Mangalore SEZ Limited
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Urwa Stores, Mangalore - 575 006
Phone: 0824-2452748 / 2452750
Fax: 0824-2452749
Website: www.mangaloresez.com
CIN: U45209KA2006PLC038590

MSEZL/MNG/EN/2015-16

28 Dec 2015

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	Will be complied.

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Received 31/12/15

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S. No.	A. SPECIFIC CONDITIONS	Compliance
	activities in the Coastal Regulation Zone-I areas.	
(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:- a) Implementation of recommendation of NGPRI will be started by MRPL immediately after submission of their report. b) 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. c) 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. d) 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. Around 1219 families has been compensated with R&R Package out of 1231 families. The 1219 families have vacated their houses and the process is in progress for the balance.

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S. No.	A. SPECIFIC CONDITIONS	Compliance
		NIO has carried out EIA, Risk Assessment, DMP and Bathymetry survey along with Marine Outfall pipeline 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.
(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 Coastal Regulation Zone and the marine areas.	
(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 NOx 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 is under progress and this will be completed by end of March 2016.
(x)	The gaseous emissions (SO2, NOx, 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 13th 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.

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S. No.	A. SPECIFIC CONDITIONS	Compliance
(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 Department shall be associated for this purpose and requisite budget earmarked.	Since inception MSEZL has completed Green Belt development in 154 acres. In the year 2015-16, during the first phase **24,750 saplings** will be planted in **55 acres** land 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_2O, 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	Ambient Air Quality Monitoring is being carried out regularly in five locations and the locations of monitoring are selected in

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S. No.	A. SPECIFIC CONDITIONS	Compliance
	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.	consultation with KSPCB. The reports of monitored data attached as **Annexure-I.**
(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 AAQME stations the data will be transferred to CPCB & SPCB regularly.
(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	Noted and will be complied.

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S. No.	A. SPECIFIC CONDITIONS	Compliance
	measurements may be installed.	
(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.
(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 attached as **Annexure-II.**
(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	Noted and will be complied.

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S. No	B. GENERAL CONDITIONS	Compliance
	Control Board (SPCB) and the State Government.	
(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 proposed pipeline cum road Corridor in Reach-II area. 3. 18th June 2015 for development of Multi Product Units as Mangalore SEZ. Copy of amendments attached as **Annexure-III.**
(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 19th May 1993 and 31st 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.

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S. No	B. GENERAL CONDITIONS	Compliance
(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 13th July 2012. MRPL shall be complying conditions relevant to them as part of their existing clearance.
(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 submitting to MoEF/KSPCB on regular basis for every six months and it 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.

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S. No	B. GENERAL CONDITIONS	Compliance
(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.
(xiv)	A separate environment management cell with full fledge 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. 13th 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- IV**
(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.

S. No	EC Amendment conditions dtd. 27th 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.

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S. No	EC Amendment conditions dtd. 27th Sep 2014	Compliance
(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. Amendment copies of MSEZ Phase-I project.
3. Environmental compliance report & Environmental Monitoring Reports from OMPL.

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

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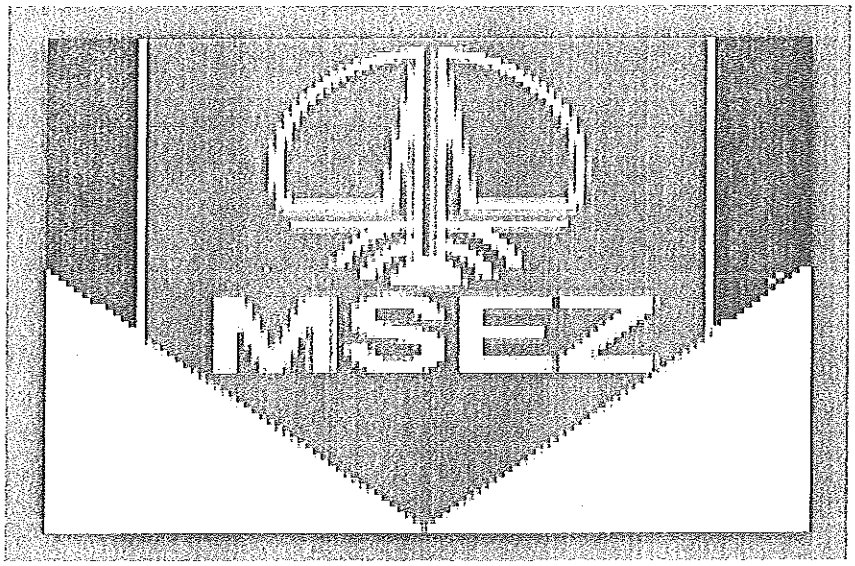
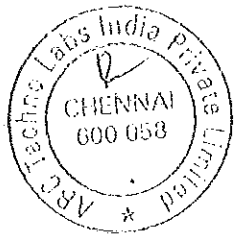
ENVIRONMENTAL MONITORING REPORT

SPECIAL ECONOMIC ZONE LIMITED, MANGALORE



JUNE - 2015

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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ANNEXURE

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).
- 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 **June 2015** is to conduct ambient air quality monitoring at five locations. Sampling Locations each station 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 ($PM_{2.5}$) 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 Adapted for Ambient Air Quality Sampling and Analysis

S.NO	PARAMETER	TECHNIQUE	MINIMUM DETECTABLE LIMIT
1	Particulate Matter PM_{10}	Fine Particulate Sampler (Gravimetric method)	5.0 µg/m³
2	Particulate Matter $PM_{2.5}$	Fine Particulate Sampler (Gravimetric method)	5.0 µg/m³
3	Sulphur di Oxide	Modified West & Gaeke Method	5.0 µg/m³
4	Nitrogen Oxide	Jacob and Hochheiser Method	5.0 µg/m³
5	Carbon monoxide	Gas Analyser	0.1 ppm
6	Ammonia	Nessler's Method	5 µg/m³
7	Ozone	KI Absorption and Colorimetric	5 µg/m³
8	Benzene,	IS 5182: Pt 11: 2006	0.01 µg/m³
9	Benzo[a]pyrene)	IS 5182: Pt 12: 1991	0.1 ng/m³
10	Lead,	IS 5182 P 22: 2004	0.1 µg/m³
11	Arsenic, Nickel	IS 5182 P 22: 2004	1 ng/m³

2.1.2. Micro-Meteorology

Wind Speed, Predominant Wind Direction, Temperature, Relative Humidity between 01-06-2015 and 30-06-2015 at MSEZ is given in Table 1.3.

Table-1.3- Micro-Meteorology

DATE	TEMPERATURE (°C)		RELATIVE HUMIDITY (%)		WIND SPEED (Km/hr)		PREDOMINANT WIND DIRECTION
	MIN	MAX	MIN	MAX	MIN	MAX	
01.06.2015	22	29	56	94	5.6	14.8	Northwest
02.06.2015	22	25	84	95	5.6	18.5	East Southeast
03.06.2015	23	26	73	96	5.6	18.5	East Southeast
04.06.2015	23	31	77	94	5.6	14.8	East
05.06.2015	24	32	51	93	5.6	18.5	West
06.06.2015	24	27	79	94	5.6	22.2	West Northwest
07.06.2015	23	28	71	96	5.6	22.2	Southwest
08.06.2015	22	28	75	100	7.4	14.8	East Southeast
09.06.2015	23	30	59	99	5.6	11.1	Southwest
10.06.2015	23	27	85	95	5.6	24.1	Northeast
11.06.2015	23	25	92	100	3.7	33.3	East Southeast
12.06.2015	23	25	83	97	9.3	16.7	East Southeast
13.06.2015	22	30	84	97	5.6	22.2	West
14.06.2015	24	30	69	89	9.3	29.6	Southwest
15.06.2015	24	29	76	94	7.4	24.1	west Southwest
16.06.2015	24	29	70	97	5.6	22.2	Southwest
17.06.2015	23	25	91	98	5.6	22.2	South Southwest
18.06.2015	23	24	95	98	5.6	7.4	East Southeast
19.06.2015	24	29	75	96	7.4	14.8	East Southeast
20.06.2015	23	27	78	99	5.6	11.1	East
21.06.2015	24	30	65	94	5.6	20.4	East
22.06.2012	24	26	89	97	7.4	16.7	West Northwest
23.06.2015	23	29	71	96	5.6	20.4	North Northwest
24.06.2015	24	28	77	92	9.3	22.4	West
25.06.2015	24	29	72	92	9.3	29.6	West Southwest
26.06.2015	24	30	68	96	5.6	31.5	West
27.06.2015	23	28	76	96	2.6	20.4	East
28.06.2015	23	26	80	97	5.6	14.8	East
29.06.2015	22	29	64	94	5.6	14.8	East
30.06.2015	23	30	64	97	5.6	14.8	East Southeast

2.1.3. Wind Rose

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

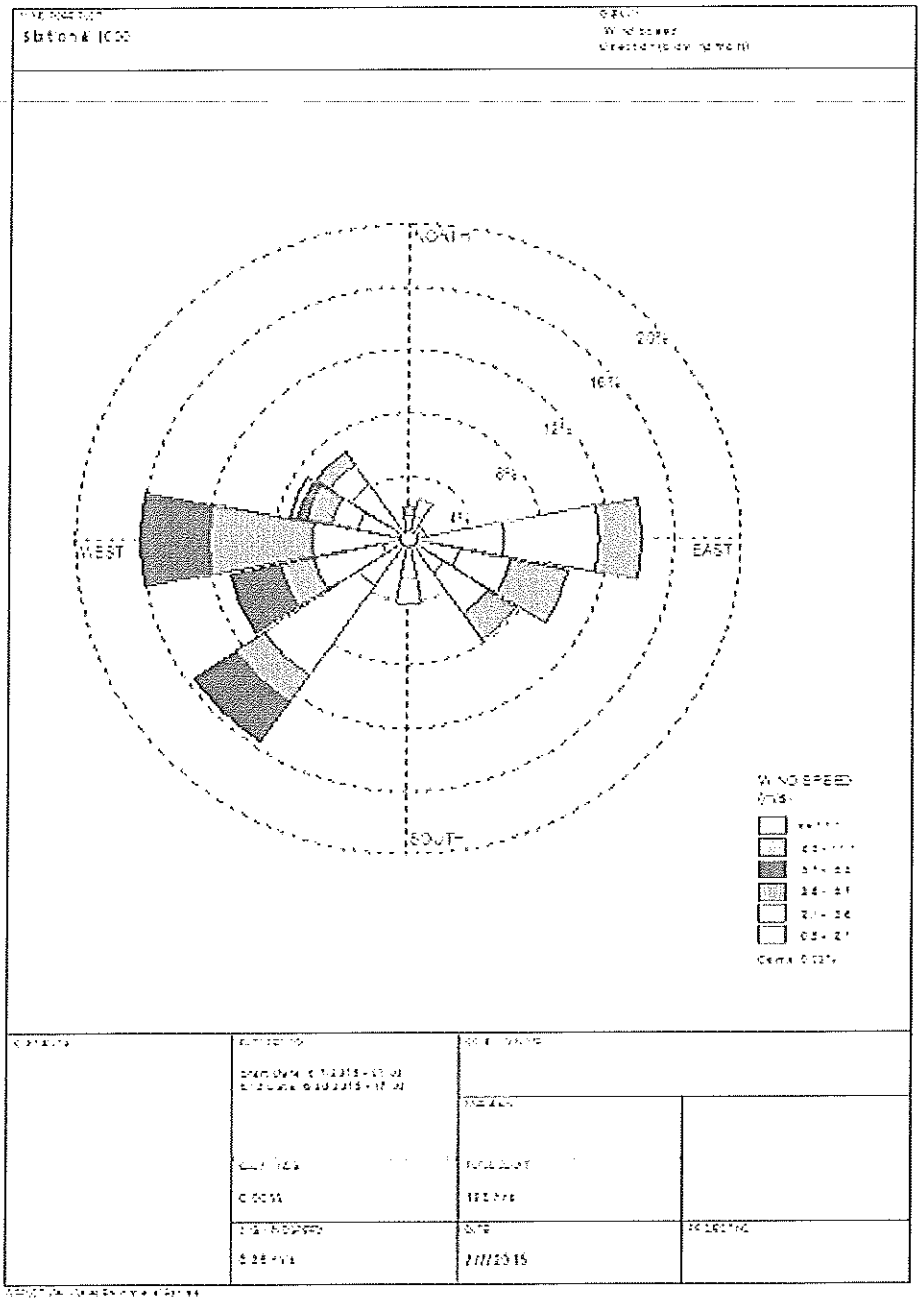

Figure -1.1. Wind Rose Diagram- **June 2015**

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 **June 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/14/AS/160615/A 507-508
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	16-06-2015 (Monitoring duration 24hrs/day for 2 days)
REPORT DATE	01-07-2015

S.No	Location	Height GL(m)	Pollutant Concentration in µg/m³						
			$PM_{2.5}$	PM_{10}	SO_2	NOx	Pb	NH_3	O_3
1	CETP Location	2	17	48	6.3	12.2	BDL (<0.1)	13.6	7.1
2	MSEZ-GSS 3	2	22	52	7.8	14.2	BDL (<0.1)	10.1	6.8
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

Table 1.4(b) - AMBIENT AIR QUALITY REPORT

SAMPLE ID NO	ABC/MSEZ/14/AS/160615/A 507-508
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	16-06-2015 (Monitoring duration 24hrs/day for 2 days)
REPORT DATE	01-07-2015

S.No	Location	Pollutant Concentration				CO, mg/m³
		Benzene µg/m³	Benzo[a]pyrene ng/m³	Arsenic ng/m³	Nickel ng/m³	
1	CETP Location	BDL (<0.01)	BDL (<0.1)	BDL (<1)	BDL (<1)	0.11
2	MSEZ-GSS 3	BDL (<0.01)	BDL (<0.1)	BDL (<1)	BDL (<1)	0.17
Test Method		IS 5182: Pt 11: 2006	IS 5182: Pt 12: 1991	IS 5182 Pt 22	IS 5182 Pt 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.,

AUTHORIZED SIGNATORY

QUALITY MANAGER

Table 1.4(c) - AMBIENT AIR QUALITY REPORT

SAMPLE ID NO	ABC/MSEZ/14/AS/160615/A 509
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	16-06-2015 (Monitoring duration 24hrs/day for 2 days)
REPORT DATE	01-07-2015

S.No	Location	Height GL(m)	Pollutant Concentration in µg/m³						
			$PM_{2.5}$	PM_{10}	SO_2	NOx	Pb	NH_3	O_3
3	Baipe	2	15.6	42	5.1	9.5	BDL (<0.1)	BDL(<5)	6.7
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

Table 1.4(d) - AMBIENT AIR QUALITY REPORT

SAMPLE ID NO	ABC/MSEZ/14/AS/160615/A 509
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	16-06-2015 (Monitoring duration 24hrs/day for 2 days)
REPORT DATE	01-07-2015

S.No	Location	Pollutant Concentration				CO, mg/m³
		Benzene µg/m³	Benzo[a]pyrene ng/m³	Arsenic ng/m³	Nickel ng/m³	
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.,

AUTHORIZED SIGNATORY

QUALITY MANAGER

Table 1.4(e) - AMBIENT AIR QUALITY REPORT

SAMPLE ID NO	ABC/MSEZ/14/AS/180615/A 510-511
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	18-06-2015 (Monitoring duration 24hrs/day for 2 days)
REPORT DATE	01-07-2015

S.No	Location	Height GL(m)	Polluant Concentration in µg/m³						
			$PM_{2.5}$	PM_{10}	SO_2	NOx	Pb	NH_3	O_3
4	120 ML, Water Reservoir	2	21	56	6.6	13.7	BDL (<0.1)	14	8.2
5	MSEZ, Permude	2	16	45	5.7	8.6	BDL (<0.1)	BDL (<5)	7.3
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.....

ABC Techno Labs India Private Limited CHENNAI 600 058

For ABC Techno Labs India Private Limited.,

AUTHORIZED SIGNATORY

QUALITY MANAGER

Table 1.4(f) - AMBIENT AIR QUALITY REPORT

SAMPLE ID NO	ABC/MSEZ/14/AS/180615/A 510-511
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	18-06-2015 (Monitoring duration 24hrs/day for 2 days)
REPORT DATE	01-07-2015

S.No	Location	Pollutant Concentration				CO, mg/m³
		Benzene µg/m³	Benzo[a]pyrene ng/m³	Arsenic ng/m³	Nickel ng/m³	
4	120 ML, Water Reservoir	BDL (<0.01)	BDL (<0.1)	BDL (<1)	BDL (<1)	0.14
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.....

ABC Techno Labs India Private Limited CHENNAI 600 058

For ABC Techno Labs India Private Limited.,

AUTHORIZED SIGNATORY

ENVIRONMENTAL MONITORING REPORT

SPECIAL ECONOMIC ZONE LIMITED, MANGALORE

JULY - 2015

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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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).
- 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 July 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 (PM_{10}) and 2.5 µm ($PM_{2.5}$) respectively. Gascous 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/m³
2	Particulate Matter $PM_{2.5}$	Fine Particulate Sampler (Gravimetric method)	5.0 µg/m³
3	Sulphur di Oxide	Modified West & Gaeke Method	5.0 µg/m³
4	Nitrogen Oxide	Jacob and Hochheiser Method	5.0 µg/m³
5	Carbon monoxide	Gas Analyser	0.1 ppm
6	Ammonia	Nessler's Method	5 µg/m³
7	Ozone	KI Absorption and Colorimetric	5 µg/m³
8	Benzene,	IS 5182: Pt 11: 2006	0.01 µg/m³
9	Benzo[a]pyrene)	IS 5182: Pt 12: 1991	0.1 ng/m³
10	Lead,	IS 5182 P 22: 2004	0.1 µg/m³
11	Arsenic, Nickel	IS 5182 P 22: 2004	1 ng/m³

2.1.2. Micro-Meteorology :

Wind Speed, Predominant Wind Direction, Temperature, Relative Humidity between 01-07-2015 and 31-07-2015 at MSEZ is given in Table 1.3.

Table-1.3- Micro-Meteorology

DATE	TEMPERATURE (°C)		RELATIVE HUMIDITY (%)		WIND SPEED (Km/hr)		PREDOMINANT WIND DIRECTION
	MIN	MAX	MIN	MAX	MIN	MAX	
01-07-2015	25	30	79	95	5.6	14.8	Northeast
02-07-2015	27	31	70	89	5.6	18.5	West
03-07-2015	25	28	84	94	5.6	9.3	East North East
04-07-2015	25	30	74	100	5.6	22.2	North Northwest
05-07-2015	26	30	70	94	7.4	14.8	West Northwest
06-07-2015	26	30	70	89	5.6	18.5	West Northwest
07-07-2015	27	30	74	89	5.6	22.2	West
08-07-2015	26	30	74	100	7.4	16.7	West
09-07-2015	24	24	94	100	5.6	13.0	North North east
10-07-2015	24	29	84	100	5.6	24.1	West Northwest
11-07-2015	25	29	84	94	5.6	16.7	south
12-07-2015	23	28	89	94	5.6	11.1	South Southeast
13-07-2015	24	30	79	100	5.6	14.8	North Northwest
14-07-2015	25	29	79	94	5.6	9.3	North Northwest
15-07-2015	25	26	90	100	5.6	11.1	North Northwest
16-07-2015	25	30	84	100	5.6	13.0	West Northwest
17-07-2015	25	30	79	100	7.4	14.8	West Northwest
18-07-2015	25	27	85	94	5.6	22.2	West
19-07-2015	24	24	90	100	7.4	18.5	North Northeast
20-07-2015	23	28	89	94	5.6	18.5	West
21-07-2015	25	29	81	100	5.6	13.0	West Northwest
22-07-2015	27	29	79	89	9.3	22.2	Northwest
23-07-2015	25	28	82	94	5.6	16.7	West Southwest
24-07-2015	23	28	69	94	5.6	11.1	West
25-07-2015	26	28	79	97	5.6	7.4	East
26-07-2015	24	29	74	100	5.6	22.2	South
27-07-2015	24	26	88	100	5.6	13.0	North Northeast
28-07-2015	25	30	70	94	7.4	16.7	West Northwest
29-07-2015	24	30	84	100	5.6	18.5	West Northwest
30-07-2015	25	29	77	94	5.6	14.8	West Northwest
31-07-2015	24	26	92	100	5.6	7.4	East SouthEast

2.1.3. Wind Rose:

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

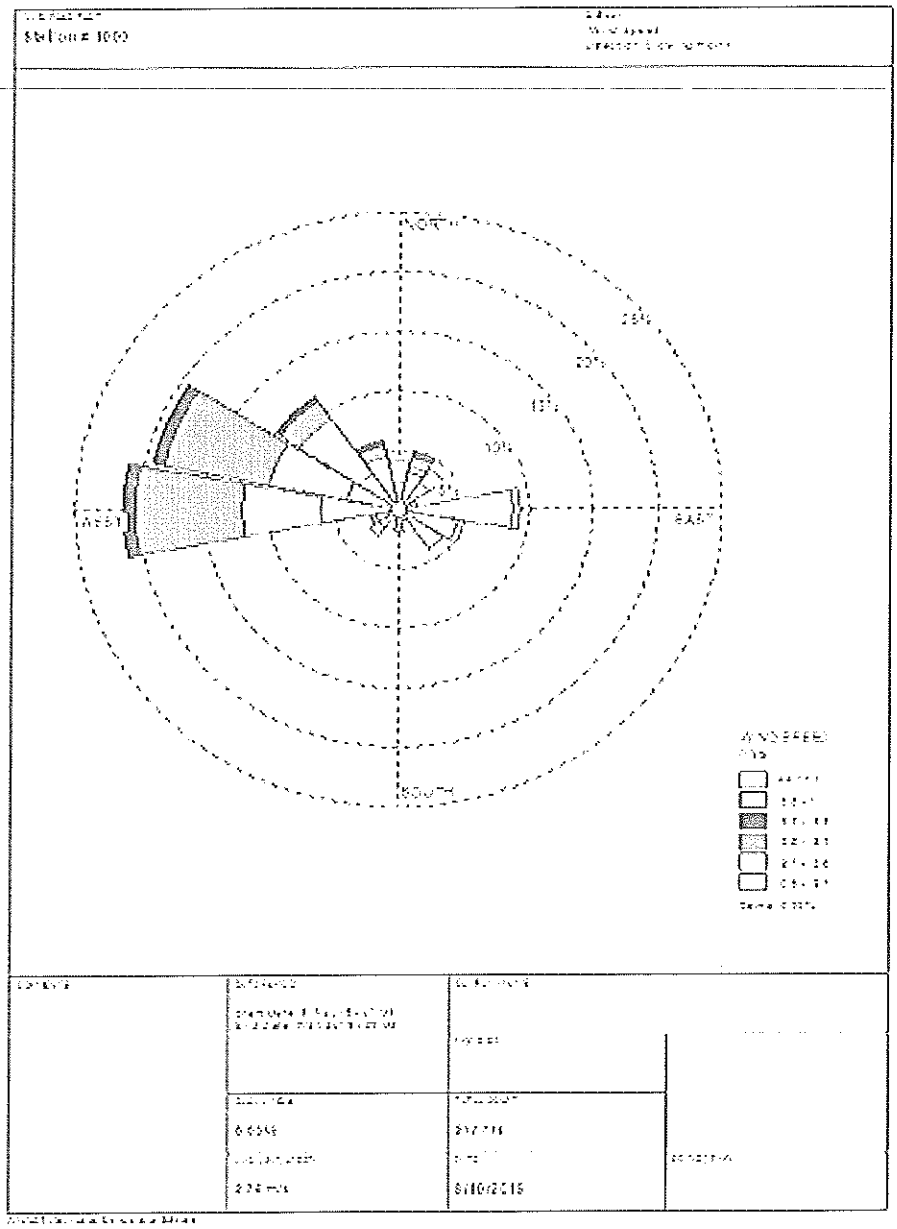

Figure 1.1. Wind Rose Diagram – July 2015

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 **July 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/15/AS/230715/A 709-710
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	23-07-2015 (Monitoring duration 24hrs/day for 2 days)
REPORT DATE	08-08-2015

S.No	Location	Height GL(m)	Pollutant Concentration in µg/m³						
			$PM_{2.5}$	PM_{10}	SO_2	NOx	Pb	NH_3	O_3
1	CETP Location	2	20	48	7.3	13.1	BDL (<0.1)	12.9	8.4
2	MSEZ-GSS 3	2	21	51	7.7	14.9	BDL (<0.1)	15.2	9.1
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.,

AUTHORIZED SIGNATORY

Table 1.4(b) - AMBIENT AIR QUALITY REPORT

SAMPLE ID NO	ABC/MSEZ/15/AS/230715/A 709-710
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	23-07-2015 (Monitoring duration 24hrs/day for 2 days)
REPORT DATE	08-08-2015

S.No	Location	Pollutant Concentration				CO, mg/m³
		Benzene µg/m³	Benzo[a]pyrene ng/m³	Arsenic ng/m³	Nickel ng/m³	
1	CETP Location	BDL (<0.01)	BDL (<0.1)	BDL (<1)	BDL (<1)	0.10
2	MSEZ-GSS 3	BDL (<0.01)	BDL (<0.1)	BDL (<1)	BDL (<1)	0.16
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.....

