87	0.95

Test Report

PARAMETERS	DATE	WK 58		WK 59		WK 60		WK 61	
		01/03/2016	02/03/2016	07/03/2016	08/03/2016	14/03/2016	15/03/2016	21/03/2016	22/03/2016
	CODE	13348	13407	13707	13815	14152	14168	14378	14537
	LIMITS								
NH ₃ (µg/m ³)	400	1.22	1.43	1.66	1.68	1.75	1.64	1.33	1.55
Lead (µg/m ³)	1	0.033	0.089	0.108	0.030	0.08	0.009	0.008	0.028
Arsenic (ng/m ³)	6	1.20	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Nickel (ng/m ³)	20	1.08	1.72	1.04	2.05	1.05	1.89	1.38	0.87
Benzene (µg/m ³)	5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
B(a)P (ng/m ³)	1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

Note: BDL: Below Detectable Limit.

End of Report

Test Report

ANALYSIS REPORT OF FRESH WATER QUALITY

1. Name of the Location : GW1: Narayana Guru Community Hall, Permude
2. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Special Economic Zone, Permude
Mangalore-574509.
3. Sample Collected By : M/s. Environmental Health and Safety Research and Development
Centre, Bangalore - 560 010.
4. Date of Collection : 15.03.2016
5. Particulars of Sample Collected : Bore well water, Grab Sampling
6. Date of Sample Receipt : 17.03.2016
7. Sample Number : EHSRDC/OMPL/W/16/03/14155
8. Protocol : APHA, 22nd Edition/IS: Standard

Sl.No	PARAMETERS	UNIT	Test Methods	Std. IS 10500:2012 (Second Revision)		Code
				DL	PL	
						GW1
						14155
1.	pH	--	4500H+ B	6.5-8.5		7.4
2.	Colour	Hazen	IS 3025(Part-4):1983	5	15	<1
3.	Odour	--	IS 3025(Part-5):1983	Unobjectionable		Unobjectionable
4.	Taste	--	IS 3025(Part-8):1984	Agreeable		Agreeable
5.	Turbidity	NTU	2130 B	1	5	0.42
6.	Total Dissolved Solids	mg/L	2540 C	500	2000	112
7.	Total Hardness	mg/L	2340 C	200	600	23.0
8.	Calcium as Ca	mg/L	3500-Ca	75	200	4.8
9.	Magnesium as Mg	mg/L	3500 Mg B	30	100	2.67
10.	Sulphate as SO ₄	mg/L	4500-SO ₄ ²⁻	200	400	0.43
11.	Fluoride as F	mg/L	4500F D	1	1.5	BDL
12.	Nitrate as NO ₃	mg/L	4500-NO ₃ E	45		0.44
13.	Chloride as Cl	mg/L	4500-Cl B	250	1000	72.9
14.	Iron as Fe	mg/L	3500-Fe B	0.3		0.20
15.	Alkalinity	mg/L	2320 B	200	600	26.0
16.	Chromium Hexavalent	mg/L	3500 Cr B	---		BDL
17.	E-Coli	CFU/100ml	IS15185:2002	Absent		Absent
18.	Total Coliform	CFU/100ml	IS15185:2002	Absent		Absent

Note:- BDL- Below Detectable Limit, DL - Desirable Limit, PL - Permissible Limit.

INFERENCE

As per IS 10500:2012(Second Revision),
Report Status: - The measured values for the above parameters for those standards
have been specified were observed to be within the said standard.

End of Report

Praveena
Authorized Signatory

Test Report

ANALYSIS REPORT OF FRESH WATER QUALITY

1. Name of the Location : GW2: GagnetLabor Colony
2. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore SpécialEconomicZone, Permude
Mangalore-574509.
3. Sample Collected By : M/s. Environmental Health and Safety Research and Development
Centre, Bangalore - 560 010.
4. Date of Collection : 15.03.2016
5. Particulars of Sample Collected : Bore well water, Grab Sampling
6. Date of Sample Receipt : 17.03.2016
7. Sample Number : EHSRDC/OMPL/W/16/03/14156
8. Protocol : APHA, 22nd Edition/IS: Standard

Sl.No	PARAMETERS	UNIT	Test Methods	Std. IS 10500:2012 (Second Revision)		Code
				DL	PL	
						GW2
						14156
1.	pH	--	4500H ⁺ B	6.5-8.5		7.4
2.	Colour	Hazen	IS 3025(Part-4):1983	5	15	<1
3.	Odour	--	IS 3025(Part-5):1983	Unobjectionable		Unobjectionable
4.	Taste	--	IS 3025(Part-8):1984	Agreeable		Agreeable
5.	Turbidity	NTU	2130 B	1	5	0.4
6.	Total Dissolved Solids	mg/L	2540 C	500	2000	39.0
7.	Total Hardness	mg/L	2340 C	200	600	23.0
8.	Calcium as Ca	mg/L	3500-Ca	75	200	4.4
9.	Magnesium as Mg	mg/L	3500 Mg B	30	100	2.91
10.	Sulphate as SO ₄	mg/L	4500-SO ₄ ²⁻	200	400	0.43
11.	Fluoride as F	mg/L	4500F D	1	1.5	BDL
12.	Nitrate as NO ₃	mg/L	4500-NO ₃ E	45		0.76
13.	Chloride as Cl	mg/L	4500-Cl B	250	1000	9.06
14.	Iron as Fe	mg/L	3500-Fe B	0.3		0.14
15.	Alkalinity	mg/L	2320 B	200	600	27.0
16.	Chromium Hexavalent	mg/L	3500 Cr B	---		BDL
17.	E-Coli	CFU/100ml	IS15185:2002	Absent		Absent
18.	Total Coliform	CFU/100ml	IS15185:2002	Absent		Absent

Note:- BDL- Below Detectable Limit, DL - Desirable Limit, PL - Permissible Limit.

INFERENCE	As per IS 10500:2012(Second Revision), Report Status: - The measured values for the above parameters for those standards have been specified were observed to be within the said standard.
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End of Report

Praveena
Authorized Signatory

Test Report

ANALYSIS REPORT OF FRESH WATER QUALITY

1. Name of the Location : OW1: Tenka-Ekka
2. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Special Economic Zone, Permude
Mangalore-574509.
3. Sample Collected By : M/s. Environmental Health and Safety Research and
Development Centre, Bangalore - 560 010.
4. Date of Collection : 15.03.2016
5. Particulars of Sample Collected : Open well water, Grab Sampling
6. Date of Sample Receipt : 17.03.2016
7. Sample Number : EHSRDC/OMPL/W/16/03/14157
8. Protocol : APHA, 22nd Edition/IS: Standard

Sl.No	PARAMETERS	UNIT	Test Methods	Std. IS 10500:2012 (Second Revision)		Code
				DL	PL	
						OW1
						14157
1.	pH	--	4500H ⁺ B	6.5-8.5		6.7
2.	Colour	Hazen	IS 3025(Part-4):1983	5	15	<1
3.	Odour	--	IS 3025(Part-5):1983	Unobjectionable		Unobjectionable
4.	Taste	--	IS 3025(Part-8):1984	Agreeable		Agreeable
5.	Turbidity	NTU	2130 B	1	5	0.89
6.	Total Dissolved Solids	mg/L	2540 C	500	2000	168
7.	Total Hardness	mg/L	2340 C	200	600	50.0
8.	Calcium as Ca	mg/L	3500-Ca	75	200	12.0
9.	Magnesium as Mg	mg/L	3500 Mg B	30	100	4.8
10.	Sulphate as SO ₄	mg/L	4500-SO ₄ ²⁻	200	400	15.48
11.	Fluoride as F	mg/L	4500F D	1	1.5	BDL
12.	Nitrate as NO ₃	mg/L	4500-NO ₃ E	45		0.38
13.	Chloride as Cl	mg/L	4500-Cl B	250	1000	72.9
14.	Iron as Fe	mg/L	3500-Fe B	0.3		0.20
15.	Alkalinity	mg/L	2320 B	200	600	42.0
16.	Chromium Hexavalent	mg/L	3500 Cr B	---		BDL
17.	E-Coli	CFU/100ml	IS15185:2002	Absent		Absent
18.	Total Coliform	CFU/100ml	IS15185:2002	Absent		Absent

Note:- BDL- Below Detectable Limit, DL - Desirable Limit, PL - Permissible Limit.

INFERENCE

As per IS 10500:2012(Second Revision),
Report Status:-The measured values for the above parameters for those standards
have been specified were observed to be within the said standard.

End of Report

Praveena
Authorized Signatory

Test Report

ANALYSIS REPORT OF FRESH WATER QUALITY

1. Name of the Location : OW2: Shanthiguda Village
2. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Special Economic Zone, Perumde
Mangalore-574509.
3. Sample Collected By : M/s. Environmental Health and Safety Research and
Development Centre, Bangalore - 560 010.
4. Date of Collection : 15.03.2016
5. Particulars of Sample Collected : Open well water, Grab Sampling
6. Date of Sample Receipt : 17.03.2016
7. Sample Number : EHSRDC/OMPL/W/16/03/14158
8. Protocol : APHA, 22nd Edition/IS: Standard

Sl.No	PARAMETERS	UNIT	Test Methods	Std. IS 10500:2012 (Second Revision)		Code
				DL	PL	
						OW2
						14158
1.	pH	--	4500H+ B	6.5-8.5		6.9
2.	Colour	Hazen	IS 3025(Part-4):1983	5	15	<1
3.	Odour	--	IS 3025(Part-5):1983	Unobjectionable		Unobjectionable
4.	Taste	--	IS 3025(Part-8):1984	Agreeable		Agreeable
5.	Turbidity	NTU	2130 B	1	5	0.76
6.	Total Dissolved Solids	mg/L	2540 C	500	2000	180
7.	Total Hardness	mg/L	2340 C	200	600	48.0
8.	Calcium as Ca	mg/L	3500-Ca	75	200	9.6
9.	Magnesium as Mg	mg/L	3500 Mg B	30	100	5.8
10.	Sulphate as SO ₄	mg/L	4500-SO ₄ ²⁻	200	400	12.9
11.	Fluoride as F	mg/L	4500F D	1	1.5	BDL
12.	Nitrate as NO ₃	mg/L	4500-NO ₃ E	45		0.46
13.	Chloride as Cl	mg/L	4500-Cl B	250	1000	72.4
14.	Iron as Fe	mg/L	3500-Fe B	0.3		0.19
15.	Alkalinity	mg/L	2320 B	200	600	37.0
16.	Chromium Hexavalent	mg/L	3500 Cr B	---		BDL
17.	E-Coli	CFU/100ml	IS15185:2002	Absent		Absent
18.	Total Coliform	CFU/100ml	IS15185:2002	Absent		Absent

Note:- BDL- Below Detectable Limit, DL - Desirable Limit, PL - Permissible Limit.

INFERENCE

As per IS 10500:2012(Second Revision),
Report Status: -The measured values for the above parameters for those standards
have been specified were observed to be within the said standard.