ABC Techno Labs India Private Limited CHENNAI 600 058

For ABC Techno Labs India Private Limited.,

AUTHORIZED SIGNATORY

Table 1.4(c) - AMBIENT AIR QUALITY REPORT

SAMPLE ID NO	ABC/MSEZ/15/AS/230715/A 711
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	23-07-2015 (Monitoring duration 24hrs/day for 2 days)
REPORT DATE	08-082015

S.No	Location	Height GL(m)	Pollutant Concentration in µg/m³						
			$PM_{2.5}$	PM_{10}	SO_2	NOx	Pb	NH_3	O_3
3	Baipe	2	16.4	42	5.4	10.8	BDL (<0.1)	8.1	7.7
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.....

ABC Techno Labs India Private Limited CHENNAI 600 058

For ABC Techno Labs India Private Limited.,

AUTHORIZED SIGNATORY

Table 1.4(d) - AMBIENT AIR QUALITY REPORT

SAMPLE ID NO	ABC/MSEZ/15/AS/230715/A 711
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	23-07-2015 (Monitoring duration 24hrs/day for 2 days)
REPORT DATE	08-08-2015

S.No	Location	Pollutant Concentration				CO, mg/m³
		Benzene µg/m³	Benzo[a]pyrene ng/m³	Arsenic ng/m³	Nickel ng/m³	
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.....

ABC Techno Labs India Private Limited CHENNAI 600 058

For ABC Techno Labs India Private Limited.,

AUTHORIZED SIGNATORY

Table 1.4(e) - AMBIENT AIR QUALITY REPORT

SAMPLE ID NO	ABC/MSEZ/15/AS/250715/A 712-713
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	25-07-2015 (Monitoring duration 24hrs/day for 2 days)
REPORT DATE	08-08-2015

S.No	Location	Height GL(m)	Pollutant Concentration in µg/m³						
			$PM_{2.5}$	PM_{10}	SO_2	NOx	Pb	NH_3	O_3
4	120 Ml, Water Reservoir	2	18.5	47	5.9	12.6	BDL (<0.1)	10.4	8.7
5	MSEZ, Permude	2	20.6	44	5	9.7	BDL (<0.1)	8.3	7.6
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.....

ABC Techno Labs India Private Limited CHENNAI 600 058

For ABC Techno Labs India Private Limited.,

AUTHORIZED SIGNATORY

Table 1.4(f) - AMBIENT AIR QUALITY REPORT

SAMPLE ID NO	ABC/MSEZ/15/AS/250715/A 712-713
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	25-07-2015 (Monitoring duration 24hrs/day for 2 days)
REPORT DATE	08-08-2015

S.No	Location	Pollutant Concentration				CO, mg/m³
		Benzene µg/m³	Benzo[a]pyrene ng/m³	Arsenic ng/m³	Nickel ng/m³	
4	120 ML, Water Reservoir	BDL (<0.01)	BDL (<0.1)	BDL (<1)	BDL (<1)	0.12
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.....

ABC Techno Labs India Private Limited CHENNAI 600 058

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3.0. 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)".**

3.1.1. Water Sampling Locations.

The details of the water sampling stations are presented in the Table 1.5

Table 1.5- Water Sampling Locations

Location Code	Date Sampled	Location	Type of water	Geographical Location
W1	25/07/2015	120 ML Water Storage	Ground water	N-12°58'57.70" E-74°51'30.10"
W2	25/07/2015	Stream -Permude	Surface water	N-12°59'51.40" E-74°51'24.70"
W3	25/07/2015	Near OMPL	Ground water	N-12°58'32.70" E-74°52'10.60"
W4	25/07/2015	Permude Bajpe Village Boundary	Ground water	N-12°59'54.00" E-74°52'53.60"
W5	25/07/2015	Road Cum Pipeline Corridor -Kalavar	Ground water	N-12°58'45.10" E-74°51'16.40"
W6	25/07/2015	Oddidakale - Bajpe	Ground water	N-12°58'32.80" E-74°52'10.40"
W7	25/07/2015	Chandrahasa Nagar	Ground water	N-12°58'44.90" E-74°51'16.50"
W8	25/07/2015	Permude	Ground water	N-12°59'12.50" E-74°52'34.30"
W9	25/07/2015	CETP Location	Ground water	N-12°59'51.40" E-74°51'24.70"
W10	25/07/2015	Shyanti Gudda-Bajpe	Ground water	N-12°59'54.00" E-74°52'53.40"

3.1.2. Water Quality Results

The physicochemical characteristics of water in the project area are presented in the Table 1.6 (a) and Table 1.6 (b) and are compared with the standards (IS:10500:2012) Indian Standards/Specifications for Drinking Water) reference values.

Table 1.6(a) - Ground water Quality Results

Sl. No	PARAMETERS	UNIT	LIMIT AS PER IS 10500 : 2012	W1	W2	W3	W4	W5
1	Colour	Pt-Co	5	Nil	1	1	1	Nil
2	Odour	-	Unobjectionable	No Odour Observed	No Odour Observed	No Odour Observed	No Odour Observed	No Odour Observed
3	pH at 25°C	-	6.5-8.5	6.56	6.56	7.16	6.50	7.54
4	Electrical Conductivity,	µS/cm	Not Specified	90	58	284	115	222
5	Turbidity	NTU	1	0.9	3.1	1	0.90	0.6
6	Total Dissolved Solids	mg/l	500	47	31	148	66	118
7	Total Hardness as $CaCO_3$	mg/l	200	20	12	98	34	76
8	Total Alkalinity as $CaCO_3$	mg/l	200	16	6	84	24	60
9	Chloride as Cl	mg/l	250	13	11	16	11	31
10	Sulphate as SO_4	mg/l	200	5.4	BDL(<1)	13	5.2	6
11	Fluoride as F	mg/l	1	0.34	0.30	0.34	0.29	0.34
12	Nitrate as NO_3	mg/l	45	2.4	4.4	BDL(<0.1)	9.3	BDL(<1)
13	Silica as SiO_2	mg/l	Not Specified	9.4	9.2	10.56	5.4	52.7
14	Copper as Cu	mg/l	0.05	BDL(<0.03)	BDL(<0.03)	BDL(<0.03)	BDL(<0.03)	0.05
15	Zinc as Zn	mg/l	5	0.08	0.04	0.09	BDL (<0.005)	BDL (<0.005)
16	Manganese as Mn	mg/l	0.10	BDL(<0.02)	BDL(<0.02)	BDL(<0.02)	BDL(<0.02)	BDL (<0.05)
17	Sodium as Na	mg/l	Not Specified	6.8	4.9	18	9.3	18
18	Potassium as K	mg/l	Not Specified	1.3	1.1	4	2.9	2.7
19	Calcium as Ca	mg/l	75	4.8	4	30	8.8	15.4
20	Magnesium as Mg	mg/l	30	2	BDL(<1)	5.8	3	9.1
21	Iron as Fe	mg/l	0.3	0.19	0.27	0.25	0.08	0.08
22	Lead as Pb	mg/l	0.01	BDL(<0.01)	BDL(<0.01)	BDL(<0.01)	BDL(<0.01)	BDL(<0.03)
23	Mercury as Hg	mg/l	0.001	BDL (<0.001)	BDL (<0.001)	BDL (<0.001)	BDL (<0.001)	BDL (<0.001)
24	Cadmium as Cd	mg/l	0.003	BDL (<0.001)	BDL (<0.001)	BDL (<0.001)	BDL (<0.001)	BDL(<0.01)
25	Arsenic as As	mg/l	0.01	BDL(<0.01)	BDL(<0.01)	BDL(<0.01)	BDL(<0.01)	BDL(<0.01)
26	Chromium as Cr^{6+}	mg/l	0.05	BDL(<0.01)	BDL(<0.01)	BDL(<0.01)	BDL(<0.01)	BDL(<0.01)
27	Volatile Organic Compounds	mg/l	Not Specified	BDL(<0.01)	BDL(<0.01)	BDL(<0.01)	BDL(<0.01)	BDL(<0.01)

BDL-Below Detection Limit **.....End of Report.....**

ABC Techno Labs India Private Limited CHENNAI 600 058

For ABC Techno Labs India Private Limited.,

AUTHORIZED SIGNATORY 02/02/16

Table 1.6(b) - Ground water Quality Results

Sl. No	PARAMETERS	UNIT	LIMIT AS PER IS 10500 : 2012	W6	W7	W8	W9	W10
1	Colour	Pt-Co	5	Nil	Nil	Nil	1	Nil
2	Odour	-	Unobjectionable	No Odour Observed	No Odour Observed	No Odour Observed	No Odour Observed	No Odour Observed
3	pH at 25°C	-	6.5-8.5	7.17	6.51	7.64	8.46	6.71
4	Electrical Conductivity,	µS/cm	Not Specified	328	116	240	135	394
5	Turbidity	NTU	1	BDL(<0.5)	0.6	0.6	0.7	BDL (<0.5)
6	Total Dissolved Solids	mg/l	500	186	65	125	72	206
7	Total Hardness as $CaCO_3$	mg/l	200	128	12	76	30	32
8	Total Alkalinity as $CaCO_3$	mg/l	200	86	18	86	30	14
9	Chloride as Cl	mg/l	250	2.9	17	8	12	70
10	Sulphate as SO_4	mg/l	200	64	2	12	17	6.6
11	Fluoride as F	mg/l	1	0.31	0.33	0.32	0.31	0.38
12	Nitrate as NO_3	mg/l	45	BDL(<1)	7	1	1.1	69
13	Silica as SiO_2	mg/l	Not Specified	56.6	6.7	71	4.9	7.3
14	Copper as Cu	mg/l	0.05	BDL(<0.03)	BDL(<0.03)	BDL(<0.03)	BDL(<0.03)	BDL(<0.03)
15	Zinc as Zn	mg/l	5	0.09	0.05	0.05	0.07	0.04
16	Manganese as Mn	mg/l	0.10	BDL(<0.05)	BDL(<0.05)	BDL(<0.05)	BDL(<0.05)	BDL(<0.05)
17	Sodium as Na	mg/l	Not Specified	9	12.6	16	8.1	32
18	Potassium as K	mg/l	Not Specified	4.1	3.1	5.6	4.2	7.7
19	Calcium as Ca	mg/l	75	30	4.8	22	10.4	8.8
20	Magnesium as Mg	mg/l	30	12.9	1	5.3	1	2.4
21	Iron as Fe	mg/l	0.3	BDL(<0.05)	BDL(<0.05)	BDL(<0.05)	0.24	BDL (<0.05)
22	Lead as Pb	mg/l	0.01	BDL(<0.03)	BDL(<0.03)	BDL(<0.01)	BDL(<0.01)	BDL(<0.01)
23	Mercury as Hg	mg/l	0.001	BDL (<0.001)	BDL (<0.001)	BDL (<0.001)	BDL (<0.001)	BDL (<0.001)
24	Cadmium as Cd	mg/l	0.003	BDL(<0.01)	BDL(<0.01)	BDL (<0.001)	BDL (<0.001)	BDL (<0.001)
25	Arsenic as As	mg/l	0.01	BDL(<0.01)	BDL(<0.01)	BDL(<0.01)	BDL(<0.01)	BDL(<0.01)
26	Chromium as Cr^{6+}	mg/l	0.05	BDL(<0.01)	BDL(<0.01)	BDL(<0.01)	BDL(<0.01)	BDL(<0.01)
27	Volatile Organic Compounds	mg/l	Not Specified	BDL(<0.01)	BDL(<0.01)	BDL(<0.01)	BDL(<0.01)	BDL(<0.01)

BDL-Below Detection Limit **.....End of Report.....**

For ABC Techno Labs India Private Limited.,

ABC Techno Labs India Private Limited CHENNAI 600 058

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ANNEXURE-I

रजिस्ट्री सं० डी० एल०-33004/99 REGD. NO. D. L.-33004/99

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, सं0 95-डी/3, इंडस्ट्रियल एस्टेट, अम्बतूर, चेन्नई - 600058 (तमिलनाडु)	(1) डॉ0 जी सुंदर (2) श्री पी0 सेंथिल कुमार (3) श्री ए0 रॉबसन चिन्नदुरै	06.08.2014 से 05.08.2019
122	मैसर्स एडवर्ड फुड रिसर्च एंड एनैलसस सेन्टर, सुभाष नगर, पी03ओ0 नीलगंज बाजार, पी0एस0 बारासात, जिला0 नार्थ 24 पीजीएस,कोलकाता - 700121 (पश्चिम बंगाल)	(1) डॉ0 देवोतम बनर्जी (2) श्री अलोके कुमार दत्ता (3) श्री सुरेश कुमार मंडल	06.08.2014 से 05.08.2019
123	मैसर्स कीवी ईको लेबोरेटरिज प्राइवेट लिमिटेड, प्लॉट सं0 19, एसवाई सं0 343, एलिप, इंडस्ट्रियल एस्टेट, गज्जुलरमरम गाँव, कुथ्बुल्लपुर (एमडी), जिला रंगारेड्डी, (तेलँगाना)	(1) डॉ0 रजनी कुमारी (2) श्री एन0पी0 विश्वनाथ (3) डॉ0 पी0 सरिता	06.08.2014 से 05.08.2019
124	मैसर्स नवेगा इंवायरो इंजीनियर्स एंड कन्साल्टेन्ट, रवि चैंबर्स, प्लॉट नं0 100/1, मकान सं0 1-96/100, कवुरि हिल्स, मधापुर, हैदराबाद - 500033 (तेलँगाना)	(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 सं0 841 - ए, रसुलगढ़ , भुवनेश्वर - 751010 (ओडिशा)	(1) डॉ0 देवाशीष बिस्वाल (2) डॉ0 रेखा नायक	06.08.2014 से

	(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.

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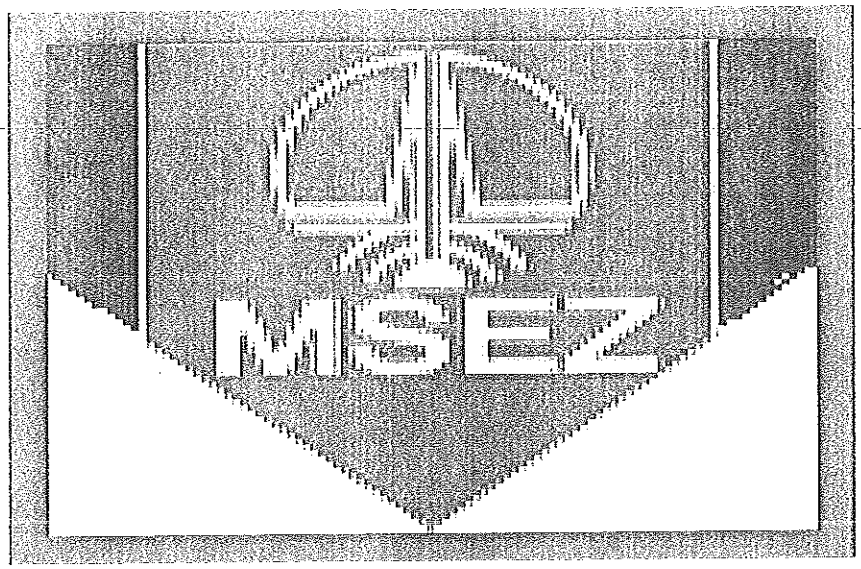
COPY

ENVIRONMENTAL MONITORING REPORT

SPECIAL ECONOMIC ZONE LIMITED, MANGALORE



AUGUST - 2015

Prepared by:

ABC Techno Labs India Private Limited CHENNAI 600 058

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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ANNEXURE

ABC Techno Labs India Limited CHENNAI 600 058

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).
- 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 August 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 (PM_{10}) and 2.5 µm ($PM_{2.5}$) 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/m³
2	Particulate Matter $PM_{2.5}$	Fine Particulate Sampler (Gravimetric method)	5.0 µg/m³
3	Sulphur di Oxide	Modified West & Gaeke Method	5.0 µg/m³
4	Nitrogen Oxide	Jacob and Hochheiser Method	5.0 µg/m³
5	Carbon monoxide	Gas Analyser	0.1 ppm
6	Ammonia	Nessler's Method	5 µg/m³
7	Ozone	KI Absorption and Colorimetric	5 µg/m³
8	Benzene,	IS 5182: Pt 11: 2006	0.01 µg/m³
9	Benzo[a]pyrene)	IS 5182: Pt 12: 1991	0.1 ng/m³
10	Lead,	IS 5182 P 22: 2004	0.1 µg/m³
11	Arsenic, Nickel	IS 5182 P 22: 2004	1 ng/m³

2.1.2. Micro-Meteorology :

Wind Speed, Predominant Wind Direction, Temperature, Relative Humidity between 01-08-2015 and 31-08-2015 at MSEZ is given in Table 1.3.

Table-1.3- Micro-Meteorology

DATE	TEMPERATURE (°C)		RELATIVE HUMIDITY (%)		WIND SPEED (Km/hr)		PREDOMINANT WIND DIRECTION
	MIN	MAX	MIN	MAX	MIN	MAX	
01-08-2015	22	27	84	96	5.6	14.8	North Northeast
02-08-2015	23	29	68	100	9.3	25.9	Northwest
03-08-2015	23	28	80	97	5.6	22.2	East North East
04-08-2015	23	27	81	100	5.6	13	Southwest
05-08-2015	23	29	79	100	5.6	20.4	West Northwest
06-08-2015	22	29	72	100	5.6	24.1	West Northwest
07-08-2015	22	29	72	100	11.1	29.6	West Northwest
08-08-2015	23	28	70	100	5.6	18.4	West
09-08-2015	22	27	84	100	5.6	9.3	West Northwest
10-08-2015	23	28	82	100	5.6	25.9	Northwest
11-08-2015	23	29	79	100	7.4	25.9	Northwest
12-08-2015	24	27	83	94	5.6	27.8	West Northwest
13-08-2015	23	28	73	94	5.6	24.1	West Northwest
14-08-2015	23	28	75	100	7.4	18.5	North Northwest
15-08-2015	24	29	77	100	5.6	18.5	West Northwest
16-08-2015	23	29	69	95	7.4	22.2	West Northwest
17-08-2015	24	30	64	100	5.6	14.8	North
18-08-2015	25	31	55	94	5.6	20.4	North Northwest
19-08-2015	25	30	66	94	7.4	20.4	West
20-08-2015	25	31	54	94	5.6	22.2	West Southwest
21-08-2015	24	29	74	100	5.6	18.5	West Southwest
22-08-2015	24	29	67	94	5.6	18.5	North Northeast
23-08-2015	23	29	71	95	5.6	22.2	North Northwest
24-08-2015	23	29	62	100	5.6	22.2	North Northwest
25-08-2015	23	30	63	100	7.4	25.9	North Northwest
26-08-2015	23	29	68	94	5.6	18.5	North Northwest
27-08-2015	23	28	75	92	5.6	18.5	Northwest
28-08-2015	22	30	64	94	5.6	14.8	West Southwest
29-08-2015	23	30	63	100	7.4	29.6	North Northwest
30-08-2015	23	30	68	94	5.6	22.2	Southeast
31-08-2015	23	30	56	100	5.6	13	Southeast

2.1.3. Wind Rose:

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

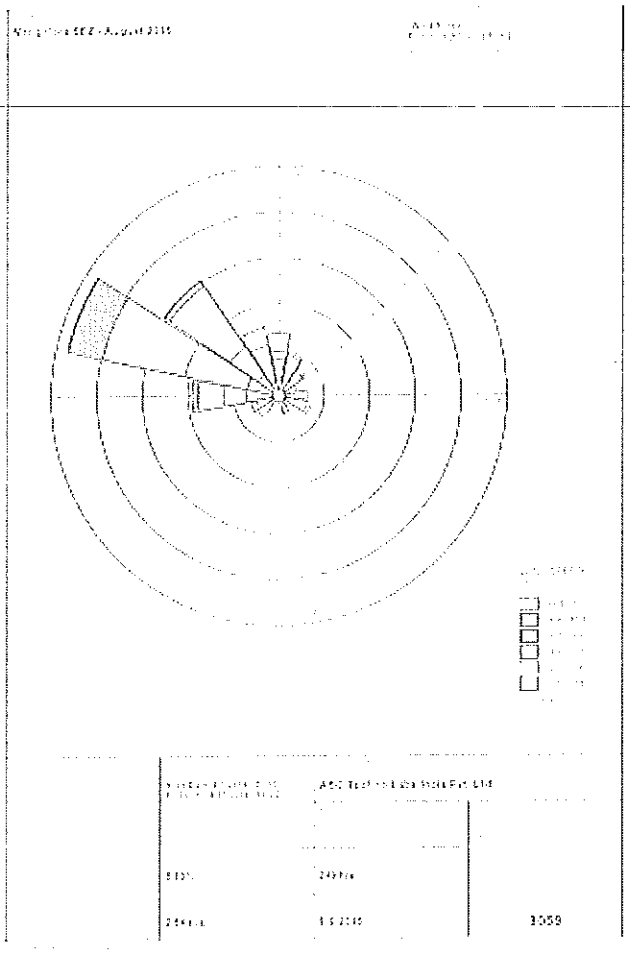

Figure 1.1. Wind Rose Diagram – August 2015

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 **August 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/16/AS/260815/A 891-892
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	26-08-2015 (Monitoring duration 24hrs/day for 2 days)
REPORT DATE	07-09-2015

S.No	Location	Height GL(m)	Pollutant Concentration in µg/m³						
			$PM_{2.5}$	PM_{10}	SO_2	NOx	Pb	NH_3	O_3
1	CETP Location	2	17.2	53.1	9.2	12.6	BDL (<0.1)	10.8	8.6
2	MSEZ-GSS 3	2	18.3	48.6	6.8	13.3	BDL (<0.1)	16	8.1
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.,

09/09/15

AUTHORIZED SIGNATORY

QUALITY MANAGER

Table 1.4(b) - AMBIENT AIR QUALITY REPORT

SAMPLE ID NO	ABC/MSEZ/16/AS/260815/A 891-892
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	26-08-2015 (Monitoring duration 24hrs/day for 2 days)
REPORT DATE	07-09-2015

S.No	Location	Pollutant Concentration				CO, mg/m³
		Benzene µg/m³	Benzo[a]pyrene ng/m³	Arsenic ng/m³	Nickel ng/m³	
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)	0.13
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.,

AUTHORIZED SIGNATORY

09/09/15

QUALITY MANAGER

Table 1.4(c) - AMBIENT AIR QUALITY REPORT

SAMPLE ID NO	ABC/MSEZ/16/AS/260815/A 893
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	26-08-2015 (Monitoring duration 24hrs/day for 2 days)
REPORT DATE	07-09-2015

S.No	Location	Height GL(m)	Pollutant Concentration in µg/m³						
			$PM_{2.5}$	PM_{10}	SO_2	NOx	Pb	NH_3	O_3
3	Baipe	2	16.1	40.4	5.1	9.8	BDL (<0.1)	7.3	6.8
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.....