End of Report

Praveena

Authorized Signatory

Test Report

ANALYSIS REPORT OF FRESH WATER QUALITY

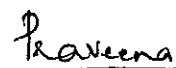
1. Name of the Location : SW1: Near Flare Area, OMPL
2. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore SpécialEconomicZone, Permude
Mangalore-574509.
3. Sample Collected By : M/s. Environmental Health and Safety Research and Development
Centre, Bangalore - 560 010.
4. Date of Collection : 15.03.2016
5. Particulars of Sample Collected : Surface outlet water, Grab Sampling
6. Date of Sample Receipt : 17.03.2016
7. Sample Number : EHSRDC/OMPL/W/16/03/14159
8. Protocol : APHA, 22nd Edition/IS: Standard

Sl.No	PARAMETERS	UNIT	Test Methods	Std. IS 10500:2012 (Second Revision)		Code
				DL	PL	SW1 14159
1.	pH	--	4500H ⁺ B	6.5-8.5		7.3
2.	Colour	Hazen	IS 3025(Part-4):1983	5	15	<1
3.	Odour	--	IS 3025(Part-5):1983	Unobjectionable		Unobjectionable
4.	Taste	--	IS 3025(Part-8):1984	Agreeable		Agreeable
5.	Turbidity	NTU	2130 B	1	5	1.1
6.	Total Dissolved Solids	mg/L	2540 C	500	2000	140
7.	Total Hardness	mg/L	2340 C	200	600	62.0
8.	Calcium as Ca	mg/L	3500-Ca	75	200	17.2
9.	Magnesium as Mg	mg/L	3500 Mg B	30	100	4.6
10.	Sulphate as SO ₄	mg/L	4500-SO ₄ ²⁻	200	400	10.7
11.	Fluoride as F	mg/L	4500F D	1	1.5	BDL
12.	Nitrate as NO ₃	mg/L	4500-NO ₃ E	45		0.32
13.	Chloride as Cl	mg/L	4500-Cl B	250	1000	57.0
14.	Iron as Fe	mg/L	3500-Fe B	0.3		0.18
15.	Alkalinity	mg/L	2320 B	200	600	49.0
16.	Chromium Hexavalent	mg/L	3500 Cr B	---		BDL
17.	E-Coli	CFU/100ml	IS15185:2002	Absent		Absent
18.	Total Coliform	CFU/100ml	IS15185:2002	Absent		Absent

Note:- BDL- Below Detectable Limit, DL - Desirable Limit, PL - Permissible Limit.

INFERENCE	As per IS 10500:2012(Second Revision), Report Status: -The measured values for the above parameters for those standards have been specified were observed to be within the said standard.
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***End of Report**


Authorized Signatory

Test Report

ANALYSIS REPORT OF FRESH WATER QUALITY

1. Name of the Location : SW2 : Near Central Warehouse, OMPL
2. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Special Economic Zone, Perumde
Mangalore-574509.
3. Sample Collected By : M/s. Environmental Health and Safety Research and
Development Centre, Bangalore - 560 010.
4. Date of Collection : 15.03.2016
5. Particulars of Sample Collected : Surface inlet water, Grab Sampling
6. Date of Sample Receipt : 17.03.2016
7. Sample Number : EHSRDC/OMPL/W/16/03/14160
8. Protocol : APHA, 22nd Edition/IS: Standard

Sl.No	PARAMETERS	UNIT	Test Methods	Std. IS 10500:2012 (Second Revision)		Code
				DL	PL	SW2
						14160
1.	pH	--	4500H+ B	6.5-8.5		7.1
2.	Colour	Hazen	IS 3025(Part-4):1983	5	15	<1
3.	Odour	--	IS 3025(Part-5):1983	Unobjectionable		Unobjectionable
4.	Taste	--	IS 3025(Part-8):1984	Agreeable		Agreeable
5.	Turbidity	NTU	2130 B	1	5	0.98
6.	Total Dissolved Solids	mg/L	2540 C	500	2000	150
7.	Total Hardness	mg/L	2340 C	200	600	61.0
8.	Calcium as Ca	mg/L	3500-Ca	75	200	18.0
9.	Magnesium as Mg	mg/L	3500 Mg B	30	100	3.8
10.	Sulphate as SO ₄	mg/L	4500-SO ₄ ²⁻	200	400	10.7
11.	Fluoride as F	mg/L	4500F D	1	1.5	BDL
12.	Nitrate as NO ₃	mg/L	4500-NO ₃ E	45		0.38
13.	Chloride as Cl	mg/L	4500-Cl B	250	1000	57.9
14.	Iron as Fe	mg/L	3500-Fe B	0.3		0.19
15.	Alkalinity	mg/L	2320 B	200	600	49.0
16.	Chromium Hexavalent	mg/L	3500 Cr B	---		BDL
17.	E-Coli	CFU/100ml	IS15185:2002	Absent		Absent
18.	Total Coliform	CFU/100ml	IS15185:2002	Absent		Absent

Note:- BDL- Below Detectable Limit, DL - Desirable Limit, PL - Permissible Limit.

INFERENCE

As per IS 10500:2012(Second Revision),
Report Status: - The measured values for the above parameters for those standards
have been specified were observed to be within the said standard.

End of Report

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Authorized Signatory

Test Report

ANALYSIS REPORT OF FRESH WATER QUALITY

1. Name of the Location : GW3: L&T New LaborColony
2. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore SpécialEconomicZone, Permude
Mangalore-574509.
3. Sample Collected By : M/s. Environmental Health and Safety Research and Development
Centre, Bangalore - 560 010.
4. Date of Collection : 15.03.2016
5. Particulars of Sample Collected : Bore well water ,Grab Sampling
6. Date of Sample Receipt : 17.03.2016
7. Sample Number : EHSRDC/OMPL/W/16/03/14161
8. Protocol : APHA, 22nd Edition/IS: Standard

Sl.No	PARAMETERS	UNIT	Test Methods	Std. IS 10500:2012 (Second Revision)		Code
				DL	PL	GW3
						14161
1.	pH	--	4500H+ B	6.5-8.5		7.2
2.	Colour	Hazen	IS 3025(Part-4):1983	5	15	<1
3.	Odour	--	IS 3025(Part-5):1983	Unobjectionable		Unobjectionable
4.	Taste	--	IS 3025(Part-8):1984	Agreeable		Agreeable
5.	Turbidity	NTU	2130 B	1	5	0.54
6.	Total Dissolved Solids	mg/L	2540 C	500	2000	154
7.	Total Hardness	mg/L	2340 C	200	600	45.0
8.	Calcium as Ca	mg/L	3500-Ca	75	200	9.2
9.	Magnesium as Mg	mg/L	3500 Mg B	30	100	5.3
10.	Sulphate as SO ₄	mg/L	4500-SO ₄ ²⁻	200	400	12.30
11.	Fluoride as F	mg/L	4500F D	1	1.5	0.14
12.	Nitrate as NO ₃	mg/L	4500-NO ₃ E	45		0.92
13.	Chloride as Cl	mg/L	4500-Cl B	250	1000	68.9
14.	Iron as Fe	mg/L	3500-Fe B	0.3		0.25
15.	Alkalinity	mg/L	2320 B	200	600	38.0
16.	Chromium Hexavalent	mg/L	3500 Cr B	---		BDL
17.	E-Coli	CFU/100ml	IS15185:2002	Absent		Absent
18.	Total Coliform	CFU/100ml	IS15185:2002	Absent		Absent

Note:- BDL- Below Detectable Limit, DL - Desirable Limit, PL - Permissible Limit.

INFERENCE

As per IS 10500:2012(Second Revision),
Report Status:-The measured values for the above parameters for those standards
have been specified were observed to be within the said standard.

End of Report

P. Ravenna
Authorized Signatory

Test Report

ANALYSIS REPORT OF FRESH WATER QUALITY

1. Name of the Location : OW3: Permude Village
2. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore SpécialEconomicZone, Permude
Mangalore-574509
3. Sample Collected By : M/s. Environmental Health and Safety Research and
Development Centre, Bangalore - 560 010.
4. Date of Collection : 15.03.2016
5. Particulars of Sample Collected : Open well water, Grab Sampling
6. Date of Sample Receipt : 17.03.2016
7. Sample Number : EHSRDC/OMPL/W/16/03/14162
8. Protocol : APHA, 22nd Edition/IS: Standard

Sl.No	PARAMETERS	UNIT	Test Methods	Std. IS 10500:2012 (Second Revision)		Code
				DL	PL	OW3 14162
1.	pH	--	4500H ⁺ B	6.5-8.5		8.4
2.	Colour	Hazen	IS 3025(Part-4):1983	5	15	<1
3.	Odour	--	IS 3025(Part-5):1983	Unobjectionable		Unobjectionable
4.	Taste	--	IS 3025(Part-8):1984	Agreeable		Agreeable
5.	Turbidity	NTU	2130 B	1	5	0.45
6.	Total Dissolved Solids	mg/L	2540 C	500	2000	324
7.	Total Hardness	mg/L	2340 C	200	600	34.0
8.	Calcium as Ca	mg/L	3500-Ca	75	200	9.6
9.	Magnesium as Mg	mg/L	3500 Mg B	30	100	2.43
10.	Sulphate as SO ₄	mg/L	4500-SO ₄ ²⁻	200	400	0.69
11.	Fluoride as F	mg/L	4500F D	1	1.5	BDL
12.	Nitrate as NO ₃	mg/L	4500-NO ₃ E	45		1.04
13.	Chloride as Cl	mg/L	4500-Cl B	250	1000	184.2
14.	Iron as Fe	mg/L	3500-Fe B	0.3		0.28
15.	Alkalinity	mg/L	2320 B	200	600	48.0
16.	Chromium Hexavalent	mg/L	3500 Cr B	---		BDL
17.	E-Coli	CFU/100ml	IS15185:2002	Absent		Absent
18.	Total Coliform	CFU/100ml	IS15185:2002	Absent		Absent

Note:- BDL- Below Detectable Limit, DL - Desirable Limit, PL - Permissible Limit.

INFERENCE

As per IS 10500:2012(Second Revision),

Report Status:- The measured values for the above parameters for those standards
have been specified were observed to be within the said standard.

End of Report

Praveena
Authorized Signatory

Test Report

ANALYSIS REPORT OF FRESH WATER QUALITY

1. Name of the Location : GW4: OMPL (Near ETP)
2. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Special Economic Zone, Perumde
Mangalore-574509
3. Sample Collected By : M/s. Environmental Health and Safety Research and
Development Centre, Bangalore - 560 010.
4. Date of Collection : 15.03.2016
5. Particulars of Sample Collected : Bore well water, Grab Sampling
6. Date of Sample Receipt : 17.03.2016
7. Sample Number : EHSRDC/OMPL/W/16/03/14163
8. Protocol : APHA, 22nd Edition/IS: Standard

Sl.No	PARAMETERS	UNIT	Test Methods	Std. IS 10500:2012 (Second Revision)		Code
				DL	PL	
						GW4
						14163
1.	pH	--	4500H* B	6.5-8.5		6.5
2.	Colour	Hazen	IS 3025(Part-4):1983	5	15	<1
3.	Odour	--	IS 3025(Part-5):1983	Unobjectionable		Unobjectionable
4.	Taste	--	IS 3025(Part-8):1984	Agreeable		Agreeable
5.	Turbidity	NTU	2130 B	1	5	0.30
6.	Total Dissolved Solids	mg/L	2540 C	500	2000	130
7.	Total Hardness	mg/L	2340 C	200	600	66.0
8.	Calcium as Ca	mg/L	3500-Ca	75	200	18.4
9.	Magnesium as Mg	mg/L	3500 Mg B	30	100	4.86
10.	Sulphate as SO ₄	mg/L	4500-SO ₄ ²⁻	200	400	9.72
11.	Fluoride as F	mg/L	4500F D	1	1.5	0.24
12.	Nitrate as NO ₃	mg/L	4500-NO ₃ E	45		0.57
13.	Chloride as Cl	mg/L	4500-Cl B	250	1000	30.20
14.	Iron as Fe	mg/L	3500-Fe B	0.3		0.10
15.	Alkalinity	mg/L	2320 B	200	600	63.0
16.	Chromium Hexavalent	mg/L	3500 Cr B	---		BDL
17.	E-Coli	CFU/100ml	IS15185:2002	Absent		Absent
18.	Total Coliform	CFU/100ml	IS15185:2002	Absent		Absent

Note:- BDL- Below Detectable Limit, DL - Desirable Limit, PL - Permissible Limit.