ABC Techno Labs India Private Limited CHENNAI 600 058

For ABC Techno Labs India Private Limited.,

AUTHORIZED SIGNATORY

QUALITY MANAGER

Table 1.4(d) - AMBIENT AIR QUALITY REPORT

SAMPLE ID NO	ABC/MSEZ/16/AS/260815/A 893
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	26-08-2015 (Monitoring duration 24hrs/day for 2 days)
REPORT DATE	07-09-2015

S.No	Location	Pollutant Concentration				CO, mg/m³
		Benzene µg/m³	Benzo[a]pyrene ng/m³	Arsenic ng/m³	Nickel ng/m³	
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.,

AUTHORIZED SIGNATORY

QUALITY MANAGER

Table 1.4(e) - AMBIENT AIR QUALITY REPORT

SAMPLE ID NO	ABC/MSEZ/16/AS/280815/A 894-895
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	28-08-2015 (Monitoring duration 24hrs/day for 2 days)
REPORT DATE	07-09-2015

S.No	Location	Height GL(m)	Pollutant Concentration in µg/m³						
			$PM_{2.5}$	PM_{10}	SO_2	NOx	Pb	NH_3	O_3
4	120 ML, Water Reservoir	2	19.6	50.8	8.7	13.1	BDL (<0.1)	12.3	9.5
5	MSEZ, Permude	2	17.6	46.1	5.6	10.2	BDL (<0.1)	7.6	8.4
Test Method			EPA- 40 CFR Part 50	IS 5182 Pt.23 : 2006	West & Gacke	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

09/09/15

QUALITY MANAGER

Table 1.4(f) - AMBIENT AIR QUALITY REPORT

SAMPLE ID NO	ABC/MSEZ/16/AS/280815/A 894-895
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	28-08-2015 (Monitoring duration 24hrs/day for 2 days)
REPORT DATE	07-09-2015

S.No	Location	Pollutant Concentration				CO, mg/m³
		Benzene µg/m³	Benzo[a]pyrene ng/m³	Arsenic ng/m³	Nickel ng/m³	
4	120 ML, Water Reservoir	BDL (<0.01)	BDL (<0.1)	BDL (<1)	BDL (<1)	0.12
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

QUALITY MANAGER

ANNEXURE-I

रजिस्ट्री सं० डी० एल० 33004/99 REGD. NO. D. L.-33004/99

भारत का राजपत्र
The Gazette of India

असाधारण
EXTRAORDINARY
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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 उपावद्ध 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 एसीसी टक्नो लैब्स इंडिया प्राइवेट लिमिटेड, सं0 95-डी/3, इंडस्ट्रियल एस्टेट, अम्बत्तूर, चेन्नई - 600058 (तमिलनाडु)	(1) डॉ0 जी सुंदर (2) श्री पी0 सैंथिल कुमार (3) श्री ए0 रॉक्सन थिम्बुरै	06.08.2014 से 05.08.2019
122	मैसर्स एडवई फूड रिसर्च एंड एनैलसस सेन्टर, सुभाष नगर, पी0ओ0 नीलगंज बाजार, पी0एस0 बारासात, जिला0 नार्थ 24 पीजीएस,कोलकाता - 700121 (पश्चिम बंगाल)	(1) डॉ0 देवोतम बनर्जी (2) श्री आलोके कुमार दत्ता (3) श्री सुरेश कुमार मंडल	06.08.2014 से 05.08.2019
123	मैसर्स कीवी ईको लेबोरेटरिज प्राइवेट लिमिटेड, प्लॉट सं0 19, एसवाई सं0 343, एलिप, इंडस्ट्रियल एस्टेट, गजुलरमरम गाँव, कुश्बुल्लापुर (एमडी), जिला रंगारेड्डी, (तेलँगाना)	(1) डॉ0 रजनी कुमारी (2) श्री एन0पी0 विश्वनाथ (3) डॉ0 पी0 सरिता	06.08.2014 से 05.08.2019
124	मैसर्स नवेगा इंजीनियरी एंड कन्सल्टेन्ट, रवि चैंबर्स, प्लॉट नं0 100/1, मकान सं0 1-96/100, कबीर हिल्स, मधापुर, हैदराबाद - 500033 (तेलँगाना)	(1) श्री चेल्लि चिरंजीवी (2) श्री चलापथी कोदैआह गिरी (3) सुश्री अश्वनीदेवी कोमारी रेड्डी	06.08.2014 से 05.08.2019
125	मैसर्स कल्याणी लेबोरेटरीज प्राइवेट लिमिटेड, प्लॉट सं0 841 - ए, रसुलगढ़ , भुवनेश्वर - 751010 (ओडिशा)	(1) डॉ0 देवाशीष विस्वाल (2) डॉ0 रेखा नायक	06.08.2014 से

	(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.

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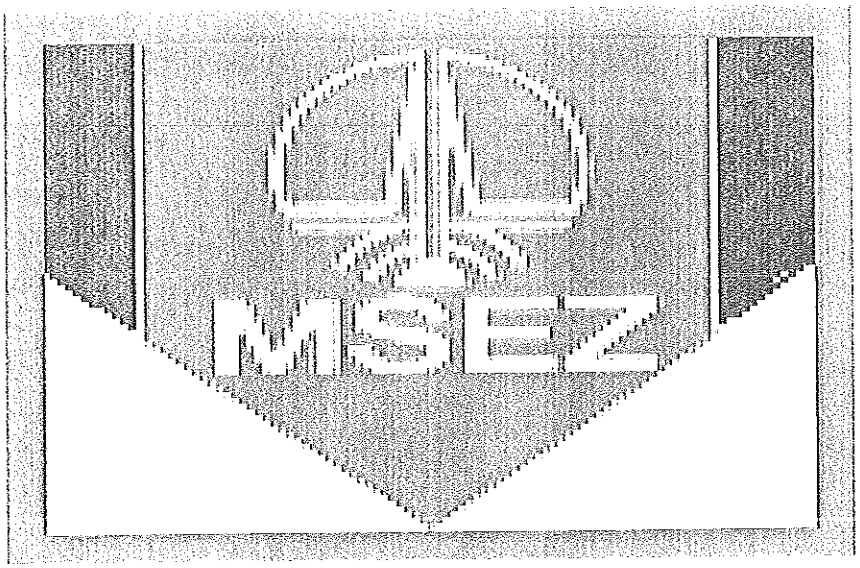
ENVIRONMENTAL MONITORING REPORT

SPECIAL ECONOMIC ZONE LIMITED, MANGALORE



OCTOBER - 2015

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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LIST OF TABLES

FIGURE

ANNEXURE

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).
- 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 October 2015 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 metcorological 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 ($PM_{2.5}$) 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/m³
2	Particulate Matter $PM_{2.5}$	Fine Particulate Sampler (Gravimetric method)	5.0 µg/m³
3	Sulphur di Oxide	Modified West & Gaeke Method	5.0 µg/m³
4	Nitrogen Oxide	Jacob and Hochheiser Method	5.0 µg/m³
5	Carbon monoxide	Gas Analyser	0.1 ppm
6	Ammonia	Nessler's Method	5 µg/m³
7	Ozone	KI Absorption and Colorimetric	5 µg/m³
8	Benzene,	IS 5182: Pt 11: 2006	0.01 µg/m³
9	Benzo[a]pyrene)	IS 5182: Pt 12: 1991	0.1 ng/m³
10	Lead,	IS 5182 P 22: 2004	0.1 µg/m³
11	Arsenic, Nickel	IS 5182 P 22: 2004	1 ng/m³

2.1.2. Micro-Meteorology :

Wind Speed, Predominant Wind Direction, Temperature, Relative Humidity between 01-10-2015 and 31-10-2015 at MSEZ is given in Table 1.3.

Table-1.3- Micro-Meteorology

DATE	TEMPERATURE (°C)		RELATIVE HUMIDITY (%)		WIND SPEED (Km/hr)		PREDOMINANT WIND DIRECTION
	MIN	MAX	MIN	MAX	MIN	MAX	
01-10-2015	25	28	74	94	5.6	18.5	West South West
02-10-2015	26	30	70	89	7.4	22.2	South West
03-10-2015	26	29	79	94	5.6	11.1	East South East
04-10-2015	25	30	74	94	5.6	85.2	North
05-10-2015	24	25	94	100	5.6	16.7	West
06-10-2015	23	28	84	100	7.4	16.7	South East
07-10-2015	24	28	79	94	7.4	25.9	South East
08-10-2015	24	29	78	94	5.6	18.5	South East
09-10-2015	24	27	79	94	7.4	22.2	East South East
10-10-2015	25	30	74	100	9.3	22.2	East South East
11-10-2015	25	30	66	94	7.4	20.4	South East
12-10-2015	25	30	74	94	7.4	20.8	West North West
13-10-2015	25	32	66	100	5.6	22.2	North West
14-10-2015	24	32	58	94	5.6	18.5	East
15-10-2015	25	32	59	100	5.6	14.8	West
16-10-2015	25	32	62	100	5.6	16.7	North West
17-10-2015	27	32	66	94	5.6	18.5	West
18-10-2015	26	33	63	86	5.6	18.5	West
19-10-2015	25	33	52	94	5.6	18.5	South east
20-10-2015	25	33	55	94	5.6	16.7	North East
21-10-2015	26	32	66	89	5.6	20.4	North East
22-10-2015	25	30	70	92	9.3	18.5	West South West
23-10-2015	26	32	66	94	5.6	14.8	West North West
24-10-2015	25	32	49	100	5.6	14.8	West North West
25-10-2015	24	32	55	89	5.6	18.5	East South East
26-10-2015	27	31	59	84	3.7	22.2	East South East
27-10-2015	25	30	68	92	5.6	14.8	North West
28-10-2015	25	32	84	94	5.6	25.9	South East
29-10-2015	23	31	66	94	5.6	100	West North West
30-10-2015	24	32	62	94	5.6	18.5	West North West
31-10-2015	25	33	66	94	5.6	18.5	South East

2.1.3. Wind Rose:

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

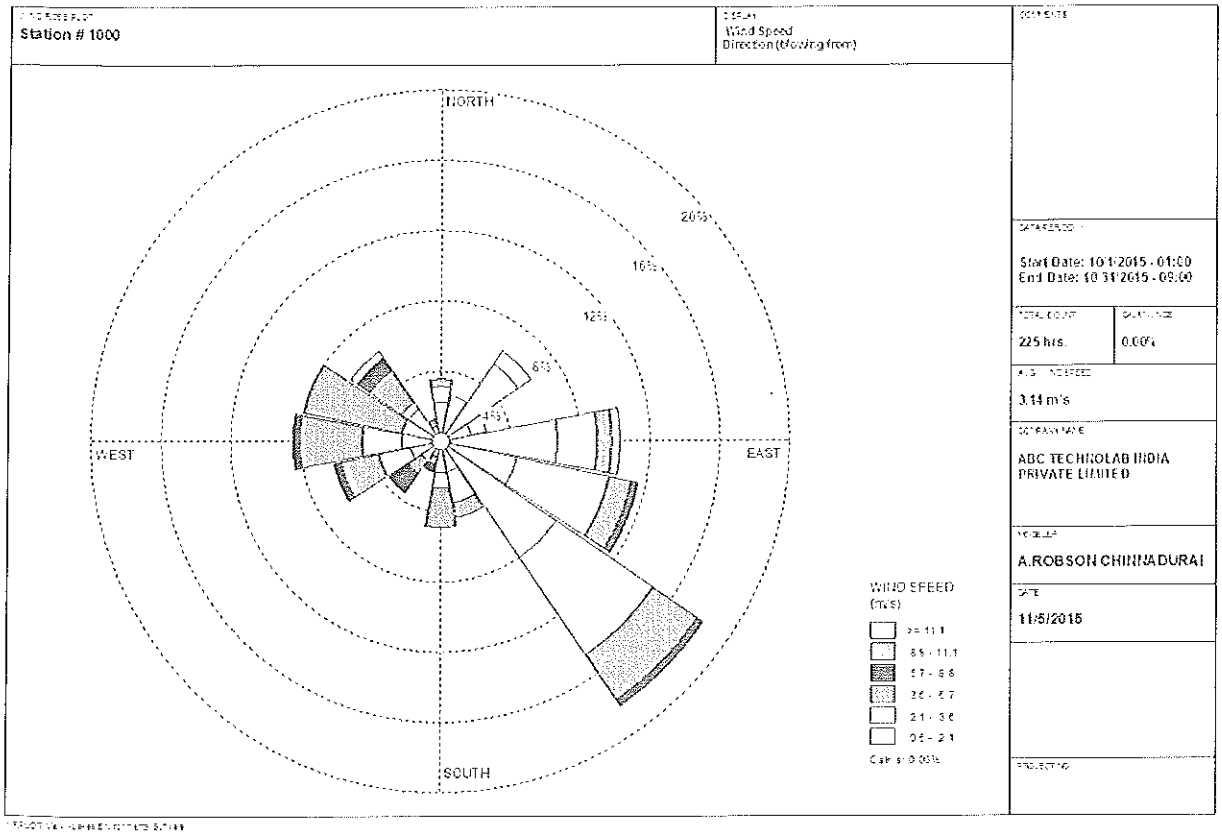

Figure 1.1. Wind Rose Diagram – October 2015

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 **October 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/18/AS/281015/A 1441-1442
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	28-10-2015 (Monitoring duration 24hrs/day for 2 days)
REPORT DATE	06-11-2015

S.No	Location	Height GL(m)	Pollutant Concentration in µg/m³						
			$PM_{2.5}$	PM_{10}	SO_2	NOx	Pb	NH_3	O_3
1	CETP Location	2	26.4	53.8	8.3	12.7	BDL (<0.1)	21.5	12.7
2	MSEZ-GSS 3	2	28.1	59.1	7.7	16.8	BDL (<0.1)	13.4	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.,

ABC Techno Labs India Private Limited CHENNAI 600 058

AUTHORIZED SIGNATORY

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Table 1.4(b) - AMBIENT AIR QUALITY REPORT

SAMPLE ID NO	ABC/MSEZ/18/AS/281015/A 1441-1442
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	28-10-2015 (Monitoring duration 24hrs/day for 2 days)
REPORT DATE	06-11-2015

S.No	Location	Pollutant Concentration				CO, mg/m³
		Benzene µg/m³	Benzo[a]pyrene ng/m³	Arsenic ng/m³	Nickel ng/m³	
1	CETP Location	BDL (<0.01)	BDL (<0.1)	BDL (<1)	BDL (<1)	0.13
2	MSEZ-GSS 3	BDL (<0.01)	BDL (<0.1)	BDL (<1)	BDL (<1)	0.29
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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QUALITY MANAGER

ABC Techno Labs India Private Limited CHENNAI 600 058

Table 1.4(c) - AMBIENT AIR QUALITY REPORT

SAMPLE ID NO	ABC/MSEZ/18/AS/281015/A 1443
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	28-10-2015 (Monitoring duration 24hrs/day for 2 days)
REPORT DATE	06-11-2015

S.No	Location	Height GL(m)	Pollutant Concentration in µg/m³						
			$PM_{2.5}$	PM_{10}	SO_2	NOx	Pb	NH_3	O_3
3	Baipe	2	20.4	48.2	6.1	13.5	BDL (<0.1)	8.1	10.7
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

ABC Techno Labs India Private Limited CHENNAI 600 058

Table 1.4(d) - AMBIENT AIR QUALITY REPORT

SAMPLE ID NO	ABC/MSEZ/18/AS/281015/A 1443
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	28-10-2015 (Monitoring duration 24hrs/day for 2 days)
REPORT DATE	06-11-2015

S.No	Location	Pollutant Concentration				CO, mg/m³
		Benzene µg/m³	Benzo[a]pyrene ng/m³	Arsenic ng/m³	Nickel ng/m³	
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.,

AUTHORIZED SIGNATORY

QUALITY MANAGER

ABC Techno Labs India Private Limited CHENNAI 600 058

Table 1.4(c) - AMBIENT AIR QUALITY REPORT

SAMPLE ID NO	ABC/MSEZ/18/AS/301015/A 1444-1445
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	30-10-2015 (Monitoring duration 24hrs/day for 2 days)
REPORT DATE	06-11-2015

S.No	Location	Height GL(m)	Pollutant Concentration in µg/m³						
			$PM_{2.5}$	PM_{10}	SO_2	NOx	Pb	NH_3	O_3
4	120 ML, Water Reservoir	2	22.8	53.7	6.8	14.1	BDL (<0.1)	10.8	11.8
5	MSEZ, Permude	2	18.2	45.7	5.2	11.6	BDL (<0.1)	5.1	8.7
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

ABC Techno Labs India Private Limited CHENNAI 600 058

Table 1.4(f) - AMBIENT AIR QUALITY REPORT

SAMPLE ID NO	ABC/MSEZ/18/AS/301015/A 1444-1445
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	30-10-2015 (Monitoring duration 24hrs/day for 2 days)
REPORT DATE	06-11-2015

S.No	Location	Pollutant Concentration				CO, mg/m³
		Benzene µg/m³	Benzo[a]pyrene ng/m³	Arsenic ng/m³	Nickel ng/m³	
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.....

ABC Techno Labs India Private Limited CHENNAI 600 058

For ABC Techno Labs India Private Limited.,

AUTHORIZED SIGNATORY 06/11/15

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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	27/10/2015	CETP	48.6	40.4
N2	27/10/2015	120 ML	51.7	41.3
N1	29/10/2015	CETP	50.8	41
N2	29/10/2015	120 ML	52.3	42.7
N1	02/11/2015	CETP	49.7	42.1
N2	02/11/2015	120 ML	53.4	42.7
N1	04/11/2015	CETP	47.3	40.2
N2	04/11/2015	120 ML	52.6	42.5

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.,

AUTHORIZED SIGNATORY
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ABC Techno Labs India Private Limited CHENNAI 600 058

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 1.7- Water Sampling Locations

Location Code	Date Sampled	Location	Type of water	Geographical Location
W1	29/10/2015	120 ML Water Storage	Ground water	N-12°58'57.70" E-74°51'30.10"
W2	29/10/2015	Permude Bajpe Village Boundary	Ground water	N-12°59'54.00" E-74°52'53.60"
W3	29/10/2015	Road Cum Pipeline Corridor -Kalavar	Ground water	N-12°58'45.10" E-74°51'16.40"
W4	29/10/2015	Oddidakale- Bajpe	Ground water	N-12°58'32.80" E-74°52'10.40"
W5	29/10/2015	Chandrahasa Nagar	Ground water	N-12°58'44.90" E-74°51'16.50"
W6	29/10/2015	Permude	Ground water	N-12°59'12.50" E-74°52'34.30"
W7	29/10/2015	CETP Location	Ground water	N-12°59'51.40" E-74°51'24.70"
W8	29/10/2015	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.

Table 1.8(a) - Ground water Quality Results

Sl. No	PARAMETERS	UNIT	LIMIT AS PER IS 10500 : 2012	W1	W2	W3	W4
1	Colour	Pt-Co	5	1	Nil	Nil	Nil
2	Odour	-	Unobjectionable	No Odour Observed	No Odour Observed	No Odour Observed	No Odour Observed
3	pH at 25°C	-	6.5-8.5	6.56	5.74	5.97	7.06
4	Electrical Conductivity,	µS/cm	Not Specified	196	80	98	207
5	Turbidity	NTU	1	0.9	BDL(<0.5)	BDL(<0.5)	BDL(<0.5)
6	Total Dissolved Solids	mg/l	500	105	43	52	110
7	Total Hardness as $CaCO_3$	mg/l	200	78	22	24	84
8	Total Alkalinity as $CaCO_3$	mg/l	200	78	8	14	98
9	Chloride as Cl	mg/l	250	12	10	14	7
10	Sulphate as SO_4	mg/l	200	3.8	BDL(<1)	BDL(<1)	2.7
11	Fluoride as F	mg/l	1	0.16	0.17	0.24	0.25
12	Nitrate as NO_3	mg/l	45	1	12	10.4	BDL(<1)
13	Silica as SiO_2	mg/l	Not Specified	7.7	7.6	1.2	68.5
14	Copper as Cu	mg/l	0.05	BDL(<0.03)	BDL(<0.03)	BDL(<0.03)	BDL(<0.03)
15	Zinc as Zn	mg/l	5	0.01	1.35	0.10	BDL (<0.005)
16	Manganese as Mn	mg/l	0.10	BDL(<0.02)	BDL(<0.02)	BDL(<0.02)	BDL(<0.02)
17	Sodium as Na	mg/l	Not Specified	8.6	4.7	7.9	11.8
18	Potassium as K	mg/l	Not Specified	1.4	0.4	1.0	1
19	Calcium as Ca	mg/l	75	25	3.2	6.4	16
20	Magnesium as Mg	mg/l	30	4	3.4	2	10.7
21	Iron as Fe	mg/l	0.3	0.18	BDL(<0.05)	BDL(<0.05)	BDL(<0.05)
22	Lead as Pb	mg/l	0.01	BDL(<0.01)	BDL(<0.01)	BDL(<0.01)	BDL(<0.01)
23	Mercury as Hg	mg/l	0.001	BDL (<0.001)	BDL (<0.001)	BDL (<0.001)	BDL (<0.001)
24	Cadmium as Cd	mg/l	0.003	BDL (<0.001)	BDL (<0.001)	BDL (<0.001)	BDL (<0.001)
25	Arsenic as As	mg/l	0.01	BDL(<0.01)	BDL(<0.01)	BDL(<0.01)	BDL(<0.01)
26	Chromium as Cr^{6+}	mg/l	0.05	BDL(<0.01)	BDL(<0.01)	BDL(<0.01)	BDL(<0.01)
27	Volatile Organic Compounds	mg/l	Not Specified	BDL(<0.01)	BDL(<0.01)	BDL(<0.01)	BDL(<0.01)

BDL-Below Detection Limit .....End of Report.....

For ABC Techno Labs India Private Limited.,

ABC Techno Labs India Private Limited CHENNAI 600 058

AUTHORIZED SIGNATORY 06/11/15

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Table 1.8(b) - Ground water Quality Results

Sl. No	PARAMETERS	UNIT	LIMIT AS PER IS 10500 : 2012	W5	W6	W7	W8
1	Colour	Pt-Co	5	Nil	Nil	Nil	Nil
2	Odour	-	Unobjectionable	No Odour Observed	No Odour Observed	No Odour Observed	No Odour Observed
3	pH at 25°C	-	6.5-8.5	7.04	5.38	7.04	6.87
4	Electrical Conductivity,	µS/cm	Not Specified	210	48	220	175
5	Turbidity	NTU	1	0.8	0.6	BDL(<0.5)	0.9
6	Total Dissolved Solids	mg/l	500	112	25	133	92
7	Total Hardness as $CaCO_3$	mg/l	200	88	8	94	74
8	Total Alkalinity as $CaCO_3$	mg/l	200	56	4	112	72
9	Chloride as Cl	mg/l	250	25	6	5	3
10	Sulphate as SO_4	mg/l	200	13.6	BDL(<1)	9.8	12.4
11	Fluoride as F	mg/l	1	0.28	0.15	0.34	0.43
12	Nitrate as NO_3	mg/l	45	BDL(<1)	6.5	BDL(<1)	BDL(<1)
13	Silica as SiO_2	mg/l	Not Specified	35.3	3.6	57	48
14	Copper as Cu	mg/l	0.05	BDL (<0.05)	BDL(<0.03)	BDL(<0.03)	BDL(<0.03)
15	Zinc as Zn	mg/l	5	0.33	BDL (<0.005)	0.13	0.10
16	Manganese as Mn	mg/l	0.10	BDL(<0.05)	BDL(<0.05)	BDL(<0.05)	BDL(<0.05)
17	Sodium as Na	mg/l	Not Specified	8.2	4.3	15.3	7.5
18	Potassium as K	mg/l	Not Specified	BDL(<1)	BDL(<1)	1.4	BDL(<1)
19	Calcium as Ca	mg/l	75	17.6	2.4	25	12
20	Magnesium as Mg	mg/l	30	10.7	BDL(<1)	7.8	10.7
21	Iron as Fe	mg/l	0.3	BDL(<0.05)	BDL(<0.05)	BDL(<0.05)	BDL(<0.05)
22	Lead as Pb	mg/l	0.01	BDL(<0.01)	BDL(<0.01)	BDL(<0.01)	BDL(<0.01)
23	Mercury as Hg	mg/l	0.001	BDL (<0.001)	BDL (<0.001)	BDL (<0.001)	BDL (<0.001)
24	Cadmium as Cd	mg/l	0.003	BDL (<0.001)	BDL (<0.001)	BDL (<0.001)	BDL (<0.001)
25	Arsenic as As	mg/l	0.01	BDL(<0.01)	BDL(<0.01)	BDL(<0.01)	BDL(<0.01)
26	Chromium as Cr^{6+}	mg/l	0.05	BDL(<0.01)	BDL(<0.01)	BDL(<0.01)	BDL(<0.01)
27	Volatile Organic Compounds	mg/l	Not Specified	BDL(<0.01)	BDL(<0.01)	BDL(<0.01)	BDL(<0.01)

BDL-Below Detection Limit **.....End of Report.....**

For ABC Techno Labs India Private Limited.,

ABC Techno Labs India Private Limited CHENNAI 600 058

AUTHORIZED SIGNATORY 06/11/15

QUALITY MANAGER

ANNEXURE-I

रजिस्ट्री सं० डी० एल०-33004/99 REGD. NO. D. L.-33004/99

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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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, सं0 95-डी/3, इंडस्ट्रियल एस्टेट, अम्बतूर, चेन्नई - 600058 (तमिलनाडु)	(1) डॉ0 जी सुंदर (2) श्री पी0 सेंथिल कुमार (3) श्री ए0 रॉबसन चिन्नदुरै	06.08.2014 से 05.08.2019
122	मैसर्स एडवर्ड फुड रिसर्च एंड एनैलरास सेन्टर, सुभाष नगर, पी0ओ0 नीलगंज बाजार, पी0एस0 बारासात, जिला0 नार्थ 24 पीजीएस,कोलकाता - 700121 (पश्चिम बंगाल)	(1) डॉ0 देवोतम बनर्जी (2) श्री अलोके कुमार दत्ता (3) श्री सुरेश कुमार मंडल	06.08.2014 से 05.08.2019
123	मैसर्स कीवी ईको लेबोरेटरिज प्राइवेट लिमिटेड, प्लॉट सं0 19, एसवाई सं0 343, एलिप, इंडस्ट्रियल एस्टेट, गजुलरमरम गाँव, कुथ्बुल्लपुर (एमडी), जिला रंगारेड्डी, (तेलँगाना)	(1) डॉ0 रजनी कुमारी (2) श्री एन0पी0 विश्वनाथ (3) डॉ0 पी0 सरिता	06.08.2014 से 05.08.2019
124	मैसर्स नवेगा इंवायरो इंजीनियर्स एंड कन्सल्टेन्ट, रवि चैंबर्स, प्लॉट नं0 100/1, मकान सं0 1-96/100, कवुरि हिल्स, मधापुर, हैदराबाद - 500033 (तेलँगाना)	(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 सं0 841 - ए, रसुलगढ़ , भुवनेश्वर - 751010 (ओडिशा)	(1) डॉ0 देबाशीष बिस्वाल (2) डॉ0 रेखा नायक	06.08.2014 से

		(3) श्री दिगम्बर अरुखा	05.08.2019
126	मैसर्स भरूच इन्वायरो इनफ्रास्ट्रक्चर लिमिटेड (बीईआईएल), ऐनलिटिकल रिसर्च लेबोरेटरी, प्लॉट सं0 9701 - 16, जीआईडीसी, अंकलेश्वर , जिला भरूच- 393002 (गुजरात)	(1) डॉ0 हितेंद्र कुमार जानी (2) श्री नरेन्द्र बी0 पटेल (3) श्री धर्मेश आई0 पटेल	06.08.2014 से 05.08.2019 ।"

[फा0सं0 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 सं0 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. Aloke 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 4 th 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 27 th 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.

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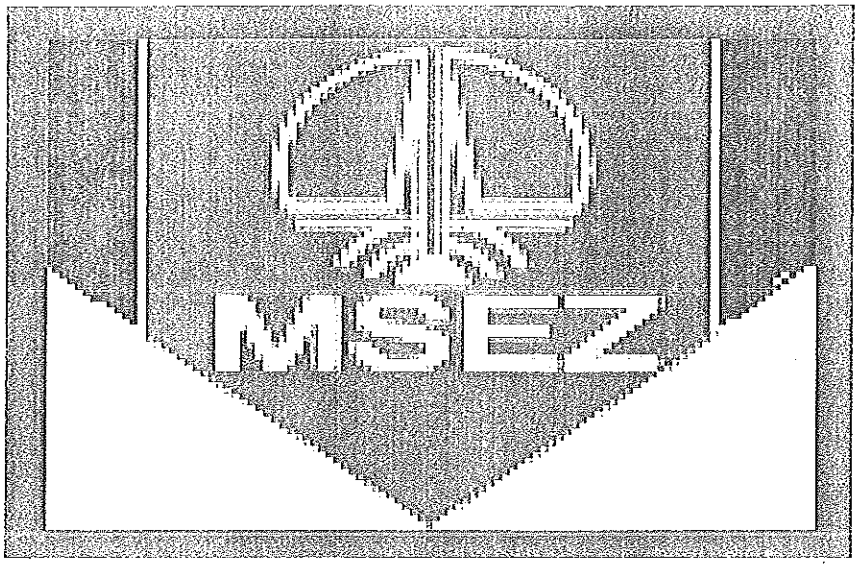
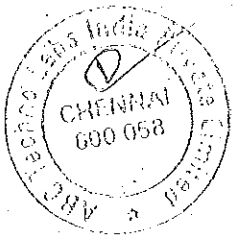
ENVIRONMENTAL MONITORING REPORT

SPECIAL ECONOMIC ZONE LIMITED, MANGALORE



SEPTEMBER - 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)

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

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13/10/15.

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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.

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 September 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 (PM_{10}) and 2.5 µm ($PM_{2.5}$) 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 01-09-2015 and 30-09-2015 at MSEZ is given in Table 1.3.

Table-1.3- Micro-Meteorology

DATE	TEMPERATURE (°C)		RELATIVE HUMIDITY (%)		WIND SPEED (Km/hr)		PREDOMINANT WIND DIRECTION
	MIN	MAX	MIN	MAX	MIN	MAX	
01-09-2015	25	36	66	94	5.6	14.8	North
02-09-2015	25	30	70	94	5.6	18.5	North North West
03-09-2015	25	31	66	94	14.8	18.5	West North West
04-09-2015	26	31	70	94	5.6	18.5	West North West
05-09-2015	26	31	66	89	5.6	13.0	East
06-09-2015	25	30	70	94	2.1	22.2	North North West
07-09-2015	25	31	59	94	5.6	22.2	South
08-09-2015	24	28	74	94	5.6	11.1	South
09-09-2015	24	30	70	100	5.6	18.5	West South West
10-09-2015	24	30	70	94	5.6	18.5	South East
11-09-2015	24	30	74	100	5.6	14.8	West North West
12-09-2015	25	30	70	94	5.6	16.7	West
13-09-2015	25	31	70	94	5.6	18.5	East South East
14-09-2015	25	30	74	94	5.6	25.9	West
15-09-2015	24	28	73	100	5.6	14.8	West North West
16-09-2015	23	29	79	97	5.6	14.8	East
17-09-2015	25	30	74	94	5.6	14.8	West North West
18-09-2015	26	30	74	89	5.6	14.8	North West
19-09-2015	25	30	74	100	5.6	18.5	West
20-09-2015	25	30	66	95	5.6	14.8	North North East
21-09-2015	25	30	70	94	5.6	16.7	West
22-09-2015	24	31	66	100	5.6	14.8	West
23-09-2015	25	31	70	94	5.6	18.5	East
24-09-2015	25	31	66	94	5.6	14.8	North West
25-09-2015	25	30	70	94	9.3	14.8	East South East
26-09-2015	27	31	66	89	5.6	14.8	North West
27-09-2015	26	31	66	94	3.7	18.5	North
28-09-2015	25	32	59	100	5.6	22.2	North
29-09-2015	24	32	62	94	5.6	14.8	East South East
30-09-2015	24	32	61	94	7.4	127.8	South

2.1.3. Wind Rose:

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

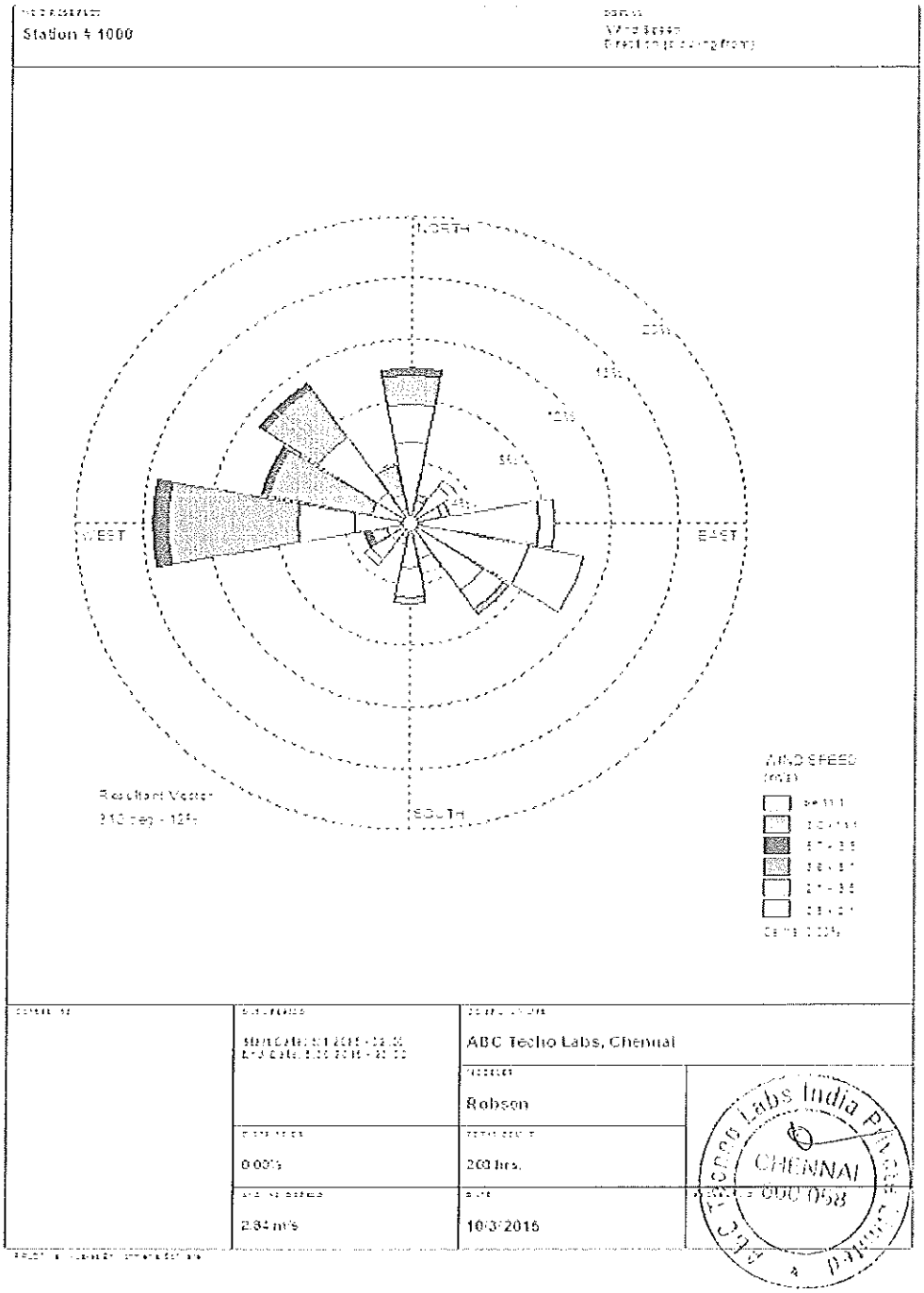


Figure 1.1. Wind Rose Diagram - September 2015

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 **September 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/17/AS/240915/A 1085-1086
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	24-09-2015 (Monitoring duration 24hrs/day for 2 days)
REPORT DATE	03-10-2015

S.No	Location	Height GL(m)	Pollutant Concentration in µg/m³						
			$PM_{2.5}$	PM_{10}	SO_2	NOx	Pb	NH_3	O_3
1	CETP Location	2	26.4	61.7	11.1	13.7	BDL (<0.1)	18.4	13.7
2	MSEZ-GSS 3	2	21.8	57.6	8.3	15.6	BDL (<0.1)	14.7	12.4
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.....

ABC Techno Labs India Private Limited CHENNAI 600 052

For ABC Techno Labs India Private Limited.,

AUTHORIZED SIGNATORY

QUALITY MANAGER

Table 1.4(b) - AMBIENT AIR QUALITY REPORT

SAMPLE ID NO	ABC/MSEZ/17/AS/240915/A 1085-1086
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	24-09-2015 (Monitoring duration 24hrs/day for 2 days)
REPORT DATE	03-10-2015

S.No	Location	Pollutant Concentration				CO, mg/m³
		Benzene µg/m³	Benzo[a]pyrene ng/m³	Arsenic ng/m³	Nickel ng/m³	
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)	0.16
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.....

ABC Techno Labs India Private Limited CHENNAI 600 058

For ABC Techno Labs India Private Limited.,

AUTHORIZED SIGNATORY

QUALITY MANAGER

Table 1.4(c) - AMBIENT AIR QUALITY REPORT

SAMPLE ID NO	ABC/MSEZ/17/AS/240915/A 1087
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	24-09-2015 (Monitoring duration 24hrs/day for 2 days)
REPORT DATE	03-10-2015

S.No	Location	Height GL(m)	Pollutant Concentration in µg/m³						
			$PM_{2.5}$	PM_{10}	SO_2	NOx	Pb	NH_3	O_3
3	Baipe	2	17.5	48.3	5.8	12.4	BDL (<0.1)	5.4	10.1
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.....

ABC Techno Labs India Private Limited CHENNAI 600 058

For ABC Techno Labs India Private Limited.,

AUTHORIZED SIGNATORY

QUALITY MANAGER

Table 1.4(d) - AMBIENT AIR QUALITY REPORT

SAMPLE ID NO	ABC/MSEZ/17/AS/240915/A 1087
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	24-09-2015 (Monitoring duration 24hrs/day for 2 days)
REPORT DATE	03-10-2015

S.No	Location	Pollutant Concentration				CO, mg/m³
		Benzene µg/m³	Benzo[a]pyrene ng/m³	Arsenic ng/m³	Nickel ng/m³	
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.....

ABC Techno Labs India Private Limited CHENNAI 600 058

For ABC Techno Labs India Private Limited.,

AUTHORIZED SIGNATORY

QUALITY MANAGER

Table 1.4(e) - AMBIENT AIR QUALITY REPORT

SAMPLE ID NO	ABC/MSEZ/17/AS/260915/A 1088-1089
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	26-09-2015 (Monitoring duration 24hrs/day for 2 days)
REPORT DATE	03-10-2015

S.No	Location	Height GL(m)	Pollutant Concentration in µg/m³						
			$PM_{2.5}$	PM_{10}	SO_2	NOx	Pb	NH_3	O_3
4	120 ML, Water Reservoir	2	23.7	55.8	10.2	14.1	BDL (<0.1)	16	12.1
5	MSEZ, Permude	2	18.2	45.1	6.9	11.6	BDL (<0.1)	5.8	9.5
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.....

ABC Techno Labs India Private Limited CHENNAI 600 058

For ABC Techno Labs India Private Limited.,

AUTHORIZED SIGNATORY

QUALITY MANAGER

Table 1.4(f) - AMBIENT AIR QUALITY REPORT

SAMPLE ID NO	ABC/MSEZ/17/AS/260915/A 1088-1089
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	26-09-2015 (Monitoring duration 24hrs/day for 2 days)
REPORT DATE	03-10-2015

S.No	Location	Pollutant Concentration				CO, mg/m³
		Benzene µg/m³	Benzo[a]pyrene ng/m³	Arsenic ng/m³	Nickel ng/m³	
4	120 Ml., Water Reservoir	BDL (<0.01)	BDL (<0.1)	BDL (<1)	BDL (<1)	0.10
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.....

ABC Techno Labs India Private Limited CHENNAI 600 058

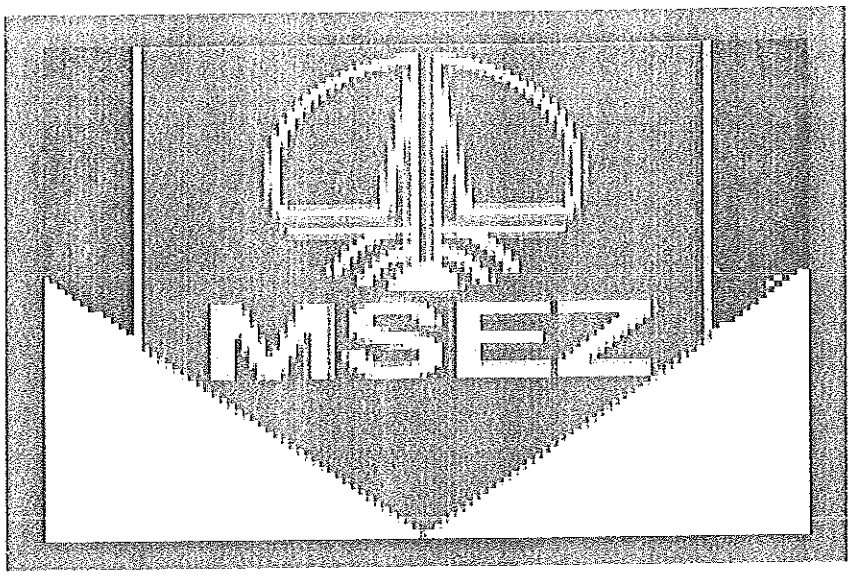
For ABC Techno Labs India Private Limited.,

AUTHORIZED SIGNATORY

QUALITY MANAGER

ENVIRONMENTAL MONITORING REPORT

SPECIAL ECONOMIC ZONE LIMITED, MANGALORE



NOVEMBER - 2015

Prepared by:

ABC Techno Labs India Private Limited CHENNAI 600 058

MANGALORE SEZ LTD. RECEIVED 15 DEC 2015 7799/15 MANGALORE-575 006

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*

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No.2, 2nd Street, Thangam Colony, Anna Nagar West,
Chennai, Tamil Nadu, India - 600 040.
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N0.95D/3, 3rd Cross Street, Sector 2, South Phase,
Ambattur Industrial Estate, Chennai - 600 058.
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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 November 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 (PM_{10}) and 2.5 µm ($PM_{2.5}$) respectively. Gaseous Samplers were used for sampling gaseous pollutants such as SO_2, NOx, 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 01-11-2015 and 30-11-2015 at MSEZ is given in Table 1.3.

Table-1.3- Micro-Meteorology

DATE	TEMPERATURE (°C)		RELATIVE HUMIDITY (%)		WIND SPEED (Km/hr)		PREDOMINANT WIND DIRECTION
	MIN	MAX	MIN	MAX	MIN	MAX	
01-11-2015	23	31	66	100	7.2	17.6	East
02-11-2015	24	32	62	98.8	5.6	19.6	South
03-11-2015	21	31	58	94	5.8	17.6	East South East
04-11-2015	24	31	63	94	6.8	21.7	East
05-11-2015	23	30	70	100	5.6	21.8	West
06-11-2015	22	32	55	99.6	5.6	14.7	North
07-11-2015	21	33	44	94	6.8	14.8	East North East
08-11-2015	24	32	46	94	5.6	14.8	East
09-11-2015	23	30	67	94	5.8	11.3	West North West
10-11-2015	21	32	47	94	3.8	17.4	North North East
11-11-2015	24	28	69	94	5.6	8.9	South South East
12-11-2015	23	33	49	94	5.8	18.4	East South East
13-11-2015	23	32	59	94	5.7	107	West North West
14-11-2015	23	33	36	100	5.1	13.4	North West
15-11-2015	22	20	46	88	5.6	11.4	East South East
16-11-2015	23	32	50	94	5.6	11.1	East
17-11-2015	23	33	44	79	5.6	18.5	East
18-11-2015	25	33	39	94	5.6	11.1	East South East
19-11-2015	25	32	46	89	5.6	13.4	West
20-11-2015	24	32	52	94	7.2	18.3	East
21-11-2015	22	33	46	100	3.7	18.3	North
22-11-2015	23	34	46	94	7.6	21.8	East South East
23-11-2015	25	34	42	94	5.6	17.6	East
24-11-2015	24	33	59	94	5.6	96.3	East North East
25-11-2015	23	34	33	94	5.6	15.3	East South East
26-11-2015	21	33	35	94	7.4	15.3	East
27-11-2015	21	33	68	94	5.1	18.2	North East
28-11-2015	24	33	51	89	7.7	118	West North West
29-11-2015	23	33	32	94	6.8	17.5	East
30-11-2015	23	34	44	94	5.6	16.7	East

2.1.3. Wind Rose:

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

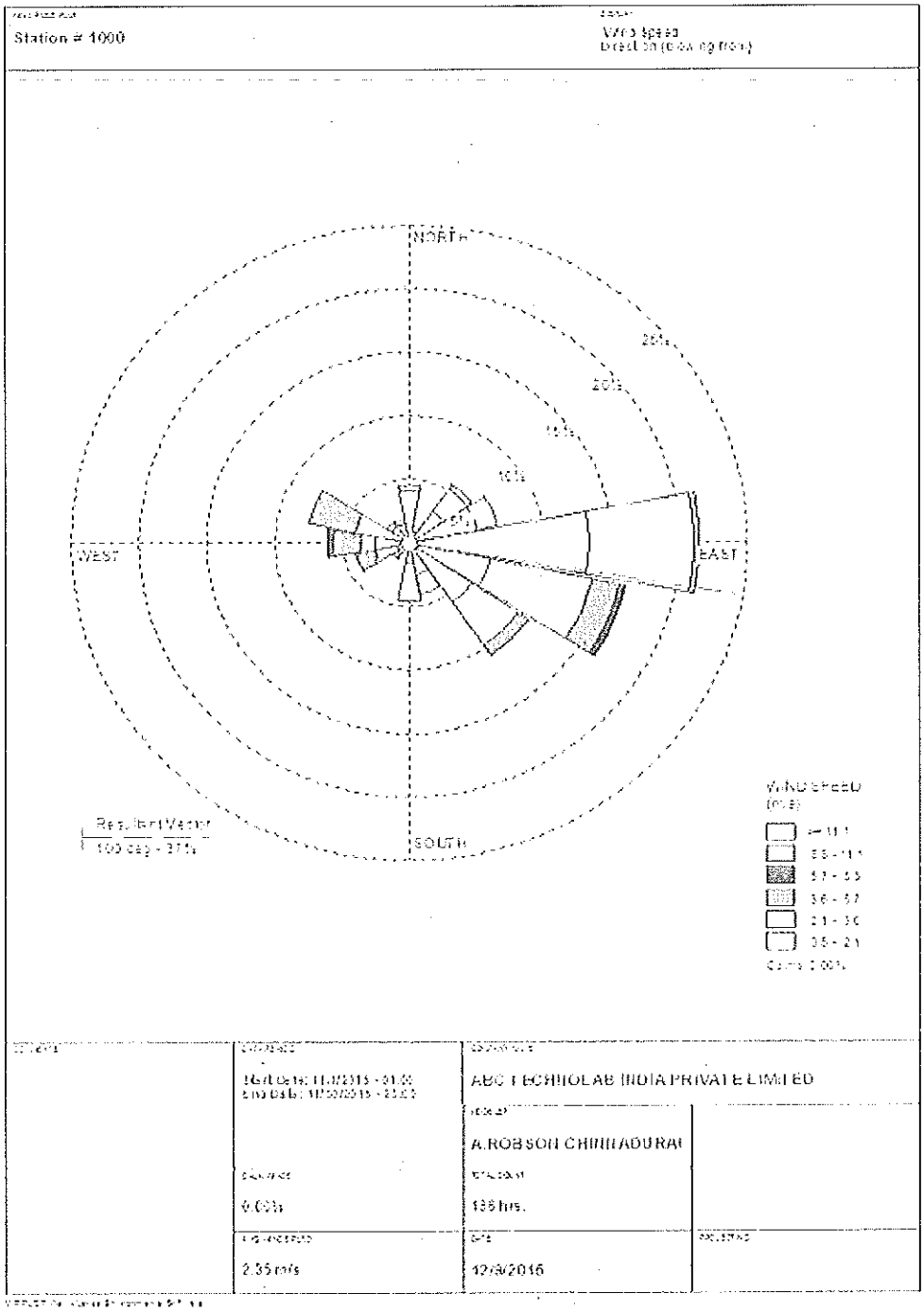


Figure 1.1. Wind Rose Diagram - November 2015

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 **November 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/19/AS/251115/A 1614-1615
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	25-11-2015 (Monitoring duration 24hrs/day for 2 days)
REPORT DATE	08-12-2015