INFERENCE

As per IS 10500:2012(Second Revision),
Report Status: - The measured values for the above parameters for those standards
have been specified were observed to be within the said standard.

End of Report

P.aveena
Authorized Signatory

Test Report

AMBIENT NOISE LEVEL MONITORING REPORT

1. Name of the Project : M/s. ONGC Mangalore Petrochemicals Limited,
Mangalore Spécial Economic Zone,
Permude.Mangalore-574509.
2. Sample Collected by : M/s. Environmental Health and Safety Research &
Development Centre, Bangalore - 560 010.
3. Date of Collection : 24.03.2016
4. Particulars of Sample Collected : Ambient Noise Level collected through
Sound Level Meter C-322
5. Date of Sample Receipt : 25.03.2016
6. Sample Number : EHSRDC/OMPL/N/16/03/ 14541-14544
7. Method Adopted : Instrument Method

Code No	Sample Location	Parameters		Std.
		Day Time dB(A)	Night Time dB(A)	
14541	OMPL East Side Boundary	62.92	53.87	75.0 dB(A) Day
14542	OMPL West Side Boundary	61.5	52.63	
14543	OMPL North Side Boundary	66.47	52.81	70 dB(A) Night
14544	OMPL South Side Boundary	65.25	53.57	

Note :

- Day Time is reckoned between 6 A.M and 10 P.M
- Night Time is reckoned between 10 P.M and 6 A.M
- L_{eq} : It is energy mean of the noise level over a specified period.
- *dB (A) L_{eq} denotes the time weighted average of the level of sound in decibels on scale A which is relatable to human hearing.
- A "decibel" is a unit in which noise is measured.
- "A", in dB (A) L_{eq} , denotes the frequency weighting in the measurement of noise and corresponds to Frequency response characteristics of the human ear.

End of Report

Praveena
Authorized Signatory

Test Report

ANALYSIS REPORT FOR SOURCE EMISSION

1. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Spécial Economic Zone, Permude
Mangalore-574509.
2. Stack ID : ISOMER Charge Heater
3. Sample Collected by : M/s. Environmental Health and Safety Research &
Development Centre, Bangalore - 560 010.
4. Date of Collection : 17.03.2016
5. Particulars of Sample : Emissions from stack collected through
Collected Stack Sampler VSS1
6. Date of Sample Receipt : 19.03.2016
7. Sample Number : EHSRDC/OMPL/S/16/03/14298
8. Report to be Sent : 24.03.2016
9. Page No : 1 of 1

GENERAL DETAILS

Date of Monitoring	17.03.2016
Ambient Temperature (°C)	36
Stack Temperature (°C)	189
Velocity (m/s)	7.01
Diameter (m)	2.3
Cross Sectional Area in meter square (m ²)	4.153
Quantity of flue gas discharged into atmosphere (Nm ³ /h)	70091.015

RESULTS

Parameters	Protocol	Unit	Result	Standard
Particulate Matter	IS: 11255(P1)	mg/Nm ³	3.24	5
Nitrogen Dioxide	IS: 11255 (P7)	mg/ Nm ³	12.69	250
Sulphur Dioxide	IS: 11255, (P2)	mg/ Nm ³	11.52	50
Carbon Monoxide	EPA Method (10)	mg/Nm ³	65.7	100

INFERENCE	As per KSPCB Standards, Report Status: - The measured values for above parameters are within the standard.
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End of Report

Praveena
Authorized Signatory

Test Report

ANALYSIS REPORT FOR SOURCE EMISSION

1. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Spécial Economic Zone, Permude
Mangalore-574509.
2. Stack ID : CPP (GTG + HRSG) -1
3. Sample Collected by : M/s. Environmental Health and Safety Research &
Development Centre, Bangalore - 560 010.
4. Date of Collection : 17.03.2016
5. Particulars of Sample : Emissions from stack collected through
Collected Stack Sampler VSS1
6. Date of Sample Receipt : 19.03.2016
7. Sample Number : EHSRDC/OMPL/S/16/03/14299
8. Report to be Sent : 24.03.2016
9. Page No : 1 of 1

GENERAL DETAILS

Date of Monitoring	17.03.2016
Ambient Temperature (°C)	36
Stack Temperature (°C)	149
Velocity (m/s)	6.51
Diameter (m)	2.8
Cross Sectional Area in meter square (m ²)	6.154
Quantity of flue gas discharged into atmosphere (Nm ³ /h)	105558.67

RESULTS

Parameters	Protocol	Unit	Result	Standard
Particulate Matter	IS: 11255(P1)	mg/Nm ³	18.90	50
Nitrogen Dioxide	IS: 11255 (P7)	mg/ Nm ³	13.97	350
Sulphur Dioxide	IS: 11255, (P2)	mg/ Nm ³	13.44	850
Carbon Monoxide	EPA method (10)	mg/Nm ³	54.9	150

INFERENCE	As per KSPCB Standards, Report Status: - The measured values for above parameters are within the standard.
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End of Report

Praveena
Authorized Signatory

Test Report

ANALYSIS REPORT FOR SOURCE EMISSION

1. Name of the Industry : **M/s. ONGC Mangalore Petrochemicals Limited**
Mangalore Spécial Economic Zone, Permude
Mangalore-574509.
2. Stack ID : CPP Utility Boiler
3. Sample Collected by : M/s. Environmental Health and Safety Research &
Development Centre, Bangalore - 560 010.
4. Date of Collection : 17.03.2016
5. Particulars of Sample : Emissions from stack collected through
Collected Stack Sampler VSS1
6. Date of Sample Receipt : 19.03.2016
7. Sample Number : EHSRDC/OMPL/S/16/03/14300
8. Report to be Sent : 24.03.2016
9. Page No : 1 of 1

GENERAL DETAILS

Date of Monitoring	17.03.2016
Ambient Temperature (°C)	38
Stack Temperature (°C)	122
Velocity (m/s)	7.81
Diameter (m)	2.74
Cross Sectional Area in meter square (m ²)	5.893
Quantity of flue gas discharged into atmosphere (Nm ³ /h)	130431.3

RESULTS

Parameters	Protocol	Unit	Result	Standard
Particulate Matter	IS: 11255(P1)	mg/Nm ³	11.40	50
Nitrogen Dioxide	IS: 11255 (P7)	mg/ Nm ³	15.33	350
Sulphur Dioxide	IS: 11255, (P2)	mg/ Nm ³	12.00	850
Carbon Monoxide	EPA method (10)	mg/Nm ³	42.6	150

INFERENCE	As per KSPCB Standards, Report Status: - The measured values for above parameters are within the standard.
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End of Report

Praveena
Authorized Signatory

Test Report

ANALYSIS REPORT FOR SOURCE EMISSION

1. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Spécial Economic Zone, Permude
Mangalore-574509.
2. Stack ID : Platformer Charge Heater
3. Sample Collected by : M/s. Environmental Health and Safety Research &
Development Centre, Bangalore - 560 010.
4. Date of Collection : 18.03.2016
5. Particulars of Sample Collected : Emissions from stack collected through
Stack Sampler VSS1
6. Date of Sample Receipt : 19.03.2016
7. Sample Number : EHSRDC/OMPL/S/16/03/14301
8. Report to be Sent : 24.03.2016
9. Page No : 1 of 1

GENERAL DETAILS

Date of Monitoring	18.03.2016
Ambient Temperature (°C)	39
Stack Temperature (°C)	323
Velocity (m/s)	8.76
Diameter (m)	4.10
Cross Sectional Area in meter square (m²)	13.196
Quantity of flue gas discharged into atmosphere (Nm³/h)	217734.611

RESULTS

Parameters	Protocol	Unit	Result	Standard
Particulate Matter	IS: 11255(P1)	mg/Nm³	4.80	5
Nitrogen Dioxide	IS: 11255 (P7)	mg/ Nm³	12.57	250
Sulphur Dioxide	IS: 11255, (P2)	mg/ Nm³	12.22	50
Carbon Monoxide	EPA method (10)	mg/Nm³	82.4	100

INFERENCE	As per KSPCB Standards, Report Status: - The measured value for above parameters is within the standard.
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End of Report

Paveena

Authorized Signatory

Test Report

ANALYSIS REPORT FOR SOURCE EMISSION

1. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Spécial Economic Zone, Permude
Mangalore-574509.
2. Stack ID : NHT Charge Heater
3. Sample Collected by : M/s. Environmental Health and Safety Research &
Development Centre, Bangalore - 560 010.
4. Date of Collection : 18.03.2016
5. Particulars of Sample : Emissions from stack collected through
Collected Stack Sampler VSS1
6. Date of Sample Receipt : 19.03.2016
7. Sample Number : EHSRDC/OMPL/S/16/03/14302
8. Report to be Sent : 24.03.2016
9. Page No : 1 of 1

GENERAL DETAILS

Date of Monitoring	18.03.2016
Ambient Temperature (°C)	35
Stack Temperature (°C)	239
Velocity (m/s)	5.54
Diameter (m)	1.94
Cross Sectional Area in meter square (m²)	2.954
Quantity of flue gas discharged into atmosphere (Nm³/h)	35432.95

RESULTS

Parameters	Protocol	Unit	Result	Standard
Particulate Matter	IS: 11255(P1)	mg/Nm³	4.60	5
Nitrogen Dioxide	IS: 11255 (P7)	mg/ Nm³	8.37	250
Sulphur Dioxide	IS: 11255, (P2)	mg/ Nm³	7.68	50
Carbon Monoxide	EPA method (10)	mg/Nm³	70.4	100

INFERENCE	As per KSPCB Standards, Report Status: - The measured values for above parameters are within the standard.
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End of Report

Praveena

Authorized Signatory

Test Report

ANALYSIS REPORT FOR SOURCE EMISSION

1. Name of the Industry : **M/s. ONGC Mangalore Petrochemicals Limited**
Mangalore Spécial Economic Zone, Permude
Mangalore-574509.
2. Stack ID : Tatory charge Heater
3. Sample Collected by : M/s. Environmental Health and Safety Research &
Development Centre, Bangalore - 560 010.T
4. Date of Collection : 18.03.2016
5. Particulars of Sample : Emissions from stack collected through
Collected Stack Sampler VSS1
6. Date of Sample Receipt : 19.03.2016
7. Sample Number : EHSRDC/OMPL/S/16/03/14303
8. Report to be Sent : 24.03.2016
9. Page No : 1 of 1

GENERAL DETAILS

Date of Monitoring	18.03.2016
Ambient Temperature (°C)	35
Stack Temperature (°C)	189
Velocity (m/s)	7.02
Diameter (m)	1.75
Cross Sectional Area in meter square (m ²)	2.404
Quantity of flue gas discharged into atmosphere (Nm ³ /h)	40485.462

RESULTS

Parameters	Protocol	Unit	Result	Standard
Particulate Matter	IS: 11255(P1)	mg/Nm ³	4.75	5
Nitrogen Dioxide	IS: 11255 (P7)	mg/ Nm ³	11.55	250
Sulphur Dioxide	IS: 11255, (P2)	mg/ Nm ³	7.68	50
Carbon Monoxide	EPA method (10)	mg/Nm ³	58.2	100

INFERENCE	As per KSPCB Standards, Report Status: - The measured values for above parameters are within the standard.
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End of Report

Praveena

Authorized Signatory

Test Report

ANALYSIS REPORT FOR SOURCE EMISSION

1. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Spécial Economic Zone, Permude
Mangalore-574509.
2. Stack ID : Xylene column Reboiler Heater Part -A
3. Sample Collected by : M/s. Environmental Health and Safety Research &
Development Centre, Bangalore - 560 010.
4. Date of Collection : 19.03.2016
5. Particulars of Sample : Emissions from stack collected through
Collected Stack Sampler VSS1
6. Date of Sample Receipt : 21.03.2016
7. Sample Number : EHSRDC/OMPL/S/16/03/14333
8. Report to be Sent : 24.03.2016
9. Page No : 1 of 1

GENERAL DETAILS

Date of Monitoring	19.03.2016
Ambient Temperature (°C)	34
Stack Temperature (°C)	178
Velocity (m/s)	6.93
Diameter (m)	3.69
Cross Sectional Area in meter square (m ²)	10.689
Quantity of flue gas discharged into atmosphere (Nm ³ /h)	181591.747

RESULTS

Parameters	Protocol	Unit	Result	Standard
Particulate Matter	IS: 11255(P1)	mg/Nm ³	20.85	50
Nitrogen Dioxide	IS: 11255 (P7)	mg/ Nm ³	12.69	350
Sulphur Dioxide	IS: 11255, (P2)	mg/ Nm ³	9.60	850
Carbon Monoxide	EPA method (10)	mg/Nm ³	66.1	150

INFERENCE	As per KSPCB Standards, Report Status: - The measured values for above parameters are within the standard.
-----------	---

End of Report

Praveena

Authorized Signatory

Test Report

ANALYSIS REPORT FOR SOURCE EMISSION

1. Name of the Industry : **M/s. ONGC Mangalore Petrochemicals Limited**
Mangalore Spécial Economic Zone, Permude
Mangalore-574509.
2. Stack ID : Xylene column Reboiler Heater Part- B
3. Sample Collected by : M/s. Environmental Health and Safety Research &
Development Centre, Bangalore - 560 010.
4. Date of Collection : 19.03.2016
5. Particulars of Sample : Emissions from stack collected through
Collected Stack Sampler VSS1
6. Date of Sample Receipt : 21.03.2016
7. Sample Number : EHSRDC/OMPL/S/16/03/14334
8. Report to be Sent : 24.03.2016
9. Page No : 1 of 1

GENERAL DETAILS

Date of Monitoring	19.03.2016
Ambient Temperature (°C)	35
Stack Temperature (°C)	181
Velocity (m/s)	6.59
Diameter (m)	3.69
Cross Sectional Area in meter square (m ²)	10.689
Quantity of flue gas discharged into atmosphere (Nm ³ /h)	171931.902

RESULTS

Parameters	Protocol	Unit	Result	Standard
Particulate Matter	IS: 11255(P1)	mg/Nm ³	22.96	50
Nitrogen Dioxide	IS: 11255 (P7)	mg/ Nm ³	13.05	350
Sulphur Dioxide	IS: 11255, (P2)	mg/ Nm ³	12.68	850
Carbon Monoxide	EPA method (10)	mg/Nm ³	71.5	150

INFERENCE	As per KSPCB Standards, Report Status: - The measured values for above parameters are within the standard.
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End of Report

Praveena

Authorized Signatory

Test Report

ANALYSIS REPORT FOR SOURCE EMISSION

1. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Spécial Economic Zone, Permude
Mangalore-574509.
2. Stack ID : BTF(Benzene Toluene fractionation Column
ReboilerHeater)
3. Sample Collected by : M/s. Environmental Health and Safety Research &
Development Centre, Bangalore - 560 010.
4. Date of Collection : 19.03.2016
5. Particulars of Sample : Emissions from stack collected through
Collected Stack Sampler VSS1
6. Date of Sample Receipt : 21.03.2016
7. Sample Number : EHSRDC/OMPL/S/16/03/14335
8. Report to be Sent : 24.03.2016
9. Page No : 1 of 1

GENERAL DETAILS

Date of Monitoring	19.03.2016
Ambient Temperature (°C)	36
Stack Temperature (°C)	175
Velocity (m/s)	6.15
Diameter (m)	3.29
Cross Sectional Area in meter square (m²)	8.497
Quantity of flue gas discharged into atmosphere (Nm³/h)	129828.33

RESULTS

Parameters	Protocol	Unit	Result	Standard
Particulate Matter	IS: 11255(P1)	mg/Nm³	25.64	50
Nitrogen Dioxide	IS: 11255 (P7)	mg/ Nm³	11.05	350
Sulphur Dioxide	IS: 11255, (P2)	mg/ Nm³	6.40	850
Carbon Monoxide	EPA method (10)	mg/Nm³	69.8	150

INFERENCE	As per KSPCB Standards, Report Status: - The measured values for above parameters are within the standard. *
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End of Report

Praveena

Authorized Signatory

Test Report

ANALYSIS REPORT OF EFFLUENT QUALITY

1. Name of the Location : Guard Pond Pump Discharge
2. Name of the Project : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Spécial Economic Zone, Permude
Mangalore-574509.
3. Sample Collected by : M/s. Environmental Health and Safety Research &
Development Centre, Bangalore - 560 010.
4. Date of Collection : 23.03.2016
5. Particulars of Sample Collected : ETP Guard Pond Discharge Treated Effluent, Grab Sampling
6. Date of Sample Receipt : 24.03.2016
7. Sample Number : EHSRDC/OMPL/ WW/16/03/14495
8. Analysis started on : 24.03.2016
9. Analysis Completed on : 01.04.2016
10. Page No. : 01 of 2
11. Report to be Sent : 02.04.2016
12. Protocol : APHA, 22nd Edition/IS Method

Sl.No	Parameters	Test Methods	Unit	Result	Tolerance limit
1.	pH	IS 3025(Part-11) :1983	-	7.4	6.0-8.5
2.	Colour*	IS 3025(Part-4) :1983	Hazen	<1	All efforts should be made to remove colour and unpleasant odour as for as practicable.
3.	Odour*	IS 3025(Part-5) :1983	--	Unobjectionable	
4.	Temperature	APHA 2550 B	°C	25	Shall not exceed 5°C above the receiving water temperature.
5.	Particle Size of suspended solids*	-	-	Passes	(a) Settle able solids Max. 850 microns
6.	B.O.D (3 days in 27°C)	5210 B	mg/L	12.0	15
7.	C.O.D	5220 B	mg/L	116	125
8.	Total Suspended Solids	2540 D	mg/L	19	20
9.	Phosphate as PO ₄	4500- P D	mg/L	0.67	3
10.	Total Kjeldahl Nitrogen	4500- Norg B	mg/L	17.08	40
11.	Oil & Grease	5520 B	mg/L	BDL	5
12.	Total Residual Chlorine	4500- Cl	mg/L	BDL	1
13.	Free ammonia*	IS 3025 (part 34)	mg/L	Not Detected	5

P.aveena
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Test Report

Sample Number: EHSRDC/OMPL/ WW/16/03/14495

Page No: 02 of 02

14.	Ammonical Nitrogen	4500- NH ₃ ,B,C	mg/L	4.10	15
15.	Hexavalent Chromium	3500- Cr B	mg/L	BDL	0.1
16.	Sulphide	IS 3025 (part 29): 1986	mg/L	0.08	1.0
17.	Fluoride as F	IS 3025(Part 60): 2008	mg/L	0.32	1.5
18.	Nitrate as NO ₃	IS 3025(Part 34) :1988	mg/L	0.13	20
19.	Iron as Fe	IS 3025(Part 53):2003	mg/L	0.15	3
20.	Mercury as Hg*	IS 3025(Part-48):1994	mg/L	BDL	0.01
21.	Lead as Pb*	IS 3025(Part 47):1994	mg/L	BDL	2
22.	Cadmium as Cd*	IS 3025(Part 41):1992	mg/L	0.001	0.1
23.	Selenium as Se*	IS 3025(Part 56):2003	mg/L	BDL	0.05
24.	Arsenic as As*	IS 3025(Part 37):1988	mg/L	0.001	0.2
25.	Zinc as Zn*	IS 3025(Part 49):1994	mg/L	0.014	5
26.	Copper as Cu*	IS 3025(Part-42):1992	mg/L	0.006	1
27.	Manganese as Mn*	3111 B	mg/L	0.004	2
28.	Vanadium*	3500 -V	mg/L	0.001	0.1
29.	Nickel as Ni*	IS13428:2005 (Annex L)	mg/L	0.002	1
30.	Total chromium*	IS 13428:2005(Annex J)	mg/L	0.002	2
31.	Benzene*	APHA 6200 B	mg/L	BDL	0.1
32.	Benzo (a) pyrene*	APHA 6440	µg/L	BDL	0.2
33.	Bioassay*	IS 6582	% survivality		90% survival of fish after 96 hrs, in100% effluent
34.	Phenolic compounds	IS 3025 (part 43):1992	mg/L	BDL	0.35
35.	Cyanide	IS 3025 (Part 27):1986	mg/L	BDL	0.2

*are not accredited by NABL.

Note: BDL: Below Detectable Limit.

INFERENCE	As per Tolerance limit, Report Status: - The measured values for the above parameters for those standards have been specified were observed to be within the said standard.
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End of Report

Praveena
Authorized Signatory

Annexure-F

Form-1 (Rule 4)
Returns Regarding Water Consumed during the Month of Mar., 2016

Name and address of the Consumer	Purpose for which water consumed	Reading at the beginning of the first day of the calendar month under report	Reading at the end of the last day of the calendar month under report	Quantity of Water Consumed in Kilo Letters	If the meter was out of order, the monthly average consumption of water for the previous 3 months of the working period	Quantity of water qualifying for rebate according to the assessee	Remarks
M/s ONGC Mangalore Petrochemicals Limited, Mangalore Special Economic Zone, Permude, Mangalore -574 509	Industrial cooling, spraying in mine pits or boiler feed						
	Cooling Water	0	94148	94148			
	Boiler Feed Water	0	87995	87995			
	Fire Water	0	38616	38616			
	Domestic purpose						
	Drinking Water & Sanitation						Flow through Running hours of pumps recorded
	Processing whereby water gets polluted and the pollutants are easily bio-degradable			3059			
	Service Water						Subtracting total flow (by running hours of pumps) from BFW & CT consumption
Total Consumption				228376			

Signature of the Consumer

Name

Address

Prashanth Kulkarni, Manager (TS)

M/s ONGC Mangalore Petrochemicals Limited, Mangalore Special Economic Zone, Permude, Mangalore -574 509

Prashanth

Annexure - G

ONGC Mangalore Petrochemicals Limited

Production Details for March- 2016

Net Naptha Processed – 108201 MT

Sl. No.	Name of the Product	Quantity, MT
1	Paraxylene (Product)	59326
2	Benzene (Co product)	16357





ONGC Mangalore Petrochemicals Limited

(A Subsidiary of Mangalore Refinery & Petrochemicals Ltd.)

Mangalore Special Economic Zone, Permude, Mangaluru - 574 509

CIN : U40107KA2006PLC041258 Website : www.ompl.co.in

Phone : +91-824 2881518 Fax +91-824 2881539

REF: OMPL/PCB/PK/2016-17/

Date: 14/5/2016

To:

The Environmental Officer

Regional Office

KSPCB

Baikampady, Mangalore-11

Dear Sir,

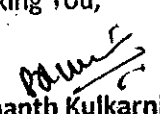
Sub: Submission of Environmental Monitoring Report for the Month of April 2016,
Production Report for April, 2016 & Returns Regarding Water Consumed for the
Month of April 2016

Ref: CFO No. PCB/245/HPI/2015-16/881 dated 25th August, 2015

With respect to the above subject; we are herewith submitting the following Environmental Monitoring Reports, Production reports & Returns Regarding Water Consumed in the Month of April 2016 respectively, enclosed herewith.