S.No	Location	Height GL(m)	Pollutant Concentration in µg/m³						
			$PM_{2.5}$	PM_{10}	SO_2	NOx	Pb	NH_3	O_3
1	CETP Location	2	22.6	56.7	12.1	14.2	BDL (<0.1)	20.4	12.8
2	MSEZ-GSS 3	2	24.1	59.8	10.4	17.1	BDL (<0.1)	15.1	11.6
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.,

AUTHORIZED SIGNATORY

Table 1.4(b) - AMBIENT AIR QUALITY REPORT

SAMPLE ID NO	ABC/MSEZ/19/AS/251115/A 1614-1615
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	25-11-2015 (Monitoring duration 24hrs/day for 2 days)
REPORT DATE	08-12-2015

S.No	Location	Pollutant Concentration				CO, mg/m³
		Benzene µg/m³	Benzo[a]pyrene ng/m³	Arsenic ng/m³	Nickel ng/m³	
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)	0.14
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.,

AUTHORIZED SIGNATORY

ABC Techno Labs India Private Limited CHENNAI 600 058

Table 1.4(c) - AMBIENT AIR QUALITY REPORT

SAMPLE ID NO	ABC/MSEZ/19/AS/251115/A 1616
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	25-11-2015 (Monitoring duration 24hrs/day for 2 days)
REPORT DATE	08-12-2015

S.No	Location	Height GL(m)	Pollutant Concentration in µg/m³						
			$PM_{2.5}$	PM_{10}	SO_2	NOx	Pb	NH_3	O_3
3	Baipe	2	19.7	46.4	5.1	13.2	BDL (<0.1)	BDL(<5	10.1
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.,

AUTHORIZED SIGNATORY

ANNEXURE-I

NABL

National Accreditation Board for Testing and Calibration Laboratories

Department of Science & Technology, 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, SIDCO Industrial Estate, Ambattur, Chennai

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 18/06/2013

Valid Until 17/06/2015

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

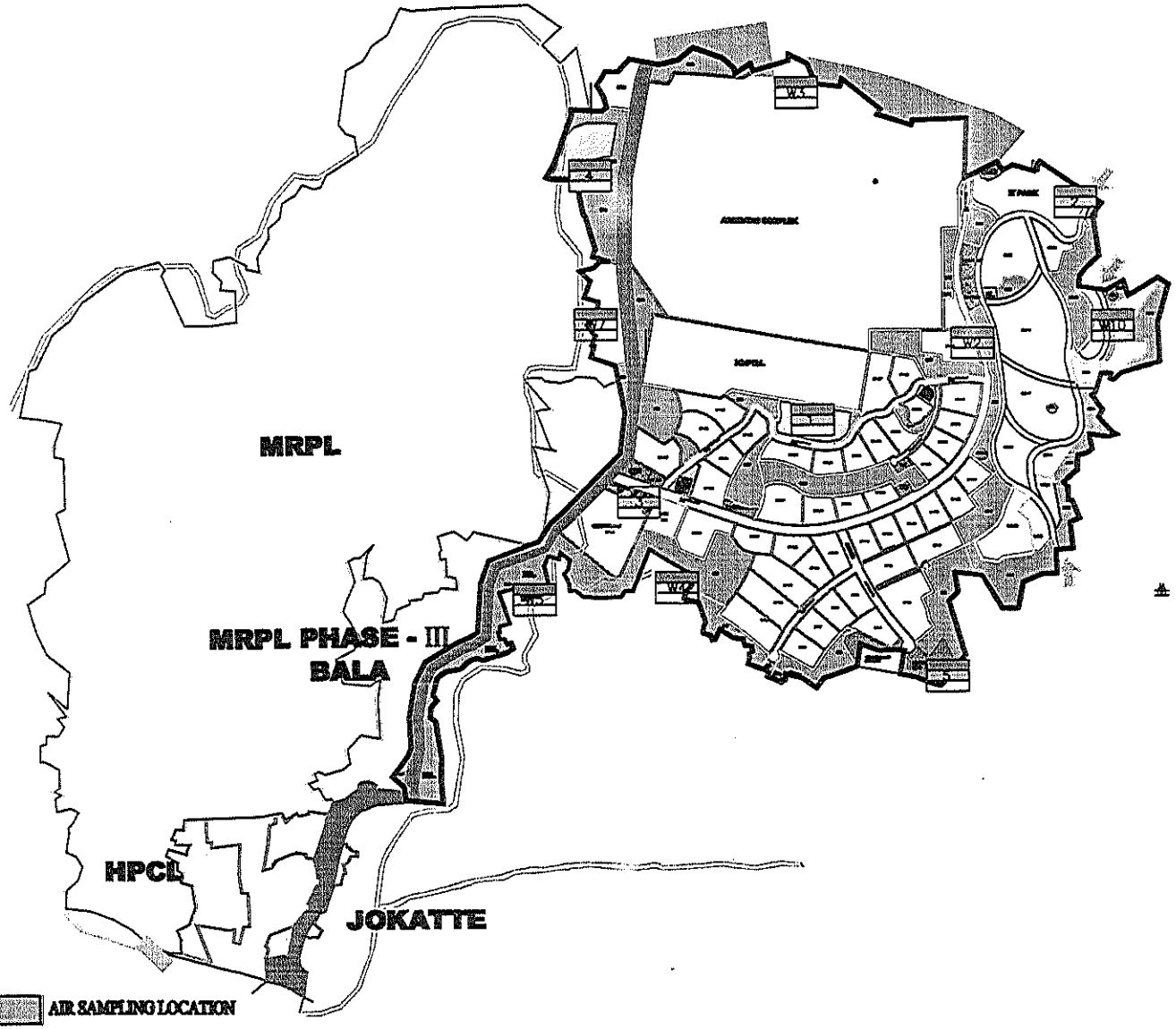
Anuja Anand
Convenor

Anil Relia
Director

Dr T. Ramasami
Chairman

ANNEXURE-II

MSEZ Phase I - ENVIRONMENT MONITORING LOCATIONS



Mangalore S E Z Ltd.
2nd Floor, M U D A Building
Urwa store, Mangalore

KMC Hospital

LIFE'S ON

MANGALURU

December 30, 2015

To,

Mr. Yogesha K
Deputy Manager-(R & R)
Mangalore SEZ Limited

Dear Sir,

Subject: Annual Health Check of Mangalore SEZ Employees

Season's Greetings from KMC Hospital, Mangaluru!

Through this communiqué we wish to confirm that 100 employees of Mangalore SEZ had undergone health check at our hospital in the month of July 2015.

Regards,

Praveen Kumar K
Deputy Manager- Relationship and Communication

Annexure - II

No.21-383/2007-IA-III
Government of India
Ministry of Environment and Forests
(IA-III Division)

Paryavaran Bhawan,
CGO Complex, Lodhi Road,
New Delhi - 110003.

Dated the 3rd April, 2008

Sub: Environment clearance for setting up of Phase-I of Special Economic Zone at Mangalore – regarding.

****

Reference is invited to letter No.FEE01CRZ2008, dated 22.1.2008 from Forest, Ecology and Environment Department, Government of Karnataka, letter No.MSEZL/BO/ENV/2007, dated 23.2.2007, dated 9.4.2007, No.MSEZL/COO/MLR/2007-08, dated 2.6.2007, No.MSEZL/COO/137/2007-08, dated 24.12.2007, No.MSEZL/BO/ENV/2008, dated 3.1.2008, No.MSEZL/COO/02/2008, dated 4.1.2008, No.MSEZL/COO/13/08, dated 13.1.2008, No.MSEZL/COO/2007-08, dated 23.2.2008 and No.MSEZL/BO/06/ENV/2008, dated 7.3.2008 from Mangalore SEZ Limited regarding the subject mentioned above. Subsequently, letters No.Nil, dated 5.3.2007 from Infrastructure Development Corporation Limited, O.O.No.O-27013/1/2005-ONGC.II (Pt.II), dated 14.3.2007, No.O-27013/1/2005-ONG-II(Pt.2), dated 6.6.2007 from Ministry of Petroleum & Natural Gas, No.17CAT/MRPL/2007-08/1185, dated 14.3.2008 and No.17CAT/MRPL-SEZ/2007-08/1230, dated 25.3.2008 from Karnataka State Pollution Control Board (KSPCB) and No.Nil, dated 19.3.2008 from Mangalore Refinery and Petrochemicals Limited (MRPL) has been taken into consideration. High Tide Line has been demarcated by NIO, Goa and has super imposed the project layout on the Coastal Regulation Zone map. Public Hearing for the project was held as per EIA Notification, 2006 on 28.11.2007.

2. The Mangalore Special Economic Zone (MSEZ) Phase-I involves a) MRPL Phase-III Refinery, b) Aromatic Complex and c) Olefin Complex are proposed to be developed by the anchor promoter of MSEZ project 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 and 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, Indian Strategic Petroleum Reserve Company Limited 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 BLF Gas) in the form of a bridge. The proposed Industrial Units in MSEZ Phase-I includes,-

I. MRPL Phase-III Refinery (The list of process units proposed in Phase-III refinery project):-

Sr. No.	Unit Name	Design Capacity
1.	CDU/VDU-III	3.00 MMTPA
2.	DCU	3.00 MMTPA
3.	Petro FCC/PRU/PCCU NSU	2.2 / 0.72 / 0.8 MMTPA
4.	DHDT	3.7 MMTPA

5.	CHT (Coker Heavy Gas oil Hydrotreater)	0.65 MMTPA
6.	H_2 Generation Unit	70 KTPA
7.	SULPHUR Block	3x185 TPD
8.	LOBS FPU/LOBS	0.60 /0.15 MMTPA
9.	CPP (Power/Steam)	84.0 MW / 606 TPH
10.	LPG,ATF/Kero Mercapton Treatment Unit	0.5 MMTPA
11.	Revamp of Existing HCU s to operate in once through mode.	To produce hydrotreated feed to PFCCU.
12.	Utilities	Appropriate facilities, meeting the requirement of above mentioned units.
13.	Offsites	Appropriate facilities to cater to above units.

II, Aromatic Complex

To meet the objective of producing paraxylene, aromatics complex has been considered. To maximize paraxylene, broad cut heavy naphtha streams are selected as feedstock to a new NHT/CCR. Aromatics precursors to the new reformer include constituents that produce toluene, C8-aromatics mix & C9+ aromatics. Whereas a xylene isomerization (ISOMER) 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 (PXREC) has been incorporated.

Sr. No.	Unit Name	Design Capacity
1.	NHT/CCR	0.95 MMTPA
2.	Isomerization Unit (ISOMER)	3.16 MMTPA
3.	Transalkylation & Disproportionation Unit (TADP)	1.72 MMTPA
4.	Paraxylene Recovery (PXREC)	4.07 MMTPA
5.	Xylene Fractionation Unit	4.64 MMTPA
6.	Aromatics Extraction Unit	0.79 MMTPA
7.	Benzene Toluene Fractionation Unit	2.2 MMTPA
8.	Captive power plant (CPP)	60 MW

III, Olefin Complex

The primary and major process unit at proposed Olefin Complex will be Naphtha Cracker Unit of 2.168 MMTPA naphtha cracking capacity. It produces ethylene, propylene, mixed C4s and raw pyrolysis gasoline apart from fuel gas and hydrogen which will be used internally. There would be import of polymer grade propylene as feed in addition to Naphtha into Olefin Complex as the proposed Naphtha Cracker capacity fall short to ascertain the envisage design capacity of overall Olefin Complex. The import is planned from adjacent MRPL refinery. There are about seven secondary processing units proposed in the Olefin Complex to manufacture the planned products like HDPE, LLDPE/HDPE, Butene, Polypropylene, C4 mix, Benzene, Pyrolysis gasoline, carbon black feed stock (CBFS) etc.. Proposed major process units in this complex are as follows :

Sr. No.	Unit Name	Design Capacity
1.	Naphtha Cracker	2,168 MMTPA (feed)
2.	HDPE Unit	350,000 TPA (product)
3.	C4 Hydrogenation Unit	240,000 TPA (Feed)
4.	LLDPE/LDPE Unit	400,000 TPA (product)
5.	Polypropylene unit	750,000 TPA (product)
6.	Butadiene Extraction Unit	12,250 TPA (product)
7.	Pyrolysis Gasoline Hydrogenation Unit (PGHU)	466,000 TPA (Feed)

8.	Benzene Extraction Unit	44,000 TPA (product)
9.	Captive Power Plant (CPP)	168 MW

3. The proposal was considered by Expert Committee for Infrastructure Development and Miscellaneous Projects at its meetings held on 19th to 21st April, 2007, 21st & 22nd June, 2007 and 27th & 28th February, 2008. Further site visit was undertaken by the above Committee 20th June, 2007 and public hearing, as per the Environmental Impact Assessment Notification, 2006 was conducted by the Karnataka State Pollution Control Board on 28.11.2007. To address any other issues which were not considered during the above public hearing the Ministry had constituted a technical Committee, which had public discussions and site visits on 2nd and 3rd February, 2008. Based on the recommendations of the above Expert Committee the Ministry hereby accords environmental clearance to the Phase-I of said project under the provisions of Environmental Impact Assessment Notification, 2006 and Coastal Regulation Zone Notification 1991, subject to the following conditions:-

A. SPECIFIC CONDITIONS:-

(i) No Objection Certificate from the Karnataka State Pollution Control Board shall be obtained before initiating the project.

(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.

(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.

(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.

(v) With regard to the containing the suspected contamination of the groundwater near Alhurkoill area of Kudhelhoor village, MRPL have given an undertaking vide their letter dated 19.3.2008 which is as follows:-

(a) "Implementation of recommendation of NGPRI will be started immediately after submission of their report."
(b) 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.
(c) 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.
(d) 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.

(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.

(vii) The R&R package shall be strictly in accordance with the laid down norms of the State Government.

(viii) A marine Environment Impact Assessment and Risk Assessment alongwith the Disaster Management Plan shall be prepared for the outfall facilities proposed in the Coastal Regulation Zone and the marine areas.

(ix) Project proponent shall put up a dedicated website and a display panel to inform the public regarding the Ambient Air Quality alongwith SO_2, NOx and other parameters as prescribed as Central Pollution Control Board (CPCB).

(x) The gaseous emissions (SO_2, NOx, 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.

(xi) The emission levels of the other pollutants shall also remain within the permissible levels.

(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.

(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 atleast 5% shall be for mangrove afforestation. The local Forest Department shall be associated for this purpose and requisite budget earmarked.

(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.

(xv) The project proponent shall ensure that during construction and operation of the project the traffic in the city is not affected.

(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.

(xvii) Low Sulphur Internal fuel oil and fuel gas shall be fired in process heaters and boilers.

(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_2O, SOx & CO_2 to the environment.

(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 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.

(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).

(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.

(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.

(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.

(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.

(xxvi) 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.

(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.

(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.

(xxix) The company shall strictly follow all the recommendations mentioned in the Charter on Corporate Responsibility for Environmental Protection (CREP).

(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.

(xxxi) Occupational Health Surveillance of the workers should be done on a regular basis and records maintained as per the Factories Act.

(xxxii) The Company shall implement all the recommendations made in the Environmental Impact Assessment /EMP report and risk assessment report.

(xxxiii) The company will undertake all relevant measures, as indicated during the Public Hearing for improving the Socio-economic conditions of the surrounding area.

(xxxiv) With regard to R&R colony the project proponent shall obtain all requisite clearances as prescribed by the concerned agencies.

B. GENERAL CONDITIONS:-

(i) The project authorities shall strictly adhere to the stipulations made by the concerned State Pollution Control Board (SPCB) and the State Government.

(ii) No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment and Forests.

(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.

(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.

(v) Industrial wastewater 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.

(vi) 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).

(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.

(viii) Authorization from the State Pollution Control Board must be obtained for collections/treatment/storage/disposal of hazardous wastes.

(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.

(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.

(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.

(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.

(xiii) 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 at least 30-40 years. Sufficient preventive measures shall be adopted to avoid direct exposure to emission and other Hydrocarbons etc.

(xiv) A separate environment management cell with full fledge laboratory facilities to carry out various management and monitoring functions shall be set up under the control of a Senior Executive.

4. The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.

5. The Ministry reserves the right to stipulate additional conditions if found necessary. The company shall implement these conditions in a time bound manner.

6. The above conditions will be enforced, inter-alia under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, the Public Liability Insurance Act, 1991, Hazardous Waste (Management & Handling) Rules, 1989 and Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989 along with their amendments and rules.

(Dr. A. Senthil Vel)
Additional Director

To,

Secretary,
Ecology and Environment,
Forest, Ecology and Environment Department,
Government of Karnataka,
Karnataka Government Secretariat,
7th Floor, 4th Stage, Multistoreyed Building,
Dr. B. R. Ambedkar Veedhi, Bangalore – 560001.

Copy to:-

(i) The Member Secretary, Karnataka State Pollution Control Board, 6,7,8, & 9 Floor (Public Utility Building), Netaji Subhash Chand Building, M. G. Road, Bangalore-560 001, Karnataka.
(ii) Shri I. S. N. Prasad, Managing Director and CEO, Mangalore SEZ, No.72/4, 1st Floor, Cunningham Road, Bangalore-560052.
(iii) M/s Mangalore SEZ Limited, 3rd Floor, Mangalore Urban Development Authority Building, Ashok Nagar, Urwa Stores, Mangalore-575006.
(iv) Managing Director, Infrastructure Development Corporation Limited, Core 4B, 4th Floor, India Habitat Centre, Lodhi Road, New Delhi-110003.
(v) The Chairman, Central Pollution Control Board, Parivesh Bhavan, CBD-cum- Office Complex, East Arjun Nagar, Delhi – 110032.
(vi) The Chief Conservator of Forests (Central), Ministry of Environment & Forests, Regional Office (SZ), Kendriya Sadan, 4th Floor, E&F Wings, 17th Main Road, I Block, Koramangla, Bangalore – 560034.
(vii) Director (EI), Ministry of Environment and Forests.
(viii) The Regional Office Cell, MoEF.
(vii) Guard File.
(viii) Monitoring File

(Dr. A. Senthil Vel)
Additional Director

No.21-383/2007-IA.III
Government of India
Ministry of Environment and Forests
(IA-III Division)

Paryavaran Bhawan,
CGO Complex, Lodhi Road,
New Delhi - 110003.

Dated: 13th July, 2012

To
The Managing Director,
Mangalore SEZ Ltd.
No.16, Pranava Park, 3rd Floor,
Infantry Road, Bangalore - 560 01

Sub: Amendment to Environment Clearance for setting up of Phase-I of Special Economic Zone at Mangalore by M/s. Mangalore SEZ Ltd- regarding.

Sir,

This has reference to your application No. MD/MSEZ/6/2011 dated 17.5.2011 and subsequent letter dated 28.11.2011 seeking amendment to the Environmental Clearance accorded earlier on 3.4.2008 for the above project under the EIA Notification, 2006. The amendment proposal has been appraised as per prescribed procedure in the light of provisions under EIA Notification, 2006 and its subsequent amendment, on the basis of mandatory documents enclosed with the application viz. drawing showing details/site plan, Compliance Status of EC, detailed note giving the proposed change, Greenbelt development of 33% and the additional clarifications furnished in response to the observations of the Expert Appraisal Committee constituted by the competent authority in its meetings held on 17th - 19th August 2011 and 15th - 16th December, 2011.

2. It is interalia, noted that the project involves Mangalore SEZ Phase-I involves (a) MRPL Phase-III Refinery (b) Aromatic Complex and (c) Olefin Complex along with associated infrastructure in 1800 acres of land. The proposed MSEZ is planned adjacent to the existing MRPL refinery complex on north & eastern sides and it is proposed to connect NMPT with a dedicated 70/100 m vide road-cum-pipeline for movement of cargo, crude and products between New Mangalore Port and MSEZ. The revised project details are as follows:

i. As the Olefin project is shelved due to non-availability of LNG, the area allocated for Olefin complex is proposed for downstream Petrochemical units which will consist of (i) P-Xylene based, O-Xylene based, Benzene based, (ii) Propylene + Benzene based, Pet Coke, Synthetic Gas-I, (iii) Plastic Park, (iv) Specialty Chemicals and (v) Synthetic Textiles.

ii. To detach MRPL Phase III Expansion project from MSEZ Phase I project as MRPL expansion is not part of MSEZ and is being developed in Domestic Tariff Area (DTA) is not developed as part of MSEZ Phase I project and MRPL to comply all the conditions of EC relevant with MRPL Phase III refinery project as part of their existing clearances.

3. The Expert Appraisal Committee, after due consideration of the relevant documents submitted by the project proponent and additional clarifications furnished in response to its observations, have recommended for the amendment of Environmental Clearance for the project mentioned above. Accordingly, the Ministry hereby accord necessary amendment to the Environmental Clearance for the above project as per the provisions of Environmental Impact Assessment Notification-2006 and its subsequent amendments, subject to strict compliance of the terms and conditions as follows:

(i) Only the sector specific units shall be permitted in the SEZ and those units shall obtain separate Environmental Clearance as applicable.

(ii) Proponent shall enhance the allocation for the CSR activities from 2.5 to 5 % of the total cost and item-wise details along with time bound action plan shall be prepared and submitted to the Ministry's Regional Office at Bangalore. Implementation of such program shall be ensured accordingly in a time bound manner.

(iii) The green belt area shall be 33 % all along the periphery and width of the green belt shall be minimum 50 mts.

4. All other terms and conditions of the Environmental Clearance Letter no.21-383/2007-IA.III dated 3.4.2008 remains unchanged.