1. Ambient Air Quality Monitoring at 5 different locations in and around OMPL, enclosed as Annexure- A
2. Water Analysis Reports at 9 different locations in and around OMPL, as Annexure-B
3. Noise Level Monitoring Report at OMPL, as Annexure-C
4. Treated Effluent Analysis Report -D
5. Returns Regarding Water Consumed, for the Month of April 2016, as Annexure-E
6. Production Report as Annexure-F

Thanking You,


Prashanth Kulkarni
Manager (TS)

REGIONAL OFFICE
Karnataka State Pollution Control Board
Plot No. 10 - B, 1st Floor, 3rd Cross, 3rd Stage, 3rd Block, 3rd Phase, 3rd Area
Mangalore - 574 509

CC: Member Secretary, KSPCB, Bangalore
CC: Head (Technical), MSEZ
CC: CEO, OMPL for info

ANNEXURE - I

Form-1 (Rule 4)
Returns Regarding Water Consumed during the Month of Apr., 2016

Name and address of the Consumer	Purpose for which water consumed	Reading at the beginning of the first day of the calendar month under report	Reading at the end of the last day of the calendar month under report	Quantity of Water Consumed in Kilo Liters	If the meter was out of order, the monthly average consumption of water for the previous 3 months of the working period	Quantity of water qualifying for rebate according to the assessee	Remarks
M/s ONGC Mangalore Petrochemicals Limited, Mangalore Special Economic Zone, Permude, Mangalore -574 509	Industrial cooling, spraying in mine pits or boiler feed						
	Cooling Water	0	107747	107747			
	Boiler Feed Water	0	71665	71665			
	Fire Water	0	43374	43374			
	Domestic purpose						
	Drinking Water & Sanitation Processing whereby water gets polluted and the pollutants are easily bio-degradable			2750			Flow through Running hours of pumps recorded
	Service Water						Subtracting total flow (by running hours of pumps) from BFW & CT consumption
Total Consumption				4500 230036			

Signature of the Consumer

Name

Prashanth Kulkarni, Manager(TS)

Address

M/s ONGC Mangalore Petrochemicals Limited, Mangalore Special Economic Zone, Permude, Mangalore -574 509




ANNEXURE-F

ONGC Mangalore Petrochemicals Limited

Production Details for April- 2016

Net Naptha Processed – 72913 MT

Sl. No.	Name of the Product	Quantity, MT
1	Paraxylene (Product)	36305
2	Benzene (Co product)	11049





ONGC Mangalore Petrochemicals Limited

(A Subsidiary of Mangalore Refinery & Petrochemicals Ltd.)

Mangalore Special Economic Zone, Permude, Mangaluru - 574 509

CIN : U40107KA2006PLC041258 Website : www.ompl.co.in

Phone : +91-824 2881518 Fax +91-824 2881539

REF: OMPL/PCB/PK/2016-17/

Date: 14/5/2016

To:

The Environmental Officer

Regional Office

KSPCB

Baikampady, Mangalore-11

Dear Sir,

Sub: Submission of Environmental Monitoring Report for the Month of April 2016,
Production Report for April, 2016 & Returns Regarding Water Consumed for the
Month of April 2016

Ref: CFO No. PCB/245/HPI/2015-16/881 dated 25th August, 2015

With respect to the above subject; we are herewith submitting the following Environmental Monitoring Reports, Production reports & Returns Regarding Water Consumed in the Month of April 2016 respectively, enclosed herewith.

1. Ambient Air Quality Monitoring at 5 different locations in and around OMPL, enclosed as Annexure- A
2. Water Analysis Reports at 9 different locations in and around OMPL, as Annexure-B
3. Noise Level Monitoring Report at OMPL, as Annexure-C
4. Treated Effluent Analysis Report -D
5. Returns Regarding Water Consumed, for the Month of April 2016, as Annexure-E
6. Production Report as Annexure-F

Thanking You,

Prashanth Kulkarni
Manager (TS)

CC: Member Secretary, KSPCB, Bangalore

CC: Head (Technical), MSEZ

CC: CEO, OMPL for info

Test Report

ANALYSIS REPORT OF AMBIENT AIR QUALITY

1. Name of the location : OMPL East Side
2. Name of the industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Spécial Economic Zone, Permude
Mangalore-574509.
3. Sample Collected By : M/s. Environmental Health & Safety Research and
Development Centre, Bangalore – 560 010.
4. Particulars of Sample Collected : Ambient Air collected through
Fine Particulate Sampler – APM 550
Respirable Dust Sampler – 460NL,
CO & O₃ Analyzers.
5. Date of Collection : For the Month of April-2016 (Monitored for 24 hours)
6. Sample Number : EHSRDC/OMPL/A/16/04/155-1175

PARAMETERS	DAT	WK 62		WK 63		WK 64		WK 65	
		04/04/2016	05/04/2016	11/04/2016	12/04/2016	18/04/2016	19/04/2016	25/04/2016	26/04/2016
	CODE LIMITS	155	283	477	480	757	760	1081	1175
PM ₁₀ (µg/m ³)	100	59	60	67	62	67	60	66	60
PM _{2.5} (µg/m ³)	60	17	18	21	17	20	16	19	17
SO ₂ (µg/m ³)	80	2.50	2.44	2.41	2.54	2.44	2.07	2.50	2.09
NO ₂ (µg/m ³)	80	3.31	3.06	3.72	3.64	3.75	3.34	3.44	3.59
CO (mg/m ³)	4	0.72	0.84	0.74	0.79	0.79	0.72	0.78	0.79
O ₃ (µg/m ³)	180	0.85	0.95	0.85	0.87	0.87	0.83	0.89	0.88

Test Report

PARAMETERS	DATE	WK 62		WK 63		WK 64		WK 65	
		04/04/2016	05/04/2016	11/04/2016	12/04/2016	18/04/2016	19/04/2016	25/04/2016	26/04/2016
	CODE	155	283	477	480	757	760	1081	1175
	LIMITS								
NH ₃ (µg/m ³)	400	1.48	1.52	1.48	1.58	1.64	1.73	1.37	1.62
Lead (µg/m ³)	1	0.020	0.074	0.008	0.088	0.033	0.005	0.028	0.033
Arsenic (ng/m ³)	6	0.24	BDL	BDL	BDL	BDL	BDL	0.01	BDL
Nickel (ng/m ³)	20	1.64	0.84	1.60	1.63	0.67	0.47	1.12	1.11
Benzene (µg/m ³)	5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
B(a)P (ng/m ³)	1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

Note: BDL: Below Detectable Limit.

End of Report

Test Report

ANALYSIS REPORT OF AMBIENT AIR QUALITY

1. Name of the location : Shantigudda
2. Name of the industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Spécial Economic Zone, Permude
Mangalore-574509.
3. Sample Collected By : M/s. Environmental Health & Safety Research and
Development Centre, Bangalore – 560 010.
4. Particulars of Sample Collected : Ambient Air collected through
Fine Particulate Sampler – APM 550
Respirable Dust Sampler – 460NL,
CO & O₃ Analyzers.
5. Date of Collection : For the Month of April-2016 (Monitored for 24 hours)
6. Sample Number : EHSRDC/OMPL/A/16/04/154-1174

PARAMETERS	DATE	WK 62		WK 63		WK 64		WK 65	
		04/04/2016	05/04/2016	11/04/2016	12/04/2016	18/04/2016	19/04/2016	25/04/2016	26/04/2016
	CODE	154	282	476	479	756	759	1080	1174
	LIMITS	154	282	476	479	756	759	1080	1174
PM ₁₀ (µg/m ³)	100	64	56	64	60	64	62	64	67
PM _{2.5} (µg/m ³)	60	20	15	19	18	19	17	17	20
SO ₂ (µg/m ³)	80	2.21	2.35	2.35	2.24	2.37	2.19	2.38	2.33
NO ₂ (µg/m ³)	80	3.14	3.34	3.16	3.44	3.47	3.67	3.67	3.47
CO (mg/m ³)	4	0.81	0.79	0.81	0.83	0.76	0.84	0.80	0.81
O ₃ (µg/m ³)	180	0.94	0.90	0.91	0.93	0.85	0.95	0.91	0.92

Test Report

PARAMETERS	DATE	WK 62		WK 63		WK 64		WK 65	
		04/04/2016	05/04/2016	11/04/2016	12/04/2016	18/04/2016	19/04/2016	25/04/2016	26/04/2016
	CODE	154	282	476	479	756	759	1080	1174
	LIMITS								
NH ₃ (µg/m ³)	400	1.62	1.44	1.35	1.24	1.48	1.38	1.49	1.56
Lead (µg/m ³)	1	0.007	0.042	0.007	0.006	0.003	0.005	0.18	0.007
Arsenic (ng/m ³)	6	1.32	BDL	BDL	BDL	BDL	BDL	0.24	BDL
Nickel (ng/m ³)	20	1.77	0.56	1.50	1.17	0.98	1.50	0.32	0.96
Benzene (µg/m ³)	5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
B(a)P (ng/m ³)	1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

Note: BDL: Below Detectable Limit.

End of Report

Test Report

PARAMETERS	DATE	CODE	LIMITS	NH ₃ (µg/m ³)	Lead (µg/m ³)	Arsenic (ng/m ³)	Nickel (ng/m ³)	Benzene (µg/m ³)	B(a)P (ng/m ³)				
WK 62	06/04/2016	284	284	1.68	0.023	BDL	1.51	BDL	BDL	BDL	BDL	BDL	BDL
	07/04/2016	286	286	1.27	0.009	BDL	1.75	BDL	BDL	BDL	BDL	BDL	BDL
WK 63	13/04/2016	544	544	1.44	0.021	0.50	0.08	BDL	BDL	BDL	BDL	BDL	BDL
	14/04/2016	641	641	1.74	0.015	0.245	1.77	BDL	BDL	BDL	BDL	BDL	BDL
WK 64	20/04/2016	850	850	1.71	0.011	1.24	0.89	BDL	BDL	BDL	BDL	BDL	BDL
	21/04/2016	852	852	1.67	0.011	BDL	1.55	BDL	BDL	BDL	BDL	BDL	BDL
WK 65	27/04/2016	1307	1307	1.74	0.007	8.00	1.25	BDL	BDL	BDL	BDL	BDL	BDL
	28/04/2016	1427	1427	1.36	0.054	0.351	1.56	BDL	BDL	BDL	BDL	BDL	BDL

Note: BDL: Below Detectable Limit.

End of Report

Test Report

ANALYSIS REPORT OF AMBIENT AIR QUALITY

1. Name of the location : Tenka- Ekkar
2. Name of the industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Spécial Economic Zone, Permude
Mangalore-574509.
3. Sample Collected By : M/s. Environmental Health & Safety Research and
Development Centre, Bangalore – 560 010.
4. Particulars of Sample Collected : Ambient Air collected through
Fine Particulate Sampler – APM 550
Respirable Dust Sampler – 460NL,
CO & O₃ Analyzers.
5. Date of Collection : For the Month of April-2016 (Monitored for 24 hours)
6. Sample Number : EHSRDC/OMPL/A/16/04/284-1427

PARAMETERS	DATE	WK 62		WK 63		WK 64		WK 65	
		06/04/2016	07/04/2016	13/04/2016	14/04/2016	20/04/2016	21/04/2016	27/04/2016	28/04/2016
	CODE	284	286	544	641	850	852	1307	1427
	LIMITS	284	286	544	641	850	852	1307	1427
PM ₁₀ (µg/m ³)	100	66	59	56	63	59	57	62	64
PM _{2.5} (µg/m ³)	60	20	17	15	17	15	14	19	18
SO ₂ (µg/m ³)	80	2.51	2.06	2.44	2.19	2.35	2.27	2.51	2.25
NO ₂ (µg/m ³)	80	3.47	3.69	3.14	3.52	3.19	3.75	3.29	3.54
CO (mg/m ³)	4	0.77	0.82	0.75	0.78	0.77	0.81	0.77	0.76
O ₃ (µg/m ³)	180	0.89	0.94	0.85	0.86	0.89	0.94	0.86	0.85

Test Report

ANALYSIS REPORT OF AMBIENT AIR QUALITY

1. Name of the location : Permude
2. Name of the industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Spécial Economic Zone, Permude
Mangalore-574509
3. Sample Collected By : M/s. Environmental Health & Safety Research and
Development Centre, Bangalore - 560 010.
4. Particulars of Sample Collected : Ambient Air collected through
Fine Particulate Sampler - APM 550
Respirable Dust Sampler - 460NL,
CO & O₃ Analyzers.
5. Date of Collection : For the Month of April-2016 (Monitored for 24
hours)
6. Sample Number : EHSRDC/OMPL/A/16/04/285-1428

PARAMETERS	DATE	WK 62		WK 63		WK 64		WK 65	
		07/04/2016	12/04/2016	14/04/2016	15/04/2016	21/04/2016	22/04/2016	28/04/2016	29/04/2016
	CODE	285	376	640	642	851	1014	1426	1428
	LIMITS								
PM ₁₀ (µg/m ³)	100	57	61	58	65	61	63	59	66
PM _{2.5} (µg/m ³)	60	16	19	15	19	18	18	15	19
SO ₂ (µg/m ³)	80	2.23	2.14	2.31	2.42	2.54	2.44	2.14	2.44
NO ₂ (µg/m ³)	80	3.80	3.54	3.80	3.29	3.42	3.49	3.09	3.24
CO (mg/m ³)	4	0.73	0.74	0.84	0.80	0.75	0.79	0.83	0.72
O ₃ (µg/m ³)	180	0.83	0.85	0.95	0.91	0.87	0.91	0.92	0.84

Test Report

PARAMETERS	DATE	WK 62		WK 63		WK 64		WK 65	
		07/04/2016	12/04/2016	14/04/2016	15/04/2016	21/04/2016	22/04/2016	28/04/2016	29/04/2016
	CODE	285	376	640	642	851	1014	1426	1428
	LIMITS								
NH ₃ (µg/m ³)	400	1.76	1.55	1.51	1.36	1.56	1.55	1.58	1.44
Lead (µg/m ³)	1	0.031	0.005	0.007	0.022	0.010	0.083	0.088	0.105
Arsenic (ng/m ³)	6	0.25	0.50	1.49	0.50	BDL	BDL	0.65	1.56
Nickel (ng/m ³)	20	1.01	1.51	1.49	1.52	1.72	1.91	0.96	0.98
Benzene (µg/m ³)	5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
B(a)P (ng/m ³)	1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

Note: BDL: Below Detectable Limit.

End of Report

Test Report

ANALYSIS REPORT OF AMBIENT AIR QUALITY

1. Name of the location : OMPL West Side
2. Name of the industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Spécial Economic Zone, Permude
Mangalore-574509
3. Sample Collected By : M/s. Environmental Health & Safety Research and
Development Centre, Bangalore - 560 010.
4. Particulars of Sample Collected : Ambient Air collected through
Fine Particulate Sampler - APM 550
Respirable Dust Sampler - 460NL,
CO & O₃ Analyzers.
5. Date of Collection : For the Month of April-2016 (Monitored for 24
hours)
6. Sample Number : EHSRDC/OMPL/A/16/04/153-1173

PARAMETERS	DATE	WK 62		WK 63		WK 64		WK 65	
		04/04/2016	05/04/2016	11/04/2016	12/04/2016	18/04/2016	19/04/2016	25/04/2016	26/04/2016
	CODE	153	281	475	478	755	758	1079	1173
	LIMITS	153	281	475	478	755	758	1079	1173
PM ₁₀ (µg/m ³)	100	61	62	58	55	57	54	58	56
PM _{2.5} (µg/m ³)	60	18	19	16	14	15	14	15	14
SO ₂ (µg/m ³)	80	2.10	2.17	2.05	2.17	2.28	2.53	2.20	2.18
NO ₂ (µg/m ³)	80	3.54	3.75	3.34	3.57	3.16	3.59	3.21	3.14
CO (mg/m ³)	4	0.76	0.75	0.76	0.72	0.80	0.75	0.74	0.73
O ₃ (µg/m ³)	180	0.87	0.85	0.86	0.84	0.91	0.84	0.86	0.85

Test Report

PARAMETERS	DATE	WK 62		WK 63		WK 64		WK 65	
		04/04/2016	05/04/2016	11/04/2016	12/04/2016	18/04/2016	19/04/2016	25/04/2016	26/04/2016
	CODE	153	281	475	478	755	758	1079	1173
	LIMITS								
NH ₃ (µg/m ³)	400	1.34	1.37	1.66	1.73	1.27	1.56	1.67	1.48
Lead (µg/m ³)	1	0.045	0.077	0.074	0.079	0.044	0.022	0.071	0.039
Arsenic (ng/m ³)	6	1.93	0.49	BDL	BDL	BDL	BDL	0.85	BDL
Nickel (ng/m ³)	20	1.08	0.09	1.15	1.25	1.09	1.39	1.91	1.05
Benzene (µg/m ³)	5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
B(a)P (ng/m ³)	1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

Note: BDL: Below Detectable Limit.

End of Report

Test Report

ANALYSIS REPORT OF FRESH WATER QUALITY

1. Name of the Location : GW1: Narayana Guru Community Hall, Permude
2. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Special Economic Zone, Permude
Mangalore-574509.
3. Sample Collected By : M/s. Environmental Health and Safety Research and
Development Centre, Bangalore - 560 010.
4. Date of Collection : 17.04.2016
5. Particulars of Sample Collected : Bore well water, Grab Sampling
6. Date of Sample Receipt : 18.04.2016
7. Sample Number : EHSRDC/OMPL/W/16/04/626
8. Protocol : APHA, 22nd Edition/IS: Standard

Sl.No	PARAMETERS	UNIT	Test Methods	Std. IS 10500:2012 (Second Revision)		Code
				DL	PL	
						GW1
						11622
1.	pH	--	4500H ⁺ B	6.5-8.5		7.86
2.	Colour	Hazen	IS 3025(Part-4):1983	5	15	<1
3.	Odour	--	IS 3025(Part-5):1983	Unobjectionable		Unobjectionable
4.	Taste	--	IS 3025(Part-8):1984	Agreeable		Agreeable
5.	Turbidity	NTU	2130 B	1	5	0.79
6.	Total Dissolved Solids	mg/L	2540 C	500	2000	104
7.	Total Hardness	mg/L	2340 C	200	600	51
8.	Calcium as Ca	mg/L	3500-Ca	75	200	10.4
9.	Magnesium as Mg	mg/L	3500 Mg B	30	100	6.07
10.	Sulphate as SO ₄	mg/L	4500-SO ₄ ²⁻	200	400	2.66
11.	Fluoride as F	mg/L	4500F D	1	1.5	0.72
12.	Nitrate as NO ₃	mg/L	4500-NO ₃ E	45		0.6
13.	Chloride as Cl	mg/L	4500-Cl B	250	1000	18.62
14.	Iron as Fe	mg/L	3500-Fe B	0.3		0.17
15.	Alkalinity	mg/L	2320 B	200	600	64
16.	Chromium Hexavalent	mg/L	3500 Cr B	---		BDL
17.	E-Coli	CFU/100ml	IS 15185:2002	Absent		Absent
18.	Total Coliform	CFU/100ml	IS 15185:2002	Absent		Absent

Note:- BDL- Below Detectable Limit, DL - Desirable Limit, PL - Permissible Limit.

INFERENCE	As per IS 10500:2012(Second Revision), Report Status: - The measured values for the above parameters for those standards have been specified were observed to be within the said standard.
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End of Report

Hareena
Authorized Signatory

Test Report

ANALYSIS REPORT OF FRESH WATER QUALITY

1. Name of the Location : GW2: Gagnet Labor Colony
2. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Spécial Economic Zone, Permude
Mangalore-574509.
3. Sample Collected By : M/s. Environmental Health and Safety Research and Development
Centre, Bangalore - 560 010.
4. Date of Collection : 17.04.2016
5. Particulars of Sample Collected : Bore well water, Grab Sampling
6. Date of Sample Receipt : 18.04.2016
7. Sample Number : EHSRDC/OMPL/W/16/04/627
8. Protocol : APHA, 22nd Edition/IS: Standard

Sl.No	PARAMETERS	UNIT	Test Methods	Std. IS 10500:2012 (Second Revision)		Code
				DL	PL	
						GW2 11623
1.	pH	--	4500H ⁺ B	6.5-8.5		7.57
2.	Colour	Hazen	IS 3025(Part-4):1983	5	15	<1
3.	Odour	--	IS 3025(Part-5):1983	Unobjectionable		Unobjectionable
4.	Taste	--	IS 3025(Part-8):1984	Agreeable		Agreeable
5.	Turbidity	NTU	2130 B	1	5	0.86
6.	Total Dissolved Solids	mg/L	2540 C	500	2000	112
7.	Total Hardness	mg/L	2340 C	200	600	70
8.	Calcium as Ca	mg/L	3500-Ca	75	200	14.4
9.	Magnesium as Mg	mg/L	3500 Mg B	30	100	8.26
10.	Sulphate as SO ₄	mg/L	4500-SO ₄ ²⁻	200	400	2.49
11.	Fluoride as F	mg/L	4500F D	1	1.5	0.85
12.	Nitrate as NO ₃	mg/L	4500-NO ₃ E	45		1.29
13.	Chloride as Cl	mg/L	4500-Cl B	250	1000	14.09
14.	Iron as Fe	mg/L	3500-Fe B	0.3		0.21
15.	Alkalinity	mg/L	2320 B	200	600	53
16.	Chromium Hexavalent	mg/L	3500 Cr B	---		BDL
17.	E-Coli	CFU/100ml	IS 15185:2002	Absent		Absent
18.	Total Coliform	CFU/100ml	IS 15185:2002	Absent		Absent

Note:- BDL- Below Detectable Limit, DL - Desirable Limit, PL - Permissible Limit.

INFERENCE

As per IS 10500:2012(Second Revision),
Report Status: - The measured values for the above parameters for those standards
have been specified were observed to be within the said standard.

End of Report

Praveena
Authorized Signatory

Test Report

ANALYSIS REPORT OF FRESH WATER QUALITY

1. Name of the Location : OW1: Tenka-Ekkar
2. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Special Economic Zone, Permude
Mangalore-574509
3. Sample Collected By : M/s. Environmental Health and Safety Research and
Development Centre, Bangalore - 560 010.
4. Date of Collection : 17.04.2016
5. Particulars of Sample Collected : Open well water, Grab Sampling
6. Date of Sample Receipt : 18.04.2016
7. Sample Number : EHSRDC/OMPL/W/16/04/628
8. Protocol : APHA, 22nd Edition/IS: Standard

Sl.No	PARAMETERS	UNIT	Test Methods	Std. IS 10500:2012 (Second Revision)		Code
				DL	PL	
						OW1
						11624
1.	pH	--	4500H ⁺ B	6.5-8.5		7.64
2.	Colour	Hazen	IS 3025(Part-4):1983	5	15	<1
3.	Odour	--	IS 3025(Part-5):1983	Unobjectionable		Unobjectionable
4.	Taste	--	IS 3025(Part-8):1984	Agreeable		Agreeable
5.	Turbidity	NTU	2130 B	1	5	0.85
6.	Total Dissolved Solids	mg/L	2540 C	500	2000	64
7.	Total Hardness	mg/L	2340 C	200	600	31
8.	Calcium as Ca	mg/L	3500-Ca	75	200	8.0
9.	Magnesium as Mg	mg/L	3500 Mg B	30	100	2.67
10.	Sulphate as SO ₄	mg/L	4500-SO ₄ ²⁻	200	400	BDL
11.	Fluoride as F	mg/L	4500F D	1	1.5	1.11
12.	Nitrate as NO ₃	mg/L	4500-NO ₃ E	45		0.29
13.	Chloride as Cl	mg/L	4500-Cl B	250	1000	13.59
14.	Iron as Fe	mg/L	3500-Fe B	0.3		0.18
15.	Alkalinity	mg/L	2320 B	200	600	31
16.	Chromium Hexavalent	mg/L	3500 Cr B	---		BDL
17.	E-Coli	CFU/100ml	IS 15185:2002	Absent		Absent
18.	Total Coliform	CFU/100ml	IS 15185:2002	Absent		Absent

Note:- BDL- Below Detectable Limit, DL - Desirable Limit, PL - Permissible Limit.