5. This issues with the approval of Competent Authority.

Yours faithfully,

(Lalit Kapur)
Director (IA.III)

Copy to:-

1. The Member Secretary, Karnataka State Pollution Control Board, 6, 7,8 & 9 Floor (Public Utility Building), Netaji Subhash Chand Building, M. G. Road, Bangalore – 560 001, Karnataka.
2. M/s Mangalore SEZ Limited, 3rd Floor, Mangalore Urban Development Authority Building, Ashok Nagar, Urwa Stores, Mangalore – 575006.
3. Managing Director, Infrastructure Development Corporation Limited, Core 4B, 4th Floor India Habitat Centre, Lodhi Road, New Delhi – 110003.
4. The Chairman, Central Pollution Control Board, Parivesh Bhavan, CBD-cum-office Complex, East Arjun Nagar, Delhi – 110032.
5. The Chief Conservator of Forests (Central), Ministry of Environment & Forests, Regional Office (SZ), Kendriya Sadan, 4th Floor, E&F wings, 17th Main Road, 1 Block, Koranmangala, Bangalore – 560034.
6. Guard File.
7. IA – Division, Monitoring Cell, MoEF, New Delhi - 110003

(Lalit Kapur)
Director (IA.III)

F.No.21-383/2007-IA.III
Government of India
Ministry of Environment and Forests
(IA-III Division)

Paryavaran Bhawan,
CGO Complex, Lodhi Road,
New Delhi – 110003.

Dated: August 27, 2014

To
The Managing Director,
Mangalore SEZ Ltd.
No.16, Pranava Park, 3rd Floor,
Infantry Road, Bangalore – 560 01

Subject: Amendment to Environment Clearance for setting up of Phase-I of Special Economic Zone at Mangalore by M/s. Mangalore SEZ Ltd- Reg.

Sir,

This has reference to letter No. FEE 20 EAA 2012 dated 13.09.2012 and your subsequent letters dated 19.11.2012 and 05.02.2013 seeking amendment to the Environmental Clearance accorded earlier on 03.04.2008 for the above project under the EIA Notification, 2006. The amendment proposal has been appraised as per prescribed procedure in the light of provisions under EIA Notification, 2006 and its subsequent amendment, on the basis of mandatory documents enclosed with the application viz. Form-1, recommendation of SCZMA and the additional clarifications furnished in response to the observations of the Expert Appraisal Committee constituted by the competent authority in its meetings held on 8th -9th November, 2012 and 18th -19th February, 2013.

2. It is interalia, noted that the Ministry has issued an Environmental Clearance for setting up of Phase-I of Special Economic Zone vide letter No.21-383/2007-IA-III dated 03.04.2008. The Environmental Clearance envisages development of a dedicated 70/100 meter wide pipeline-cum-road (Total approx 15 km) Corridor for movement of Cargo, Crude and products between MSEZL & New Mangalore Port to provide port connectivity to the units. Since the MSEZ Pipeline-cum-road Corridor development was having interface with CRZ, the proposal of Corridor was recommended by Forest, Ecology and Environment Department, Government of Karnataka vide letter dated 22.01.2008 under the provision of Coastal Zone Notification.

3. The present proposal involves widening of existing public road towards river side adjacent to Mangalore SEZ proposed pipeline-cum-road Corridor in the Reach II area. Mangalore SEZ is developing the Pipeline cum road Corridor between SEZ to New Mangalore Port as part of the infrastructure facilities of SEZ. The corridor development is being undertaken by MSEZL in separate stretches in the recent months. In one of the stretches, referred to as Reach-II, during the execution of Corridor works parallel to Gurupur River by Mangalore SEZ Ltd, based on certain complaints, the Regional Office of the MoEF have monitored the project on 10.05.2012. The monitoring report states that road widening works are under progress in various reaches of Corridor and

preliminary ground strengthening/road widening works are being taken up by the project authorities along the Gurupur River in Corridor Reach-II. The report further states that the Ministry in the clearance issued, has not given any specific reference on the issue of widening the existing road along the riverward of the Gurupur River and SEZ authorities do not have any specific permission from the Ministry.

4. The project proponent has carried out impact assessment study for carrying out the Widening works to the Public road towards the river ward side. The Regional Director, Forest, Ecology & Environment Department, Govt. of Karnataka, Mangalore has carried out the site inspection of the Project on 28th December 2012 and submitted his recommendations vide letter dated 31.12.2012. The Regional Director in his letter has stated that the project area falls under CRZ-II and 1400mts of the proposed widening is clear of the river bank, 270mts is on embankment, 30mts on elevated road way.

5. The Secretary, Environment & Ecology Dept of Forest/Karnataka Coastal Zone Management Authority has recommended the proposal vide letter dated 11.01.2013 since, KCZMA does not exists.

6. The Expert Appraisal Committee, after due consideration of the relevant documents submitted by the project proponent and additional clarifications furnished in response to its observations, have recommended for the amendment of Environmental Clearance for the project mentioned above. Accordingly, the Ministry hereby accords necessary amendment to the Environmental Clearance for the above project as per the provisions of Environmental Impact Assessment Notification-2006 and its subsequent amendments, subject to strict compliance of the terms and conditions as follows:

(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.

(ii) The project proponent to take up the bank protection works like stone pitching etc to avoid soil erosion of the banks.

(iii) The project proponent to take up all adequate measures to mitigate the dust pollution during the road widening works.

(iv) The proponent shall not dump any construction wastes etc in the river portion.

7. All other terms and conditions of the Environmental Clearance letter no.21-383/2007-IA.III dated 03.04.2008 remains unchanged.

8. This issues with the approval of Competent Authority.

Yours faithfully,

(Lalit Kapur)
Director (IA.III)

Copy to:-

1. The Secretary, Department of Environment, Government of Karnataka, Bangaluru, Karnataka.
2. The Chairman, Central Pollution Control Board, Parivesh Bhavan, CBD-cum-office Complex, East Arjun Nagar, Delhi – 110032.
3. The Member Secretary, Karnataka State Pollution Control Board, 6, 7,8 & 9 Floor (Public Utility Building), Netaji Subhash Chand Building, M. G. Road, Bangalore – 560 001, Karnataka.
4. The Chief Conservator of Forests (Central), Ministry of Environment & Forests, Regional Office (SZ), Kendriya Sadan, 4th Floor, E&F wings, 17th Main Road, I Block, Koramangala, Bangalore – 560034.
5. Guard File.
6. IA – Division, Monitoring Cell, MoEF, New Delhi - 110003

(Lalit Kapur)
Director (IA.III)

F.No.21-383/2007-IA.III
Government of India
Ministry of Environment, Forest & Climate Change
(IA-III Section)

Indira Paryavaran Bhawan,
Jor Bagh Road
New Delhi - 110 003

Dated: 18th June, 2015

To
The Managing Director,
M/s Mangalore SEZ Ltd.,
No.16, Pranava Park, 3rd Floor,
Infantry Road, Bangalore – 560 001

Subject: Development of Multi Product Units as Mangalore SEZ is presently notified as Multi Product SEZ, Mangalore, Karnataka by M/s Mangalore SEZ Ltd. - Amendment to the Environmental Clearance dated 03.04.2008 - Reg.

Sir,

This has reference to your letter No. MSEZL/BG/06/EC/2014 dated 02.09.2014 and subsequent letter dated 12.11.2014 seeking amendment to the Environmental Clearance dated 03.04.2008.

2. M/s Mangalore SEZ Ltd. was accorded Environmental Clearance for the setting up of Phase-I of SEZ at Mangalore, Karnataka by the Ministry of Environment & Forest (MoEF) vide letter No. 21-383/2007-IA-III dated 03.04.2008. Two subsequent amendments were issued to the project vide even no. dated 13.07.2012 and 27.08.2014.

3. The Ministry of Environment, Forest & Climate Change has considered the application. It is noted that the present proposal is for amendment to the Environmental Clearance dated 03.04.2008 for setting up of Multi-Product Units along with Downstream Petroleum/Petrochemical units.

4. The project was examined by the Expert Appraisal Committee (EAC) in its 141st meeting held on 26th – 28th November, 2014. The project proponent informed that:

i. The EAC in its meeting held in October, 2014 suggested to the Ministry to examine whether amendment to the EC can be considered after 5 years from the date of clearance.
ii. The project has been commenced based on the clearance within 5 years from the date of issue.
iii. The Olefin complex which was permitted in original clearance was shelved and clearance obtained for downstream/ petrochemical units on 13th July, 2012. Present proposal is for allowing Multi Product Units along with Petrochemical and Downstream Petrochemicals as MSEZ is currently notified as Multi Product SEZ by Ministry of Commerce & Industry (MoCI).

iv. The total estimated pollution load will not increase beyond the earlier levels, however, the individual units proposed to come up within the SEZ will obtain separate EC.

5. EAC sought additional information such as comparative statement on the possible pollutants from the proposed activity with the already approved/operational components and compliance of conditions of the granted EC.

6. The proposal was again considered by the Expert Appraisal Committee (EAC), in its 146th meeting held on 9th – 11th March, 2015. The project proponent informed that:

i. The Project Proponent (PP) has appointed M/s Hubert Enviro Care systems Pvt. Ltd., with NABET certificate No.NABET/ EIA/ 1013/ 041 to carry out the assessment of the list and limits of the pollutants from the various proposed Multi Product Units in MSEZ.
ii. Based on the study by M/s Huber Enviro Care Systems, MSEZL has submitted the list and limits of possible pollutants from the Proposed Multi Product Units and six monthly statements related to compliances to EC conditions to Ministry vide MSEZL letter dated 21st January 2015.
iii. Assessment of pollution loads from the proposed Multi Product Units were made for the following scenarios and a comparison with approved pollution loads was done

   a. Scenario-1: considering 90% Petrochemical industries & 10% Downstream industries
   b. Scenario-2: considering 70% Petrochemical & 30% Downstream industries
   c. Scenario-3: considering 45% Petrochemical & 55% Downstream industries

iv. The objective of the study is to determine the locations for maximum ground level concentrations (GLC) for various air pollutants which could potentially be generated from the proposed various industrial units in the Mangalore Special Economic Zone (MSEZ) through air dispersion modelling technique.
v. The Air quality modelling for predicting GLC of various pollutants like SPM, SO2 and NOX was computed using AERMOD Modelling software system and AERMET software.
vi. AERMOD Software Version 7.5.0 was used for air dispersion modelling and is applicable to a wide range of buoyant or neutrally buoyant emissions up to a range of 50 km. In addition to more straight forward cases, AERMOD is also suitable for complex terrain and urban dispersion scenarios.
vii. The earlier approved MSEZ Phase-I project consists of three major units namely MRPL Phase-III refinery, Aromatic Complex and Olefin complex. Instead of olefin complex, Multiproduct industries are proposed which are considered as 3 scenarios mainly of Naphtha fuel consumption, LNG fuel consumption and Mix of Naphtha & LNG mixed fuel consumption respectively.

viii. Forecast from different scenarios of proposed Multi Product units is expected to be within the approved Environment Pollution loads of Olefin Complex.

7. The EAC, after deliberation, recommended the project for granting amendment to the Environmental Clearance dated 03.04.2008 for setting up of Multi-Product Units along with Downstream Petroleum/Petrochemical units. The Ministry of Environment, Forest & Climate Change hereby accords amendment to the Environmental Clearance dated 03.04.2008 for setting up of Multi-Product Units along with Downstream Petroleum/Petrochemical units, under the provisions of the EIA Notification, 2006 and amendments thereto and Circulars issued thereon and stipulates the following conditions:

(i) The individual industries shall obtain prior Environmental Clearance as required under EIA Notification, 2006. The Project Proponent shall only allow the projects that have obtained the requisite Environmental Clearance.

8. All the conditions stipulated in the Environmental Clearance vide letter no. 21-383/2007-IA-III dated 03.04.2008 and subsequent amendments vide letter even no. dated 13.07.2012 and 27.08.2014, shall remain unchanged.

Yours faithfully,

(Dr. Ranjini Warrier)
Director

Copy to:

(1) The Secretary, Department of Environment, Government of Karnataka, Bangalore.
(2) The Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-cum-Office Complex, East Arjun Nagar, Delhi – 110 032.
(3) The Member Secretary, Karnataka State Pollution Control Board, "Parisara Bhavan, 4th & 5th Floor, # 49, Church Street, Bangalore-560 001.
(4) Additional Principal CCF (C), Ministry of Environment, Forests and Climate Change, Regional Office (SZ), Kendriya Sadan, 4th Floor, E&F Wing, 17th Main Road, Koramangala II Block, Bangalore - 560034.
(5) IA - Division, Monitoring Cell, MOEF, New Delhi - 110003.
(6) Guard file.

(Dr. Ranjini Warrier)
Director

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	Total expense till Date	Balance	2015-16	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	1.99	0.02	0.02	-	-	-	-
b	Drinking Water facilities for neighboring Villages,6 acres & 9.58 Acers R&R Colony	1.50	2.20	1.20	0.26	0.04	1.50	0.00	-	-	-	-	-
c	Provision of Bore wells in Permude & Bajpe Villages	0.70		0.17	0.00	0.530	0.70	0.00	-	-	-	-	-
2	Sanitation facilities						0.00	0.00	-	-	-	-	-
a	Development of Under Ground Drainage	4.09	4.09	2.60	1.08		3.68	0.41	0.30	0.11	-	-	-
b	Skid mounted STPs for Kulai & Bajpe Villages	0.60	0.60	0.17	0.00	0.235	0.41	0.20	0.13	0.07	-	-	-
3	Community facilities						0.00	0.00					
a	Creation of self employment facilities by provision of suitable shops in Kulai & Permude villages	0.11	0.11	0.11	0.00		0.11	0.00	-	-	-	-	-
b	Sponsoring of Community facilities including Primary Health Centre, Play ground, Primary School, Post Office, gravy yard, compound wall, temple,Drain work near Bajana mandir jokatte, road repair near swayamlingeshwara temple bajpe etc etc	4.00	4.00	0.00	3.85	0.150	4.00	0.00	-	-	-	-	-
c	Any Miscellenous Developement works to Local communities	0.50	0.50	0.00	0.00	0.500	0.50	0.00	-	-	-	-	-
4	Educational Sponsorship						0.00	0.00					
a	Up gradation of Skills & Technical training facilities for local youth.	6.00	6.00	5.53	0.00	0.260	5.79	0.21	0.11	0.10	-	-	-
							0.00	0.00					
5	Bypass Road for connectivity between Suratkal to Bajpe for Public use.	36.98	36.98	17.84	7.26		25.10	11.88	9.88	2.00	-	-	-
6	Events Sponsorship						0.00	0.00					
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	1.90	0.10	0.10	-	-	-	-
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	1.85	0.15	0.10	0.05			-
							0.00	0.00					
7	Sponsoring education and cultural activities to local fishermen Community	2.97	2.93	0.93	0.00	0.39	1.32	1.65	1.00	0.65			
							0.00	0.00					
8	Development roads in sorrounding villages & Panchayat roads in Kateel, Permude & Kuthethoor Villages and villages enroute River water Pipeline	12.93	2.79	2.79	9.54	0.402	12.73	0.20	0.20	-	-	-	-
	Total	76.38	63.52	34.51	22.98	4.10	61.59	14.80	11.84	2.98	0.00	0.00	0.00

Annexure-II

ONGC Mangalore Petrochemicals Limited

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

REF: OMPL/MoEF/PK/2015-16/ Date: 25.11. 2015

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 April, 2015 to September, 2015

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,

30/11/15

Prashanth Kulkarni
Manager (TS)

Annexure-1

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		*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)	60 MW	*Please note that normal requirement will be in the range of 50- 55 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 300 displaced people and provided employmen, till date (30.11.2015)*
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 SO2, 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. Please find Green Belt area earmarked in the plant layout enclosed. Forest Dept. is lined up for this purpose. 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 3 years. OMPL has approaced Forest department , in this regard & has obtained quote for the same, which is under approval. Some of the species recommended in NEERI are, Acacia ferruginea DC (Mimosaceae), Acacia nilotica* (Mimosaceae), Ailanthus excelsa* (Simaroubiaceae), Albizia amara (Mimosaceae) Albizia labbeck* (Mimosaceae), Albizia doratissima(Mimosaceae), Alstonia scholaris* (Apocynaceae) Annogeissus latifolia (Combretaceae), Artocarpus integrifolia (Moraceae), Artocarpus lacucha (Moraceae), Azadirachta indica# (Meliaceae), Bauhinia malabarica (Fabaceae), Bauhinia racemosa* (Caesalpiniaceae), Butea monosperma (Fabaceae), Caesalpinia pulcherrima* (Caesalpiniaceae), Calophylum tomentosum, Cane sp. (Palmae), Canna orientalis (Cannaceae) Cassia fistula# (Caesalpiniaceae), Cassia siamea(Caesalpiniaceae), Casuarina equisetifolia#*
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 as follows, Domestic use - 1.05; Gardening - Nil (Downpours); Process - 1.29 Cooling - 17.8; Boiler Feed- 17.7 Total Consumption = 42.4*
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, *All heaters are installed with LOW NOx Burners*Heaters stacks are fitted with following Online analyzers*Carbon monoxide.*Sulphur Dioxide*Nitrogen Oxides*Suspended Particulate matters (SPM)*Benzene Tanks -- Internal Floating Roof Tank with Nitrogen Blanket*Paraffinic Raffinate (Volatile material) designed with Vapor recovery unit to recover vapor*Dispersion Model Analysis was done by Bell Energy India and following Online detectors are being installed*Benzene Detectors 27*H2S Detector 21*Hydrocarbon Detectors 193*Hydrogen Detectors 68*Fire Detectors (In case of Fire) 26*Sample Points are closed system to stop local venting and draining*Hydrocarbons drains are connected to closed Blow down system to recover hydrocarbon.* OMPL has a dedicated website 'www.ompl.co.in', wherein Environment Monitoring Parameters are periodically uploaded and available to the public*
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' emmission from EIA report for the project is estimated as 13.68 TPD. Avg SOx emmission per day is 2.68 TPD/day*
18	Quarterly monitoring of fugitive emissions shall be carried out by Fugitive Emision 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*Flare system is designed for smokeless burning by M/s AirOil *Study on Flare gas recovery will be looked into after commissioning of the Plant*
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 occurance of maximum ground level concentration and downwingd 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. The Six Monthly average values (in Micro Gm/ m3) (from April, 15 to Sept., 15) are as follows, Location 1 - OMPL East Side: PM10 - 63, PM2.5 -19, SOx-2.89 & NOx -3.56. Location 2 - OMPL West Side: PM10 - 63.8, PM2.5 -19, SOx-2.93 & NOx -3.53. Location 3 - Permude PM10 - 63.8, PM2.5 -18, SOx-2.75, & NOx -3.49: Location 4:- Shantinagar PM10 - 61.8, PM2.5 - 18, SOx-2.7, & NOx -3.36. Location 5 :- T-Ekkar PM10 - 61, PM2.5 -19, SOx-2.76, & NOx -3.35*

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 shall be transferred to the CPCB and SPCB tentatively by Jan, 2016. OMPL has dedicated Instrumentation Team and will establish 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)		*Please note, as a first step, identified the sources of noise & then taken up Attenuation measures, at the design stage* *Sources: Pumps, Compressors & Turbines.* *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.*
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		*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,* *Benzene Detectors 27 nos* *Hydrocarbon Detectors 193 nos* ** Incase of leak, the first step is to contain the leak & simultaneously leak arresting work is carried out* ** LDAR program ;_ detailed estimation of points completed for implimentation of the program*
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		*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*
25	The new standards/ norms that are being proposed by the CPCB for Petrochemical Plants and Refineries shall be applicable for the proposed expanson 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		*The new standards/ norms that are being proposed by the CPCB for Petrochemical Plants and Refineries are complied. 1. Online Monitoring system is provided to heater stacks 2. Online Detectors of HC, Benzene are installed, to check any fugitive emissions 3. The process vents are connected to flares through safety pop - up valves 4.HC sampling points closed loop systems 5. Storage of HC is in Floating roof tanks (as applicable) with double mechanical seals and Nitrogen blanketing*
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		*Please note Regular monitoring of groundwater is carried out at three locations surrounding 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.*
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 Pollution Control Board		*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*

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		*No oily sludge is handled in OMPL*
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- 2)*
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		*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*
31	Occupational Health Surveillance of the workers should be done on a regular basis and records maintained as per the Factories Act		*Complied and is ongoing process*
32	The company shall implement all the recommendations made in the Environmental Impact Assessment / EMP report and risk assessment report		*Complied*
33	The company will undertake all relevant measures, as indicated during the Public Hearing for improving the socio-economic conditions of the surrounding area		*Complied*
34	With regard to R & R colony the project proponent shall obtain all requisite clearences as prescribed by the concerned agencies		*NA*
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		*KSPCB stipulations will be adhered to*
2	No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment and Forests		*Agreed*
3	At no time, the emisions shall be allowed to go beyond the precribed 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		*Agreed*
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		*Influent parameters & Effluent parameters are measured through online measuring instruments installed at inlet & outlet of ETP. They include TOC, pH, COD, Oil, DO, Phenol, Benzene. Further regular Surface & Ground water is being monitored as advised by KSPCB. The Ground Water is monitored once in month, at four locations, for all the year round and compared with WHO Drinking Water Standards.*
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		*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 the 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 utilised in Green Belt Development.*

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)		*Sources: Pumps, Compressors & Turbines. Attenuation measures: 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 The Six Monthly Avg Noise level (April,2015 to Sept. 2015) OMPL East side Boundary :1 Day time - 64.2 dB(A) 2. Night Time - 50.9 dB(A). OMPL West side Boundary :1 Day time - 64.9 dB(A) 2. Night Time -53.1 dB(A). OMPL North side Boundary :1 Day time - 65.3 dB(A) 2. Night Time - 51.7 dB(A). OMPL South side Boundary :1 Day time - 62.7 dB(A) 2. Night Time -53.2 dB(A)*
7	The project authorities shall strictly cmply 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		*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*
8	Authorization from the State Pollution Control Board must be obtained for collections/ treatment/ storage/ disposal of Hazardous wastes		*Please note OMPL has obtained 'Authorization under Handling Hazardous Wastes' and valid upto 30th June, 2018*
9	The project authorities shall provide adequate funds both recuring 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		*Please note biannually compliance report is submitted on regular basis through MSEZ. The Environment monitored data are being uploaded in the OMPL website*
11	The project proponent shall inform the public that the project has been accorded environmental clearance by the Ministry and copies of the clearence 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		*Please note, the same was ensured by MSEZ*
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 commsiioning 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 fledge 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 clearence, 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 Cyclemax CCR unit for catalyst regeneration, Energy efficient column design for Xylene & BTF units, ISOMER & TADP units for getting high yield of paroxylene per unit of Naptha processed & an efficient, selective PAREX process for paroxylene 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 Occupationol 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 follwed 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	*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*
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.	*Agreed*
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.	*Agreed*

ONGC Mangalore Petrochemicals Ltd.

2nd Floor, MUDA [illegible] Civil Stores, Mangalore - 575 006
Phone +91-824 2451001-04 Fax +91-824 2451005
(A subsidiary of Mangalore Refinery and Petrochemicals Ltd.)