INFERENCE

As per IS 10500:2012(Second Revision),
Report Status:- The measured values for the above parameters for those standards
have been specified were observed to be within the said standard.

End of Report

Praveena
Authorized Signatory

Test Report

ANALYSIS REPORT OF FRESH WATER QUALITY

1. Name of the Location : OW3: Shanthiguda Village
2. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Special Economic Zone, Perumde
Mangalore-574509
3. Sample Collected By : M/s. Environmental Health and Safety Research and
Development Centre, Bangalore - 560 010.
4. Date of Collection : 17.04.2016
5. Particulars of Sample Collected : Open well water, Grab Sampling
6. Date of Sample Receipt : 18.04.2016
7. Sample Number : EHSRDC/OMPL/W/16/04/629
8. Protocol : APHA, 22nd Edition/IS: Standard

Sl.No	PARAMETERS	UNIT	Test Methods	Std. IS 10500:2012 (Second Revision)		Code
				DL	PL	
						OW2
						11625
1.	pH	--	4500H+ B	6.5-8.5		7.39
2.	Colour	Hazen	IS 3025(Part-4):1983	5	15	<1
3.	Odour	--	IS 3025(Part-5):1983	Unobjectionable		Unobjectionable
4.	Taste	--	IS 3025(Part-8):1984	Agreeable		Agreeable
5.	Turbidity	NTU	2130 B	1	5	0.56
6.	Total Dissolved Solids	mg/L	2540 C	500	2000	73
7.	Total Hardness	mg/L	2340 C	200	600	29
8.	Calcium as Ca	mg/L	3500-Ca	75	200	5.6
9.	Magnesium as Mg	mg/L	3500 Mg B	30	100	3.64
10.	Sulphate as SO ₄	mg/L	4500-SO ₄ ²⁻	200	400	BDL
11.	Fluoride as F	mg/L	4500F D	1	1.5	0.41
12.	Nitrate as NO ₃	mg/L	4500-NO ₃ E	45		0.29
13.	Chloride as Cl	mg/L	4500-Cl B	250	1000	12.58
14.	Iron as Fe	mg/L	3500-Fe B	0.3		0.15
15.	Alkalinity	mg/L	2320 B	200	600	24
16.	Chromium Hexavalent	mg/L	3500 Cr B	---		BDL
17.	E-Coli	CFU/100ml	IS 15185:2002	Absent		Absent
18.	Total Coliform	CFU/100ml	IS 15185:2002	Absent		Absent

Note:- BDL- Below Detectable Limit, DL - Desirable Limit, PL - Permissible Limit.

INFERENCE	As per IS 10500:2012(Second Revision), Report Status: - The measured values for the above parameters for those standards have been specified were observed to be within the said standard.
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End of Report

Praveena
Authorized Signatory

Test Report

ANALYSIS REPORT OF FRESH WATER QUALITY

1. Name of the Location : SW1: Near Flare Area, OMPL
2. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Spécial Economic Zone, Permude
Mangalore-574509.
3. Sample Collected By : M/s. Environmental Health and Safety Research and Development
Centre, Bangalore - 560 010.
4. Date of Collection : 17.04.2016
5. Particulars of Sample Collected : Surface outlet water, Grab Sampling
6. Date of Sample Receipt : 18.04.2016
7. Sample Number : EHSRDC/OMPL/W/16/04/630
8. Protocol : APHA, 22nd Edition/IS: Standard

Sl.No	PARAMETERS	UNIT	Test Methods	Std. IS 10500:2012 (Second Revision)		Code
				DL	PL	SW1 11626
1.	pH	--	4500H+ B	6.5-8.5		7.23
2.	Colour	Hazen	IS 3025(Part-4):1983	5	15	<1
3.	Odour	--	IS 3025(Part-5):1983	Unobjectionable		Unobjectionable
4.	Taste	--	IS 3025(Part-8):1984	Agreeable		Agreeable
5.	Turbidity	NTU	2130 B	1	5	1.03
6.	Total Dissolved Solids	mg/L	2540 C	500	2000	139
7.	Total Hardness	mg/L	2340 C	200	600	43
8.	Calcium as Ca	mg/L	3500-Ca	75	200	12.4
9.	Magnesium as Mg	mg/L	3500 Mg B	30	100	2.91
10.	Sulphate as SO ₄	mg/L	4500-SO ₄ ²⁻	200	400	5.67
11.	Fluoride as F	mg/L	4500F D	1	1.5	0.46
12.	Nitrate as NO ₃	mg/L	4500-NO ₃ E	45		2.85
13.	Chloride as Cl	mg/L	4500-Cl B	250	1000	24.66
14.	Iron as Fe	mg/L	3500-Fe B	0.3		0.21
15.	Alkalinity	mg/L	2320 B	200	600	36
16.	Chromium Hexavalent	mg/L	3500 Cr B	---		BDL
17.	E-Coli	CFU/100ml	IS 15185:2002	Absent		Absent
18.	Total Coliform	CFU/100ml	IS 15185:2002	Absent		Absent

Note:- BDL- Below Detectable Limit, DL - Desirable Limit, PL - Permissible Limit.

INFERENCE	As per IS 10500:2012(Second Revision), Report Status: - The measured values for the above parameters for those standards have been specified were observed to be within the said standard.
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***End of Report**

Haveena
Authorized Signatory

Test Report

ANALYSIS REPORT OF FRESH WATER QUALITY

1. Name of the Location : SW2 : Near Central Warehouse, OMPL
2. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Special Economic Zone, Permude
Mangalore-574509
3. Sample Collected By : M/s. Environmental Health and Safety Research and
Development Centre, Bangalore - 560 010.
4. Date of Collection : 17.04.2016
5. Particulars of Sample Collected : Surface inlet water, Grab Sampling
6. Date of Sample Receipt : 18.04.2016
7. Sample Number : EHSRDC/OMPL/W/16/04/631
8. Protocol : APHA, 22nd Edition/IS: Standard

Sl.No	PARAMETERS	UNIT	Test Methods	Std. IS 10500:2012 (Second Revision)		Code
				DL	PL	SW2
						11627
1.	pH	--	4500H ⁺ B	6.5-8.5		7.99
2.	Colour	Hazen	IS 3025(Part-4):1983	5	15	<1
3.	Odour	--	IS 3025(Part-5):1983	Unobjectionable		Unobjectionable
4.	Taste	--	IS 3025(Part-8):1984	Agreeable		Agreeable
5.	Turbidity	NTU	2130 B	1	5	1.04
6.	Total Dissolved Solids	mg/L	2540 C	500	2000	126
7.	Total Hardness	mg/L	2340 C	200	600	55
8.	Calcium as Ca	mg/L	3500-Ca	75	200	5.2
9.	Magnesium as Mg	mg/L	3500 Mg B	30	100	4.13
10.	Sulphate as SO ₄	mg/L	4500-SO ₄ ²⁻	200	400	13.59
11.	Fluoride as F	mg/L	4500F D	1	1.5	0.57
12.	Nitrate as NO ₃	mg/L	4500-NO ₃ E	45		3.29
13.	Chloride as Cl	mg/L	4500-Cl B	250	1000	29.12
14.	Iron as Fe	mg/L	3500-Fe B	0.3		0.25
15.	Alkalinity	mg/L	2320 B	200	600	44
16.	Chromium Hexavalent	mg/L	3500 Cr B	---		BDL
17.	E-Coli	CFU/100ml	IS 15185:2002	Absent		Absent
18.	Total Coliform	CFU/100ml	IS 15185:2002	Absent		Absent

Note:- BDL- Below Detectable Limit, DL - Desirable Limit, PL - Permissible Limit.

INFERENCE

As per IS 10500:2012(Second Revision),
Report Status: - The measured values for the above parameters for those standards
have been specified were observed to be within the said standard.

End of Report

Praveena
Authorized Signatory

Test Report

ANALYSIS REPORT OF FRESH WATER QUALITY

1. Name of the Location : GW3: L&T New Labor Colony
2. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Spécial Economic Zone, Permude
Mangalore-574509
3. Sample Collected By : M/s. Environmental Health and Safety Research and Development
Centre, Bangalore - 560 010.
4. Date of Collection : 17.04.2016
5. Particulars of Sample Collected : Bore well water ,Grab Sampling
6. Date of Sample Receipt : 18.04.2016
7. Sample Number : EHSRDC/OMPL/W/16/04/632
8. Protocol : APHA, 22nd Edition/IS: Standard

Sl.No	PARAMETERS	UNIT	Test Methods	Std. IS 10500:2012 (Second Revision)		Code
				DL	PL	GW3
						11628
1.	pH	--	4500H ⁺ B	6.5-8.5		7.61
2.	Colour	Hazen	IS 3025(Part-4):1983	5	15	<1
3.	Odour	--	IS 3025(Part-5):1983	Unobjectionable		Unobjectionable
4.	Taste	--	IS 3025(Part-8):1984	Agreeable		Agreeable
5.	Turbidity	NTU	2130 B	1	5	0.62
6.	Total Dissolved Solids	mg/L	2540 C	500	2000	169
7.	Total Hardness	mg/L	2340 C	200	600	84
8.	Calcium as Ca	mg/L	3500-Ca	75	200	20
9.	Magnesium as Mg	mg/L	3500 Mg B	30	100	8.26
10.	Sulphate as SO ₄	mg/L	4500-SO ₄ ²⁻	200	400	11.44
11.	Fluoride as F	mg/L	4500F D	1	1.5	0.49
12.	Nitrate as NO ₃	mg/L	4500-NO ₃ E	45		0.61
13.	Chloride as Cl	mg/L	4500-Cl B	250	1000	15.60
14.	Iron as Fe	mg/L	3500-Fe B	0.3		0.14
15.	Alkalinity	mg/L	2320 B	200	600	66
16.	Chromium Hexavalent	mg/L	3500 Cr B	---		BDL
17.	E-Coli	CFU/100ml	IS 15185:2002	Absent		Absent
18.	Total Coliform	CFU/100ml	IS 15185:2002	Absent		Absent

Note:- BDL- Below Detectable Limit, DL - Desirable Limit, PL - Permissible Limit.

INFERENCE

As per IS 10500:2012(Second Revision),
Report Status:- The measured values for the above parameters for those standards
have been specified were observed to be within the said standard.