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

Date: 25.8.2015

MANGALORE SEZ LTD. RECEIVED 05 SEP 2015 6096 MANGALORE-575 006

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

Dear Sir,

Sub: Submission of Environmental Monitoring Report for the Month of July 2015, Production Report for July, 15 & Returns Regarding Water Consumed for the Month of July

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 July 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 July 2015, as Annexure-F
7. Production Report as Annexure-G

Thanking You,

R Sridharan
Chief of Operations

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

ANNEXURE - II

EHSRDC
ENVIRONMENTAL HEALTH AND SAFETY RESEARCH & DEVELOPMENT CENTRE

Recognised by Ministry of Environment & Forests (MoEF). Govt. of India, New Delhi, Dated : 28-07-2011 to 27-07-2016

ISO 9001:2008,

ISO 14001 : 2004

BS OHSAS 18001:2007

No.13/2, 1st Main Road, Near Fire Station,
Industrial Town, Rajajinagar, Bangalore - 560 010.
Tel : 080 23012100/ 121/122 Fax : 080 23012111
E-mail : info@ehsrdc.in / ehsrdc2010@gmail.com
Website : www.ehsrdc.in

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 Special 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/APM 550 Mini
   Respirable Dust Sampler – 460NL,
   CO & O_3 Analyzers.
5. Date of Collection : For the Month of July- 2015 (Monitored for 24 hours)
6. Sample Number : EHSRDC/OMPL/A/15/07/

PARAMETERS	DATE	WK 26		WK 27		WK 28		WK 29	
		06/07/2015	07/07/2015	13/07/2015	14/07/2015	20/07/2015	21/07/2015	27/07/2015	28/07/2015
	CODE	4411	4517	4777	4856	5020	5080	5281	5340
	LIMITS								
PM_{10} ($\mu g/m^3$)	100	68	61	66	57	59	62	64	64
$PM_{2.5}$ ($\mu g/m^3$)	60	20	17	18	23	13	18	22	19
SO_2 ($\mu g/m^3$)	80	3.72	3.19	3.15	3.03	2.99	2.81	3.20	3.61
NO_2 ($\mu g/m^3$)	80	4.15	4.19	4.29	3.89	4.43	3.25	4.08	2.70
CO (mg/m^3)	4	0.93	0.78	0.92	0.76	0.77	0.68	0.70	0.70
O_3 ($\mu g/m^3$)	180	0.88	0.83	0.86	0.82	0.82	0.86	0.81	0.73

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Website : www.ehsrdc.in

Test Report

PARAMETERS	DATE	WK 26		WK 27		WK 28		WK 29	
		06/07/2015	07/07/2015	13/07/2015	14/07/2015	20/07/2015	21/07/2015	27/07/2015	28/07/2015
	CODE	4411	4517	4777	4856	5020	5080	5281	5340
	LIMITS								
NH_3 ($\mu g/m^3$)	400	1.70	1.83	1.02	1.80	1.57	1.31	1.62	1.19
Lead ($\mu g/m^3$)	1	0.007	0.056	0.063	0.023	0.006	0.027	0.043	0.010
Arsenic (ng/m^3)	6	0.45	BDL	BDL	0.75	1.13	BDL	BDL	1.76
Nickel (ng/m^3)	20	1.67	1.08	BDL	2.05	1.99	2.36	1.44	2.65
Benzene ($\mu g/m^3$)	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

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Website : www.ehsrdc.in

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/APM 550 Mini Respirable Dust Sampler – 460NL, CO & O_3 Analyzers.
5. Date of Collection : For the Month of July- 2015 (Monitored for 24 hours)
6. Sample Number : EHSRDC/OMPL/A/15/07/

PARAMETERS	DATE	WK 26		WK 27		WK 28		WK 29	
		06/07/2015	07/07/2015	13/07/2015	14/07/2015	20/07/2015	21/07/2015	27/07/2015	28/07/2015
	CODE	4412	4518	4778	4857	5021	5081	5282	5341
	LIMITS								
PM_{10} ($\mu g/m^3$)	100	70	64	59	65	60	68	54	64
$PM_{2.5}$ ($\mu g/m^3$)	60	22	19	17	22	14	18	14	23
SO_2 ($\mu g/m^3$)	80	3.12	3.15	2.62	3.02	3.01	2.77	3.40	3.46
NO_2 ($\mu g/m^3$)	80	4.05	4.62	3.88	3.66	4.04	3.15	4.28	4.73
CO (mg/m^3)	4	0.79	0.88	0.85	0.78	0.83	0.81	0.73	0.89
O_3 ($\mu g/m^3$)	180	0.81	0.93	0.84	0.84	0.92	0.92	0.82	0.94

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Website : www.ehsrdc.in

Test Report

PARAMETERS	DATE	WK 26		WK 27		WK 28		WK 29	
		06/07/2015	07/07/2015	13/07/2015	14/07/2015	20/07/2015	21/07/2015	27/07/2015	28/07/2015
	CODE	4412	4518	4778	4857	5021	5081	5282	5341
	LIMITS								
NH_3 ($\mu g/m^3$)	400	1.35	1.78	1.83	1.22	1.48	1.36	1.67	2.40
Lead ($\mu g/m^3$)	1	0.008	0.010	0.015	0.014	0.017	0.044	0.022	0.016
Arsenic (ng/m^3)	6	1.05	BDL	0.462	1.83	0.24	BDL	0.745	BDL
Nickel (ng/m^3)	20	1.11	2.60	1.80	2.89	1.84	1.05	2.56	0.93
Benzene ($\mu g/m^3$)	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

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Website : www.ehsrdc.in

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 Special 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/APM 550 Mini Respirable Dust Sampler – 460NL, CO & O_3 Analyzers.
5. Date of Collection : For the Month of July- 2015 (Monitored for 24 hours)
6. Sample Number : EHSRDC/OMPL/A/15/07/

PARAMETERS	DATE	WK 26		WK 27		WK 28		WK 29	
		08/07/2015	09/07/2015	15/07/2015	16/07/2015	22/07/2015	23/07/2015	29/07/2015	30/07/2015
	CODE	4586	4631	4897	4930	5134	5192	5421	[illegible]
	LIMITS								
PM_{10} ($\mu g/m^3$)	100	58	62	63	66	59	57	54	59
$PM_{2.5}$ ($\mu g/m^3$)	60	16	18	16	18	17	15	17	19
SO_2 ($\mu g/m^3$)	80	2.89	3.83	3.07	3.28	2.17	2.88	3.22	3.12
NO_2 ($\mu g/m^3$)	80	3.22	3.94	4.15	4.75	3.72	3.58	4.18	4.18
CO (mg/m^3)	4	0.78	0.80	0.78	0.69	0.65	0.77	0.62	0.88
O_3 ($\mu g/m^3$)	180	0.83	0.81	0.85	0.77	0.83	0.80	0.81	0.96

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Website : www.ehsrdc.in

Test Report

PARAMETERS	DATE	WK 26		WK 27		WK 28		WK 29	
		08/07/2015	09/07/2015	15/07/2015	16/07/2015	22/07/2015	23/07/2015	29/07/2015	30/07/2015
	CODE	4586	4631	4897	4930	5134	5192	5421	5469
	LIMITS								
NH_3 ($\mu g/m^3$)	400	1.62	1.83	1.86	1.58	1.44	2.09	1.72	1.55
Lead ($\mu g/m^3$)	1	0.003	0.100	0.017	0.003	0.011	0.032	0.004	0.104
Arsenic (ng/m^3)	6	1.24	0.67	1.49	0.51	0.741	1.132	2.72	1.36
Nickel (ng/m^3)	20	2.15	1.64	1.76	2.41	0.32	0.90	1.06	0.98
Benzene ($\mu g/m^3$)	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

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Website : www.ehsrdc.in

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/APM 550 Mini Respirable Dust Sampler – 460NL, CO & O_3 Analyzers.
5	Date of Collection	:	For the Month of July- 2015 (Monitored for 24 hours)
6.	Sample Number	:	EHSRDC/OMPL/A/15/07/

PARAMETERS	DATE	WK 26		WK 27		WK 28		WK 29	
		09/07/2015	10/07/2015	16/07/2015	17/07/2015	23/07/2015	24/07/2015	30/07/2015	31/07/2015
	CODE	4632	4633	4931	4962	5193	5213	5470	5534
	LIMITS								
PM_{10} ($\mu g/m^3$)	100	70	65	69	61	55	60	64	61
PM_{25} ($\mu g/m^3$)	60	25	13	17	13	14	20	22	19
SO_2 ($\mu g/m^3$)	80	3.81	2.86	2.78	3.12	3.19	2.40	3.98	2.65
NO_2 ($\mu g/m^3$)	80	4.62	3.21	4.14	4.72	4.17	3.31	4.53	3.89
CO (mg/m^3)	4	0.78	0.84	0.81	0.79	0.63	0.88	0.66	0.55
O_3 ($\mu g/m^3$)	180	0.84	0.92	0.88	0.84	0.77	0.91	0.73	0.95

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Test Report

PARAMETERS	DATE	WK 26		WK 27		WK 28		WK 29	
		09/07/2015	10/07/2015	16/07/2015	17/07/2015	23/07/2015	24/07/2015	30/07/2015	31/07/2015
	CODE	4632	4633	4931	4962	5193	5213	5470	5534
	LIMITS								
NH_3 ($\mu g/m^3$)	400	2.11	1.75	1.68	1.76	2.14	1.60	2.12	2.02
Lead ($\mu g/m^3$)	1	0.027	0.009	0.017	0.056	0.011	0.023	0.045	0.033
Arsenic (ng/m^3)	6	BDL	0.414	0.74	0.87	2.29	0.90	BDL	0.66
Nickel (ng/m^3)	20	2.55	1.87	1.33	1.09	1.56	2.12	0.89	1.12
Benzene ($\mu g/m^3$)	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

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Website : www.ehsrdc.in

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 Special 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/APM 550 Mini Respirable Dust Sampler – 460NL,
   CO & O_3 Analyzers.
5. Date of Collection : For the Month of July- 2015 (Monitored for 24 hours)
6. Sample Number : EHSRDC/OMPL/A/15/07/

PARAMETERS	DATE	WK 26		WK 27		WK 28		WK 29	
		06/07/2015	07/07/2015	13/07/2015	14/07/2015	20/07/2015	21/07/2015	27/07/2015	28/07/2015
	CODE	4413	4519	4779	4858	5022	5082	5283	5342
	LIMITS								
PM_{10} ($\mu g/m^3$)	100	68	69	66	65	64	67	63	58
$PM_{2.5}$ ($\mu g/m^3$)	60	21	24	22	19	15	16	22	19
SO_2 ($\mu g/m^3$)	80	3.62	3.22	2.88	3.82	2.78	3.25	3.76	2.11
NO_2 ($\mu g/m^3$)	80	4.15	3.89	3.90	4.52	3.47	4.22	4.18	3.30
CO (mg/m^3)	4	0.92	0.81	0.88	0.88	0.72	0.79	0.69	0.77
O_3 ($\mu g/m^3$)	180	0.95	0.75	0.83	0.92	0.81	0.85	0.81	0.88

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Website : www.ehsrdc.in

Test Report

PARAMETERS	DATE	WK 26		WK 27		WK 28		WK 29	
		06/07/2015	07/07/2015	13/07/2015	14/07/2015	20/07/2015	21/07/2015	27/07/2015	28/07/2015
	CODE	4413	4519	4779	4858	5022	5082	5283	5342
	LIMITS								
NH_3 ($\mu g/m^3$)	400	1.62	1.33	1.62	2.19	1.39	1.53	2.41	2.26
Lead ($\mu g/m^3$)	1	0.020	0.084	BDL	0.071	0.007	0.011	0.033	0.006
Arsenic (ng/m^3)	6	1.63	BDL	BDL	BDL	2.82	1.51	1.13	0.087
Nickel (ng/m^3)	20	2.58	1.33	2.40	2.40	2.80	3.89	1.21	1.89
Benzene ($\mu g/m^3$)	5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
B(a)P (ng/m^3)	1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

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ANNEXURE - 5

EHSRDC
ENVIRONMENTAL HEALTH AND SAFETY RESEARCH & DEVELOPMENT CENTRE

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Industrial Town, Rajajinagar, Bangalore - 560 010.
Tel : 080 23012100/ 121/122 Fax : 080 23012111
E-mail : info@ehsrdc.in / ehsrdc2010@gmail.com
Website : www.ehsrdc.in

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 SpecialEconomic 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	:	13.07.2015
5.	Particulars of Sample Collected	:	Bore well water, Grab Sampling
6.	Date of Sample Receipt	:	15.07.2015
7.	Sample Number	:	EHSRDC/OMPL/W/15/07/4765
8.	Protocol	:	APHA, 22nd Edition

Sl.No	PARAMETERS	UNIT	Test Methods	Std. IS 10500:2012 (Second Revision)		Code
				DL	PL	GW1
						4765
1.	pH	--	4500H+ B	6.5-8.5		6.92
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	0.60
6.	Total Dissolved Solids	mg/L	2540 C	500	2000	108
7.	Total Hardness	mg/L	2340 C	200	600	52
8.	Calcium as Ca	mg/L	3500-Ca	75	200	14.4
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	0.55
11.	Fluoride as F	mg/L	4500F D	1	1.5	0.10
12.	Nitrate as NO_3	mg/L	4500-NO_3 E	45		BDL
13.	Chloride as Cl	mg/L	4500-Cl B	250	1000	13.79
14.	Iron as Fe	mg/L	3500-Fe B	0.3		0.17
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	Absent		Absent
18.	Total Coliform	CFU/100ml	9222 B	10		<1

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

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E-mail : info@ehsrdc.in / ehsrdc2010@gmail.com
Website : www.ehsrdc.in

Test Report

ANALYSIS REPORT OF FRESH WATER QUALITY

1. Name of the Location : GW2: Gagtel 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 : 13.07.2015
5. Particulars of Sample Collected : Bore well water, Grab Sampling
6. Date of Sample Receipt : 15.07.2015
7. Sample Number : EHSRDC/OMPL/W/15/07/4766
8. Protocol : APHA, 22nd Edition

Sl.No	PARAMETERS	UNIT	Test Methods	Std. IS 10500:2012 (Second Revision)		Code
				DL	PL	GW2
						4766
1.	pH	--	4500H+ B	6.5-8.5		8.07
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	0.61
6.	Total Dissolved Solids	mg/L	2540 C	500	2000	191
7.	Total Hardness	mg/L	2340 C	200	600	128
8.	Calcium as Ca	mg/L	3500-Ca	75	200	32
9.	Magnesium as Mg	mg/L	3500 Mg B	30	100	11.66
10.	Sulphate as SO_4	mg/L	4500-SO_4^{2-}	200	400	17.83
11.	Fluoride as F	mg/L	4500F D	1	1.5	0.91
12.	Nitrate as NO_3	mg/L	4500-NO_3 E	45		0.52
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	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.

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Website : www.ehsrdc.in

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 : 13.07.2015
5. Particulars of Sample Collected : Open well water, Grab Sampling
6. Date of Sample Receipt : 15.07.2015
7. Sample Number : EHSRDC/OMPL/W/15/07/4767
8. Protocol : APHA, 22nd Edition

Sl.No	PARAMETERS	UNIT	Test Methods	Std. IS 10500:2012 (Second Revision)		Code
				DL	PL	OW1
						4767
1.	pH	--	4500H+ B	6.5-8.5		6.81
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	164
7.	Total Hardness	mg/L	2340 C	200	600	104
8.	Calcium as Ca	mg/L	3500-Ca	75	200	22.4
9.	Magnesium as Mg	mg/L	3500 Mg B	30	100	11.66
10.	Sulphate as SO_4	mg/L	4500-SO_4^{2-}	200	400	32.93
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		0.41
13.	Chloride as Cl	mg/L	4500-Cl B	250	1000	13.79
14.	Iron as Fe	mg/L	3500-Fe B	0.3		0.09
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	Absent		Absent
18.	Total Coliform	CFU/100ml	9222 B	10		1

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

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Website : www.ehsrdc.in

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 : 13.07.2015
5. Particulars of Sample Collected : Open well water, Grab Sampling
6. Date of Sample Receipt : 15.07.2015
7. Sample Number : EHSRDC/OMPL/W/15/07/4768
8. Protocol : APHA, 22nd Edition

Sl.No	PARAMETERS	UNIT	Test Methods	Std. IS 10500:2012 (Second Revision)		Code
				DL	PL	OW2
						4768
1.	pH	--	4500H+ B	6.5-8.5		7.76
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	1.10
6.	Total Dissolved Solids	mg/L	2540 C	500	2000	53.0
7.	Total Hardness	mg/L	2340 C	200	600	32
8.	Calcium as Ca	mg/L	3500-Ca	75	200	8.0
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	4.69
11.	Fluoride as F	mg/L	4500F D	1	1.5	0.15
12.	Nitrate as NO_3	mg/L	4500-NO_3 E	45		0.63
13.	Chloride as Cl	mg/L	4500-Cl B	250	1000	9.85
14.	Iron as Fe	mg/L	3500-Fe B	0.3		0.22
15.	Alkalinity	mg/L	2320 B	200	600	20
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.

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Website : www.ehsrdc.in

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 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 : 13.07.2015
5. Particulars of Sample Collected : Surface outlet water, Grab Sampling
6. Date of Sample Receipt : 15.07.2015
7. Sample Number : EHSRDC/OMPL/W/15/07/4769
8. Protocol : APHA, 22nd Edition

Sl.No	PARAMETERS	UNIT	Test Methods	Std. IS 10500:2012 (Second Revision)		Code
				DL	PL	SW1
						4769
1.	pH	--	4500H+ B	6.5-8.5		7.24
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	0.49
6.	Total Dissolved Solids	mg/L	2540 C	500	2000	82.0
7.	Total Hardness	mg/L	2340 C	200	600	36
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	8.91
11.	Fluoride as F	mg/L	4500F D	1	1.5	0.38
12.	Nitrate as NO_3	mg/L	4500-NO_3 E	45		9.56
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	40
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.

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Website : www.ehsrdc.in

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 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 : 13.07.2015
5. Particulars of Sample Collected : Surface inlet water, Grab Sampling
6. Date of Sample Receipt : 15.07.2015
7. Sample Number : EHSRDC/OMPL/W/15/07/4770
8. Protocol : APHA, 22nd Edition

Sl.No	PARAMETERS	UNIT	Test Methods	Std. IS 10500:2012 (Second Revision)		Code
				DL	PL	SW2
						4770
1.	pH	--	4500H+ B	6.5-8.5		7.02
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	0.77
6.	Total Dissolved Solids	mg/L	2540 C	500	2000	79.0
7.	Total Hardness	mg/L	2340 C	200	600	32.0
8.	Calcium as Ca	mg/L	3500-Ca	75	200	8.0
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	8.52
11.	Fluoride as F	mg/L	4500F D	1	1.5	0.16
12.	Nitrate as NO_3	mg/L	4500-NO_3 E	45		3.10
13.	Chloride as Cl	mg/L	4500-Cl B	250	1000	19.7
14.	Iron as Fe	mg/L	3500-Fe B	0.3		BDL
15.	Alkalinity	mg/L	2320 B	200	600	20
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.

End of Report

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Website : www.ehsrdc.in

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 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 : 13.07.2015
5. Particulars of Sample Collected : Bore well water ,Grab Sampling
6. Date of Sample Receipt : 15.07.2015
7. Sample Number : EHSRDC/OMPL/W/15/07/4771
8. Protocol : APHA, 22nd Edition

Sl.No	PARAMETERS	UNIT	Test Methods	Std. IS 10500:2012 (Second Revision)		Code
				DL	PL	GW3
						4771
1.	pH	--	4500H+ B	6.5-8.5		7.65
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	1.25
6.	Total Dissolved Solids	mg/L	2540 C	500	2000	152
7.	Total Hardness	mg/L	2340 C	200	600	104
8.	Calcium as Ca	mg/L	3500-Ca	75	200	20.8
9.	Magnesium as Mg	mg/L	3500 Mg B	30	100	12.6
10.	Sulphate as SO_4	mg/L	4500-SO_4^{2-}	200	400	17.35
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		BDL
13.	Chloride as Cl	mg/L	4500-Cl B	250	1000	13.79
14.	Iron as Fe	mg/L	3500-Fe B	0.3		0.17
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	Absent		Absent
18.	Total Coliform	CFU/100ml	9222 B	10		<1

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

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Website : www.ehsrdc.in

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 : 13.07.2015
5. Particulars of Sample Collected : Open well water, Grab Sampling
6. Date of Sample Receipt : 15.07.2015
7. Sample Number : EHSRDC/OMPL/W/15/07/4772
8. Protocol : APHA, 22nd Edition

Sl.No	PARAMETERS	UNIT	Test Methods	Std. IS 10500:2012 (Second Revision)		Code
				DL	PL	OW3
						4772
1.	pH	--	4500H+ B	6.5-8.5		6.96
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	0.99
6.	Total Dissolved Solids	mg/L	2540 C	500	2000	81.0
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	2.38
11.	Fluoride as F	mg/L	4500F D	1	1.5	0.20
12.	Nitrate as NO_3	mg/L	4500-NO_3 E	45		2.38
13.	Chloride as Cl	mg/L	4500-Cl B	250	1000	15.76
14.	Iron as Fe	mg/L	3500-Fe B	0.3		0.11
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	Absent		Absent
18.	Total Coliform	CFU/100ml	9222 B	10		2

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

End of Report

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Website : www.ehsrdc.in

Test Report

ANALYSIS REPORT OF FRESH WATER QUALITY

1. Name of the Location : GW4: OMPL (Near ETP Tank).
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 : 13.07.2015
5. Particulars of Sample Collected : Bore well water, Grab Sampling
6. Date of Sample Receipt : 15.07.2015
7. Sample Number : EHSRDC/OMPL/W/15/07/4773
8. Protocol : APHA, 22nd Edition

Sl.No	PARAMETERS	UNIT	Test Methods	Std. IS 10500:2012 (Second Revision)		Code
				DL	PL	GW4
						4773
1.	pH	--	4500H+ B	6.5-8.5		7.09
2.	Colour	Hazen	--	5	15	<1
3.	Odour	--	--	Unobjectionable		Unobjectionable
4.	Taste	--	--	Agreeable		Agreeable
5.	Turbidity	NTU	2130 B	1	5	0.44
6.	Total Dissolved Solids	mg/L	2540 C	500	2000	66
7.	Total Hardness	mg/L	2340 C	200	600	32
8.	Calcium as Ca	mg/L	3500-Ca	75	200	9.6
9.	Magnesium as Mg	mg/L	3500 Mg B	30	100	1.93
10.	Sulphate as SO_4	mg/L	4500-SO_4^{2-}	200	400	16.32
11.	Fluoride as F	mg/L	4500F D	1	1.5	BDL
12.	Nitrate as NO_3	mg/L	4500-NO_3 E	45		1.15
13.	Chloride as Cl	mg/L	4500-Cl B	250	1000	11.82
14.	Iron as Fe	mg/L	3500-Fe B	0.3		BDL
15.	Alkalinity	mg/L	2320 B	200	600	20
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.