End of Report

Paveena
Authorized Signatory

Test Report

ANALYSIS REPORT OF FRESH WATER QUALITY

1. Name of the Location : OW3: Permude Village
2. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Spécial Economic Zone, Permude
Mangalore-574509
3. Sample Collected By : M/s. Environmental Health and Safety Research and
Development Centre, Bangalore - 560 010.
4. Date of Collection : 17.04.2016
5. Particulars of Sample Collected : Open well water, Grab Sampling
6. Date of Sample Receipt : 18.04.2016
7. Sample Number : EHSRDC/OMPL/W/16/04/633
8. Protocol : APHA, 22nd Edition/IS: Standard

Sl.No	PARAMETERS	UNIT	Test Methods	Std. IS 10500:2012 (Second Revision)		Code
				DL	PL	
						OW3
						11629
1.	pH	--	4500H+ B	6.5-8.5		7.36
2.	Colour	Hazen	IS 3025(Part-4):1983	5	15	<1
3.	Odour	--	IS 3025(Part-5):1983	Unobjectionable		Unobjectionable
4.	Taste	--	IS 3025(Part-8):1984	Agreeable		Agreeable
5.	Turbidity	NTU	2130 B	1	5	0.52
6.	Total Dissolved Solids	mg/L	2540 C	500	2000	188
7.	Total Hardness	mg/L	2340 C	200	600	81
8.	Calcium as Ca	mg/L	3500-Ca	75	200	21.2
9.	Magnesium as Mg	mg/L	3500 Mg B	30	100	6.80
10.	Sulphate as SO ₄	mg/L	4500-SO ₄ ²⁻	200	400	20.99
11.	Fluoride as F	mg/L	4500F D	1	1.5	0.31
12.	Nitrate as NO ₃	mg/L	4500-NO ₃ E	45		0.61
13.	Chloride as Cl	mg/L	4500-Cl B	250	1000	12.58
14.	Iron as Fe	mg/L	3500-Fe B	0.3		0.019
15.	Alkalinity	mg/L	2320 B	200	600	59
16.	Chromium Hexavalent	mg/L	3500 Cr B	---		BDL
17.	E-Coli	CFU/100ml	IS 15185:2002	Absent		Absent
18.	Total Coliform	CFU/100ml	IS 15185:2002	Absent		Absent

Note:- BDL- Below Detectable Limit, DL - Desirable Limit, PL - Permissible Limit.

INFERENCE

As per IS 10500:2012(Second Revision),
Report Status: - The measured values for the above parameters for those standards
have been specified were observed to be within the said standard.

End of Report

Praveena
Authorized Signatory

Test Report

ANALYSIS REPORT OF FRESH WATER QUALITY

1. Name of the Location : GW4: OMPL (Near ETP)
2. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Special Economic Zone, Permude
Mangalore-574509
3. Sample Collected By : M/s. Environmental Health and Safety Research and
Development Centre, Bangalore - 560 010.
4. Date of Collection : 17.04.2016
5. Particulars of Sample Collected : Bore well water, Grab Sampling
6. Date of Sample Receipt : 18.04.2016
7. Sample Number : EHSRDC/OMPL/W/16/04/634
8. Protocol : APHA, 22nd Edition/IS: Standard

Sl.No	PARAMETERS	UNIT	Test Methods	Std. IS 10500:2012 (Second Revision)		Code
				DL	PL	GW4 11630
1.	pH	--	4500H+ B	6.5-8.5		7.38
2.	Colour	Hazen	IS 3025(Part-4):1983	5	15	<1
3.	Odour	--	IS 3025(Part-5):1983	Unobjectionable		Unobjectionable
4.	Taste	--	IS 3025(Part-8):1984	Agreeable		Agreeable
5.	Turbidity	NTU	2130 B	1	5	1.13
6.	Total Dissolved Solids	mg/L	2540 C	500	2000	132
7.	Total Hardness	mg/L	2340 C	200	600	68
8.	Calcium as Ca	mg/L	3500-Ca	75	200	19.6
9.	Magnesium as Mg	mg/L	3500 Mg B	30	100	4.61
10.	Sulphate as SO ₄	mg/L	4500-SO ₄ ²⁻	200	400	13.59
11.	Fluoride as F	mg/L	4500F D	1	1.5	0.57
12.	Nitrate as NO ₃	mg/L	4500-NO ₃ E	45		0.92
13.	Chloride as Cl	mg/L	4500-Cl B	250	1000	34.23
14.	Iron as Fe	mg/L	3500-Fe B	0.3		0.11
15.	Alkalinity	mg/L	2320 B	200	600	49
16.	Chromium Hexavalent	mg/L	3500 Cr B	---		BDL
17.	E-Coli	CFU/100ml	IS 15185:2002	Absent		Absent
18.	Total Coliform	CFU/100ml	IS 15185:2002	Absent		Absent

Note:- BDL- Below Detectable Limit, DL - Desirable Limit, PL - Permissible Limit.

INFERENCE

As per IS 10500:2012(Second Revision),

Report Status: - The measured values for the above parameters for those standards
have been specified were observed to be within the said standard.

End of Report

Haveena
Authorized Signatory

Test Report

AMBIENT NOISE LEVEL MONITORING REPORT

1. Name of the Project : M/s. ONGC Mangalore Petrochemicals Limited,
Mangalore Spécial Economic Zone,
Permude.Mangalore-574509.
2. Sample Collected by : M/s. Environmental Health and Safety Research &
Development Centre, Bangalore - 560 010.
3. Date of Collection : 23.04.2016
4. Particulars of Sample Collected : Ambient Noise Level collected through
Sound Level Meter C-390
5. Date of Sample Receipt : 26.04.2016
6. Sample Number : EHSRDC/OMPL/N/16/04/ 1015-1018
7. Method Adopted : Instrument Method

Code No	Sample Location	Parameters		Std.
		Day Time dB(A)	Night Time dB(A)	75.0 dB(A) Day
1015	OMPL East Side Boundary	68.91	51.20	70.0 dB(A) Night
1016	OMPL West Side Boundary	65.75	53.60	
1017	OMPL North Side Boundary	64.25	52.09	
1018	OMPL South Side Boundary	66.22	53.58	

Note :

- Day Time is reckoned between 6 A.M and 10 P.M
- Night Time is reckoned between 10 P.M and 6 A.M
- L_{eq} : It is energy mean of the noise level over a specified period.
- *dB (A) L_{eq} denotes the time weighted average of the level of sound in decibels on scale A which is relatable to human hearing.
- A "decibel" is a unit in which noise is measured.
- "A", in dB (A) L_{eq} , denotes the frequency weighting in the measurement of noise and corresponds to Frequency response characteristics of the human ear.

End of Report

Praveena
Authorized Signatory

Test Report

ANALYSIS REPORT OF EFFLUENT QUALITY

1. Name of the Location : Guard pond Pump Discharge
2. Name of the Project : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Spécial Economic Zone, Permude
Mangalore-574509.
3. Sample Collected by : M/s. Environmental Health and Safety Research &
Development Centre, Bangalore – 560 010.
4. Date of Collection : 17.04.2016
5. Particulars of Sample Collected : ETP Guard Pond Discharge Treated Effluent, Grab Sampling
6. Date of Sample Receipt : 18.04.2016
7. Sample Number : EHSRDC/OMPL/ WW/16/04/635
8. Analysis started on : 18.04.2016
9. Analysis Completed on : 21.04.2016
10. Page No. : 01 of 2
11. Report to be Sent : 21.04.2016
12. Protocol : APHA, 22nd Edition/IS Method

Sl.No	Parameters	Test Methods	Unit	Result	Tolerance limit
1.	pH	IS 3025(Part-11) :1983	-	7.01	6.0-8.5
2.	Colour*	IS 3025(Part-4) :1983	Hazen	<1	All efforts should be made to remove colour and unpleasant odour as for as practicable.
3.	Odour*	IS 3025(Part-5) :1983	--	Unobjectionable	
4.	Temperature	APHA 2550 B	°C	25	Shall not exceed 5° above the receiving water temperature.
5.	Particle Size of suspended solids*	-	-	Passes	(a)Settle able solids Max.850 microns
6.	B.O.D (3 days in 27°C)	5210 B	mg/L	9	15
7.	C.O.D	5220 B	mg/L	56	125
8.	Total Suspended Solids	2540 D	mg/L	18	20
9.	Phosphate as PO ₄	4500- P D	mg/L	0.24	3
10.	Total Kjeldahl Nitrogen	4500- Norg B	mg/L	19.6	40
11.	Oil & Grease	5520 B	mg/L	BDL	5
12.	Total residual chlorine	APHA 4500- Cl	mg/L	BDL	1
13.	Free ammonia*	IS 3025 (part 34)	mg/L	1.68	5

Praveena
Authorized Signatory

Test Report

Sample Number: EHSRDC/OMPL/ WW/16/04/635

Page No: 02 of 02

14.	Ammonical Nitrogen	4500- NH ₃ ,B,C	mg/L	5.88	15
15.	Hexavalent Chromium	3500- Cr B	mg/L	BDL	0.1
16.	Sulphide	IS 3025 (part 29): 1986	mg/L	0.8	1.0
17.	Fluoride as F	IS 3025(Part 60): 2008	mg/L	0.21	1.5
18.	Nitrate as NO ₃	IS 3025(Part 34) :1988	mg/L	7.81	20
19.	Iron as Fe	IS 3025(Part 53):2003	mg/L	0.49	3
20.	Mercury as Hg*	IS 3025(Part-48):1994	mg/L	BDL	0.01
21.	Lead as Pb*	IS 3025(Part 47):1994	mg/L	0.002	2
22.	Cadmium as Cd*	IS 3025(Part 41):1992	mg/L	BDL	0.1
23.	Selenium as Se*	IS 3025(Part 56):2003	mg/L	0.001	0.05
24.	Arsenic as As*	IS 3025(Part 37):1988	mg/L	0.005	0.2
25.	Zinc as Zn*	IS 3025(Part 49):1994	mg/L	0.137	5
26.	Copper as Cu*	IS 3025(Part-42):1992	mg/L	0.002	1
27.	Manganese as Mn*	3111 B	mg/L	0.628	2
28.	Vanadium*	3500 -V	mg/L	BDL	0.1
29.	Nickel as Ni*	IS 13428:2005 (Annex L)	mg/L	0.015	1
30.	Total chromium*	IS 13428:2005(Annex J)	mg/L	0.004	2
31.	Benzene*	APHA 6200 B	mg/L	BDL	0.1
32.	Benzo (a) pyrene*	APHA 6440	µg/l	BDL	0.2
33.	Bioassay*	IS 6582	% survivality	100%	90% survival of fish after 96 hrs, in 100% effluent
34.	Phenolic compounds	IS 3025 (part 43):1992	mg/L	BDL	0.35
35.	Cyanide	IS 3025 (Part 27):1986	mg/L	BDL	0.2

*are not accredited by NABL.

Note: BDL: Below Detectable Limit.

INFERENCE	As per Tolerance limit, Report Status: - The measured values for the above parameters for those standards have been specified were observed to be within the said standard.
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End of Report

Haveena
Authorized Signatory

Form-1 (Rule 4)
Returns Regarding Water Consumed during the Month of Apr., 2016

Name and address of the Consumer	Purpose for which water consumed	Reading at the beginning of the first day of the calendar month under report	Reading at the end of the last day of the calendar month under report	Quantity of Water Consumed in Kilo Liters	If the meter was out of order, the monthly average consumption of water for the previous 3 months of the working period	Quantity of water qualifying for rebate according to the assessee	Remarks
M/s ONGC Mangalore Petrochemicals Limited, Mangalore Special Economic Zone, Permude, Mangalore -574 509	Industrial cooling, spraying in mine pits or boiler feed						
	Cooling Water	0	107747	107747			
	Boiler Feed Water	0	71665	71665			
	Fire Water	0	43374	43374			
	Domestic purpose						
	Drinking Water & Sanitation Processing whereby water gets polluted and the pollutants are easily bio-degradable			2750			Flow through Running hours of pumps recorded
	Service Water			4500			Subtracting total flow (by running hours of pumps) from BFW & CT consumption
Total Consumption				230036			

Signature of the Consumer

Name Prashanth Kulkarni, Manager(TS)

Address M/s ONGC Mangalore Petrochemicals Limited, Mangalore Special Economic Zone, Permude, Mangalore -574 509

ONGC Mangalore Petrochemicals Limited

Production Details for April- 2016

Net Naptha Processed – 72913 MT

Sl. No.	Name of the Product	Quantity, MT
1	Paraxylene (Product)	36305
2	Benzene (Co product)	11049