End of Report

Authorized Signatory

ANNEXURE-C

ENVIRONMENTAL HEALTH AND SAFETY RESEARCH & DEVELOPMENT CENTRE

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Website : www.ehsrdc.in

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	:	11.07.2015
4.	Particulars of Sample Collected	:	Ambient Noise Level collected through Sound Level Meter EQ-8852/C-322
5.	Date of Sample Receipt	:	13.07.2015
6.	Sample Number	:	EHSRDC/OMPL/N/15/07/ 4638-4641
7.	Method Adopted	:	Instrument Method

Code No	Sample Location	Parameters		Std.
		Day Time dB(A)	Night Time dB(A)	
4638	OMPL South Side Boundary	68.62	49.72	75.0 dB(A) Day
4639	OMPL North Side Boundary	69.88	54.26	
4640	OMPL West Side Boundary	69.67	50.08	70 dB(A) Night
4641	OMPL East Side Boundary	68.49	55.60	

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

ANNEXURE - D

ENVIRONMENTAL HEALTH AND SAFETY RESEARCH & DEVELOPMENT CENTRE

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Website : www.ehsrdc.in

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)-2
3. Sample Collected by : M/s. Environmental Health and Safety Research & Development Centre, Bangalore – 560 010.
4. Date of Collection : 07.07.2015
5. Particulars of Sample Collected : Emissions from stack collected through Stack Sampler VSS1
6. Date of Sample Receipt : 10.07.2015
7. Sample Number : EHSRDC/OMPL/S/07/15/4520
8. Report to be Sent : 31.07.2015
9. Page No : 1 of 10

GENERAL DETAILS

Date of Monitoring	07.07.2015
Ambient Temperature (^{0}C)	29
Stack Temperature (^{0}C)	132
Velocity (m/s)	7.28
Diameter (m)	2.8
Cross Sectional Area in meter square (m^2)	6.154
Quantity of flue gas discharged into atmosphere (Nm^3/h)	120258.22

RESULTS

Parameters	Protocol	Unit	Result	Standard
Particulate matter	IS: 11255(P1)	mg/Nm^3	28.63	50
Nitrogen dioxide	IS: 11255 (P7)	mg/ Nm^3	11.88	350
Sulphur dioxide	IS: 11255, (P2)	mg/Nm3	8.53	850
Carbon Monoxide	EPA method (10)	mg/Nm^3	20.4	150

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

End of Report

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Test Report

ANALYSIS REPORT FOR SOURCE EMISSION

1. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited Mangalore Special 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 : 07.07.2015
5. Particulars of Sample Collected : Emissions from stack collected through Stack Sampler VSS1
6. Date of Sample Receipt : 10.07.2015
7. Sample Number : EHSRDC/OMPL/S/07/15/4521
8. Report to be Sent : 31.07.2015
9. Page No : 2 of 10

GENERAL DETAILS

Date of Monitoring	07.07.2015
Ambient Temperature (^{0}C)	28
Stack Temperature (^{0}C)	122
Velocity (m/s)	7.86
Diameter (m)	2.74
Cross Sectional Area in meter square (m^2)	5.893
Quantity of flue gas discharged into atmosphere (Nm^3/h)	127135.9

RESULTS

Parameters	Protocol	Unit	Result	Standard
Particulate matter	IS: 11255(P1)	mg/Nm^3	19	50
Nitrogen dioxide	IS: 11255 (P7)	mg/ Nm^3	15.69	350
Sulphur dioxide	IS: 11255, (P2)	mg/Nm3	12	850
Carbon Monoxide	EPA method (10)	mg/Nm^3	31.5	150

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

End of Report

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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)-I
3. Sample Collected by : M/s. Environmental Health and Safety Research & Development Centre, Bangalore - 560 010.
4. Date of Collection : 07.07.2015
5. Particulars of Sample Collected : Emissions from stack collected through Stack Sampler VSS1
6. Date of Sample Receipt : 10.07.2015
7. Sample Number : EHSRDC/OMPL/S/07/15/4522
8. Report to be Sent : 31.07.2015
9. Page No : 3 of 10

GENERAL DETAILS

Date of Monitoring	07.07.2015
Ambient Temperature (^{0}C)	28
Stack Temperature (^{0}C)	145
Velocity (m/s)	10.24
Diameter (m)	2.80
Cross Sectional Area in meter square (m^2)	6.154
Quantity of flue gas discharged into atmosphere (Nm^3/h)	163417.7

RESULTS

Parameters	Protocol	Unit	Result	Standard
Particulate matter	IS: 11255(P1)	mg/Nm^3	22.3	50
Nitrogen dioxide	IS: 11255 (P7)	mg/ Nm^3	8.75	350
Sulphur dioxide	IS: 11255, (P2)	mg/Nm3	7.68	850
Carbon Monoxide	EPA method (10)	mg/Nm^3	25.9	150

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

End of Report

Authorized Signatory

EHSRDC
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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 : 08.07.2015
5. Particulars of Sample Collected : Emissions from stack collected through Stack Sampler VSS1
6. Date of Sample Receipt : 10.07.2015
7. Sample Number : EHSRDC/OMPL/S/07/15/4523
8. Report to be Sent : 31.07.2015
9. Page No : 4 of 10

GENERAL DETAILS

Date of Monitoring	08.07.2015
Ambient Temperature (^{0}C)	26
Stack Temperature (^{0}C)	231
Velocity (m/s)	7.24
Diameter (m)	2.3
Cross Sectional Area in meter square (m^2)	4.153
Quantity of flue gas discharged into atmosphere (Nm^3/h)	64209.469

RESULTS

Parameters	Protocol	Unit	Result	Standard
Particulate matter	IS: 11255(P1)	mg/Nm^3	2.3	5
Nitrogen dioxide	IS: 11255 (P7)	mg/ Nm^3	7.49	250
Sulphur dioxide	IS: 11255, (P2)	mg/Nm3	4.80	50
Carbon Monoxide	EPA method (10)	mg/Nm^3	25.8	100

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

End of Report

Praveena
Authorized Signatory

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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	:	08.07.2015
5.	Particulars of Sample Collected	:	Emissions from stack collected through Stack Sampler VSS1
6.	Date of Sample Receipt	:	10.07.2015
7.	Sample Number	:	EHSRDC/OMPL/S/07/15/4524
8.	Report to be Sent	:	31.07.2015
9.	Page No	:	5 of 10

GENERAL DETAILS

Date of Monitoring	08.07.2015
Ambient Temperature (^{0}C)	28
Stack Temperature (^{0}C)	238
Velocity (m/s)	6.43
Diameter (m)	1.94
Cross Sectional Area in meter square (m^2)	2.954
Quantity of flue gas discharged into atmosphere (Nm^3/h)	40268.469

RESULTS

Parameters	Protocol	Unit	Result	Standard
Particulate matter	IS: 11255(P1)	mg/Nm^3	2.62	5
Nitrogen dioxide	IS: 11255 (P7)	mg/ Nm^3	13.07	250
Sulphur dioxide	IS: 11255, (P2)	mg/Nm3	11.20	50
Carbon Monoxide	EPA method (10)	mg/Nm^3	33.8	100

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

End of Report

Authorized Signatory

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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 : 08.07.2015
5. Particulars of Sample Collected : Emissions from stack collected through Stack Sampler VSS1
6. Date of Sample Receipt : 10.07.2015
7. Sample Number : EHSRDC/OMPL/S/07/15/4525
8. Report to be Sent : 31.07.2015
9. Page No : 6 of 10

GENERAL DETAILS

Date of Monitoring	08.07.2015
Ambient Temperature (^{0}C)	27
Stack Temperature (^{0}C)	222
Velocity (m/s)	7.34
Diameter (m)	1.75
Cross Sectional Area in meter square (m^2)	2.404
Quantity of flue gas discharged into atmosphere (Nm^3/h)	38488.845

RESULTS

Parameters	Protocol	Unit	Result	Standard
Particulate matter	IS: 11255(P1)	mg/Nm^3	4.43	5
Nitrogen dioxide	IS: 11255 (P7)	mg/ Nm^3	16.20	250
Sulphur dioxide	IS: 11255, (P2)	mg/Nm3	13.96	50
Carbon Monoxide	EPA method (10)	mg/Nm^3	27.4	100

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

End of Report

Authorized Signatory

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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 : 09.07.2015
5. Particulars of Sample Collected : Emissions from stack collected through Stack Sampler VSS1
6. Date of Sample Receipt : 13.07.2015
7. Sample Number : EHSRDC/OMPL/S/07/15/4634
8. Report to be Sent : 31.07.2015
9. Page No : 7 of 10

GENERAL DETAILS

Date of Monitoring	09.07.2015
Ambient Temperature (^{0}C)	23
Stack Temperature (^{0}C)	345
Velocity (m/s)	10.06
Diameter (m)	4.10
Cross Sectional Area in meter square (m^2)	13.196
Quantity of flue gas discharged into atmosphere (Nm^3/h)	228995.47

RESULTS

Parameters	Protocol	Unit	Result	Standard
Particulate matter	IS: 11255(P1)	mg/Nm^3	3.7	5
Nitrogen dioxide	IS: 11255 (P7)	mg/ Nm^3	13.97	250
Sulphur dioxide	IS: 11255, (P2)	mg/Nm3	11.52	50
Carbon Monoxide	EPA method (10)	mg/Nm^3	26.9	100

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

End of Report

Praveena
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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 ReboilerHeater Part -A
3. Sample Collected by : M/s. Environmental Health and Safety Research & Development Centre, Bangalore – 560 010.
4. Date of Collection : 10.07.2015
5. Particulars of Sample Collected : Emissions from stack collected through Stack Sampler VSS1
6. Date of Sample Receipt : 13.07.2015
7. Sample Number : EHSRDC/OMPL/S/07/15/4635
8. Report to be Sent : 31.07.2015
9. Page No : 8 of 10

GENERAL DETAILS

Date of Monitoring	10.07.2015
Ambient Temperature (^{0}C)	22
Stack Temperature (^{0}C)	185
Velocity (m/s)	8.21
Diameter (m)	3.69
Cross Sectional Area in meter square (m^2)	10.689
Quantity of flue gas discharged into atmosphere (Nm^3/h)	203360.35

RESULTS

Parameters	Protocol	Unit	Result	Standard
Particulate matter	IS: 11255(P1)	mg/Nm^3	20.50	50
Nitrogen dioxide	IS: 11255 (P7)	mg/ Nm^3	17.36	350
Sulphur dioxide	IS: 11255, (P2)	mg/Nm3	10.43	850
Carbon Monoxide	EPA method (10)	mg/Nm^3	36.4	150

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

End of Report

Authorized Signatory

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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 : 10.07.2015
5. Particulars of Sample Collected : Emissions from stack collected through Stack Sampler VSS1
6. Date of Sample Receipt : 13.07.2015
7. Sample Number : EHSRDC/OMPL/S/07/15/4636
8. Report to be Sent : 31.07.2015
9. Page No : 9 of 10

GENERAL DETAILS

Date of Monitoring	10.07.2015
Ambient Temperature (^{0}C)	23
Stack Temperature (^{0}C)	180
Velocity (m/s)	7.48
Diameter (m)	3.69
Cross Sectional Area in meter square (m^2)	10.689
Quantity of flue gas discharged into atmosphere (Nm^3/h)	188043.901

RESULTS

Parameters	Protocol	Unit	Result	Standard
Particulate matter	IS: 11255(P1)	mg/Nm^3	33.40	50
Nitrogen dioxide	IS: 11255 (P7)	mg/ Nm^3	20.68	350
Sulphur dioxide	IS: 11255, (P2)	mg/Nm3	15.36	850
Carbon Monoxide	EPA method (10)	mg/Nm^3	31.9	150

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

End of Report

Authorized Signatory

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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(Toluene Column Reboiler heater)
3. Sample Collected by : M/s. Environmental Health and Safety Research & Development Centre, Bangalore – 560 010.
4. Date of Collection : 10.07.2015
5. Particulars of Sample Collected : Emissions from stack collected through Stack Sampler VSS1
6. Date of Sample Receipt : 13.07.2015
7. Sample Number : EHSRDC/OMPL/S/07/15/4637
8. Report to be Sent : 31.07.2015
9. Page No : 10 of 10

GENERAL DETAILS

Date of Monitoring	10.07.2015
Ambient Temperature (^{0}C)	22
Stack Temperature (^{0}C)	175
Velocity (m/s)	6.58
Diameter (m)	3.29
Cross Sectional Area in meter square (m^2)	8.497
Quantity of flue gas discharged into atmosphere (Nm^3/h)	132539.995

RESULTS

Parameters	Protocol	Unit	Result	Standard
Particulate matter	IS: 11255(P1)	mg/Nm^3	16.90	50
Nitrogen dioxide	IS: 11255 (P7)	mg/ Nm^3	18.54	350
Sulphur dioxide	IS: 11255, (P2)	mg/Nm3	14.40	850
Carbon Monoxide	EPA method (10)	mg/Nm^3	32.4	150

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

End of Report

Authorized Signatory

ANNEXURE - E

EHS R&D
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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 Special 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	:	13.07.2015
5.	Particulars of Sample Collected	:	ETP Guard Pond Discharge Treated Effluent, Grab Sampling
6.	Date of Sample Receipt	:	15.07.2015
7.	Sample Number	:	EHSRDC/OMPL/ W/15/07/4774
8.	Analysis started on	:	15.07.2015
9.	Analysis Completed on	:	21.07.2015
10.	Page No.	:	01 of 2
11.	Report to be Sent	:	22.07.2015
12.	Protocol	:	APHA,22nd Edition/IS Method

Sl.No	Parameters	Test Methods	Unit	Result	Tolerance limit
1.	pH	IS 3025(Part-11) :1983	-	8.36	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	26	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	Not Detected	15
7.	C.O.D	5220 B	mg/L	20	125
8.	Total Suspended Solids	2540 D	mg/L	7.0	20
9.	Phosphate as PO_4	4500- P D	mg/L	0.11	3
10.	Total Kjeldahl Nitrogen	4500- Norg B	mg/L	11.76	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

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Test Report

Sample Number: EHSRDC/OMPL/ W/15/07/4774

14.	Ammonical Nitrogen	4500- NH3,B,C	mg/L	5.32	15
15.	Hexavalent Chromium	3500- Cr B	mg/L	BDL	0.1
16.	Sulphide	IS 3025 (part 29): 1986	mg/L	1.0	1.0
17.	Fluoride as F	IS 3025(Part 60): 2008	mg/L	0.49	1.5
18.	Nitrate as NO_3	IS 3025(Part 34) :1988	mg/L	1.42	20
19.	Iron as Fe	IS 3025(Part 53):2003	mg/L	0.04	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	0.022	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	0.002	0.2
25.	Zinc as Zn	IS 3025(Part 49):1994	mg/L	0.085	5
26.	Copper as Cu	IS 3025(Part-42):1992	mg/L	0.008	1
27.	Manganese as Mn	3111 B	mg/L	0.04	2
28.	Vanadium	3500 -V	mg/l	0.004	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	µg/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

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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Form-1 (Rule 4)

Returns Regarding Water Consumed during the Month of July, 2015

Name and address of the Consumer	Purpose for which water consumed	Reading at the begining 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 Leters	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	68414	68414			
	Boiler Feed Water	0	84642	84642			
	Fire Water	0	2473	2473			
	Domestic purpose						
	Drinking Water & Sanitation			3734.5			Flow through Running hours of pumps recorded
	Processing whereby water gets polluted and the pollutants are easily bio-degradable						
	Service Water			3730			Subtracting total flow (by running hours of pumps) from BFW & CT consumption
Total Consumption				163043.5			

Signature of the Consumer :

Name R Sridharan, Chief of Operations

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

ANNEXURE 1

ANNEXURE - G

ONGC Mangalore Petrochemicals Limited

Production Details for July – 2015

Net Naptha Processed – 91,663 MT

Sl. No.	Name of the Product	Quantity, MT
1	Paraxylene (Product)	48523
2	Benzene (Co product)	14469

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/

MANGALORE SEZ LTD. RECEIVED 19 OCT 2015 MANGALORE-575 006

Date:13/10/2015

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

Dear Sir,

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

ANNEXURE - A

EHSRDC
ENVIRONMENTAL HEALTH AND SAFETY RESEARCH & DEVELOPMENT CENTRE

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Website : www.ehsrdc.in

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 Special 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 & O_3 Analyzers.
5. Date of Collection : For the Month of Sep- 2015 (Monitored for 24 hours)
6. Sample Number : EHSRDC/OMPL/A/15/09/

PARAMETERS	DATE	WK 34		WK 35		WK 36		WK 37	
		01/09/2015	02/09/2015	07/09/2015	08/09/2015	14/09/2015	15/09/2015	21/09/2015	22/09/2015
	CODE	6644	6647	6770	6831	7088	7094	7197	7242
	LIMITS								
PM_{10} ($\mu g/m^3$)	100	70	58	57	68	59	66	59	63
$PM_{2.5}$ ($\mu g/m^3$)	60	20	15	16	20	19	24	18	21
SO_2 ($\mu g/m^3$)	80	3.73	2.19	3.40	3.03	3.12	3.19	3.49	3.27
NO_2 $\mu g/m^3$)	80	4.29	3.80	4.93	3.89	4.18	4.25	4.76	4.14
CO (mg/m^3)	4	0.79	0.73	0.91	0.82	0.88	0.83	0.86	0.91
O_3 ($\mu g/m^3$)	180	0.84	0.85	0.89	0.84	0.96	0.80	0.93	0.93

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See NOTE overleaf

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Website : www.ehsrdc.in

Test Report

PARAMETERS	DATE	WK 34		WK 35		WK 36		WK 37	
		01/09/2015	02/09/2015	07/09/2015	08/09/2015	14/09/2015	15/09/2015	21/09/2015	22/09/2015
	CODE	6644	6647	6770	6831	7088	7094	7197	7242
	LIMITS								
NH_3 ($\mu g/m^3$)	400	1.25	1.80	2.18	1.63	2.19	1.73	3.10	1.96
Lead ($\mu g/m^3$)	1	0.007	0.009	0.010	0.015	0.009	0.015	0.010	0.033
Arsenic (ng/m^3)	6	0.496	0.934	BDL	0.56	0.98	0.24	BDL	BDL
Nickel (ng/m^3)	20	BDL	BDL	2.83	1.23	1.08	1.02	1.44	BDL
Benzene ($\mu g/m^3$)	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

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Website : www.ehsrdc.in

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 Special 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 & O_3 Analyzers.
5	Date of Collection	:	For the Month of Sep- 2015 (Monitored for 24 hours)
6.	Sample Number	:	EHSRDC/OMPL/A/15/09/

PARAMETERS	DATE	WK 34		WK 35		WK 36		WK 37	
		01/09/2015	02/09/2015	07/09/2015	08/09/2015	14/09/2015	15/09/2015	21/09/2015	22/09/2015
	CODE	6643	6646	6769	6830	7087	7093	7196	7241
	LIMITS								
PM_{10} ($\mu g/m^3$)	100	63	67	62	61	58	64	57	59
$PM_{2.5}$ ($\mu g/m^3$)	60	16	18	18	17	17	21	16	18
SO_2 ($\mu g/m^3$)	80	2.79	3.20	2.79	3.72	3.19	3.13	3.81	3.18
NO_2 ($\mu g/m^3$)	80	3.19	4.45	3.73	4.15	3.83	4.30	4.63	4.73
CO (mg/m^3)	4	0.80	0.75	0.70	0.81	0.89	0.83	0.84	0.74
O_3 ($\mu g/m^3$)	180	0.84	0.79	0.82	0.84	0.80	0.73	0.75	0.83

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Website : www.ehsrdc.in

Test Report

PARAMETERS	DATE	WK 34		WK 35		WK 36		WK 37	
		06/07/2015	07/07/2015	13/07/2015	14/07/2015	20/07/2015	21/07/2015	27/07/2015	28/07/2015
	CODE	6643	6646	6769	6830	7087	7093	7196	7241
	LIMITS								
NH_3 ($\mu g/m^3$)	400	2.11	1.96	1.59	1.83	1.65	2.25	2.69	2.21
Lead ($\mu g/m^3$)	1	0.005	0.005	0.010	0.018	0.028	0.015	0.043	0.065
Arsenic (ng/m^3)	6	0.245	0.442	BDL	0.753	BDL	0.491	BDL	BDL
Nickel (ng/m^3)	20	BDL	BDL	2.45	1.05	1.87	1.76	1.07	BDL
Benzene ($\mu g/m^3$)	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

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Website : www.ehsrdc.in

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 Special 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 & O_3 Analyzers.
5. Date of Collection : For the Month of Sep- 2015 (Monitored for 24 hours)
6. Sample Number : EHSRDC/OMPL/A/15/09/

PARAMETERS	DATE	WK 34		WK 35		WK 36		WK 37	
		03/09/2015	04/09/2015	09/09/2015	10/09/2015	16/09/2015	17/09/2015	23/09/2015	24/09/2015
	CODE	6684	6764	6851	6922	7109	7129	7324	7325
	LIMITS								
PM_{10} ($\mu g/m^3$)	100	59	62	65	59	67	62	66	68
$PM_{2.5}$ ($\mu g/m^3$)	60	16	20	22	17	22	18	18	19
SO_2 ($\mu g/m^3$)	80	3.82	3.66	2.77	2.62	3.19	2.83	3.18	2.63
NO_2 ($\mu g/m^3$)	80	4.19	4.63	3.15	3.87	4.35	3.45	4.89	3.83
CO (mg/m^3)	4	0.78	0.89	0.66	0.78	0.87	0.82	0.92	0.83
O_3 ($\mu g/m^3$)	180	0.81	0.91	0.73	0.80	0.075	0.95	0.97	0.87

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Website : www.ehsrdc.in

Test Report

PARAMETERS	DATE	WK 34		WK 35		WK 36		WK 37	
		03/09/2015	04/09/2015	09/09/2015	10/09/2015	16/09/2015	17/09/2015	23/09/2015	24/09/2015
	CODE	6684	6764	6851	6922	7109	7129	7324	7325
	LIMITS								
NH_3 ($\mu g/m^3$)	400	1.29	1.72	2.03	1.63	1.83	1.63	2.73	2.58
Lead ($\mu g/m^3$)	1	0.008	0.015	0.020	0.046	0.027	0.011	0.039	0.026
Arsenic (ng/m^3)	6	0.996	BDL	2.04	0.81	BDL	0.245	BDL	BDL
Nickel (ng/m^3)	20	BDL	BDL	2.31	1.48	2.03	3.99	1.70	2.72
Benzene ($\mu g/m^3$)	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

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Website : www.ehsrdc.in

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 Special 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 & O_3 Analyzers.
5	Date of Collection	:	For the Month of Sep- 2015 (Monitored for 24 hours)
6.	Sample Number	:	EHSRDC/OMPL/A/15/09/

PARAMETERS	DATE	WK 34		WK 35		WK 36		WK 37	
		04/09/2015	05/09/2015	10/09/2015	11/09/2015	17/09/2015	18/09/2015	24/09/2015	25/09/2015
	CODE	6765	6766	6923	6995	7130	7131	7326	7327
	LIMITS								
PM_{10} ($\mu g/m^3$)	100	56	60	54	58	53	63	68	70
$PM_{2.5}$ ($\mu g/m^3$)	60	17	19	16	19	15	18	21	24
SO_2 ($\mu g/m^3$)	80	2.93	2.95	3.84	3.89	2.93	3.81	3.58	3.59
NO_2 ($\mu g/m^3$)	80	3.51	3.20	4.11	4.45	3.22	4.56	4.69	4.63
CO (mg/m^3)	4	0.78	0.93	0.84	0.83	0.75	0.79	0.83	0.77
O_3 ($\mu g/m^3$)	180	0.83	0.80	0.90	0.87	0.78	0.82	0.86	0.85

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E-mail : info@ehsrdc.in / ehsrdc2010@gmail.com
Website : www.ehsrdc.in

Test Report

PARAMETERS	DATE	WK 34		WK 35		WK 36		WK 37	
		04/09/2015	05/09/2015	10/09/2015	11/09/2015	17/09/2015	18/09/2015	24/09/2015	25/09/2015
	CODE	6765	6766	6923	6995	7130	7131	7326	7327
	LIMITS								
NH_3 ($\mu g/m^3$)	400	1.66	1.78	1.92	1.68	1.81	1.63	2.39	2.95
Lead ($\mu g/m^3$)	1	0.009	0.019	0.007	0.049	0.006	0.011	0.010	0.007
Arsenic (ng/m^3)	6	0.24	BDL	1.5	0.24	BDL	BDL	0.74	BDL
Nickel (ng/m^3)	20	BDL	BDL	1.53	2.52	1.45	1.68	1.91	BDL
Benzene ($\mu g/m^3$)	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

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Website : www.ehsrdc.in

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 & O_3 Analyzers.
5. Date of Collection : For the Month of Sep- 2015 (Monitored for 24 hours)
6. Sample Number : EHSRDC/OMPL/A/15/09/

PARAMETERS	DATE	WK 34		WK 35		WK 36		WK 37	
		01/09/2015	02/09/2015	07/09/2015	08/09/2015	14/09/2015	15/09/2015	21/09/2015	22/09/2015
	CODE	6642	6645	6768	6829	7086	7092	7195	7240
	LIMITS								
PM_{10} ($\mu g/m^3$)	100	67	66	61	63	66	67	65	55
$PM_{2.5}$ ($\mu g/m^3$)	60	18	14	19	17	23	19	17	15
SO_2 ($\mu g/m^3$)	80	3.11	3.96	3.08	3.61	3.88	3.35	2.93	3.63
NO_2 ($\mu g/m^3$)	80	4.09	4.32	3.93	2.70	4.20	4.29	3.66	4.82
CO (mg/m^3)	4	0.70	0.95	0.75	0.75	0.90	0.83	0.72	0.83
O_3 ($\mu g/m^3$)	180	0.89	0.84	0.81	0.83	0.84	0.95	0.81	0.91

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PARAMETERS	DATE	WK 34		WK 35		WK 36		WK 37	
		01/09/2015	02/09/2015	07/09/2015	08/09/2015	14/09/2015	15/09/2015	21/09/2015	22/09/2015
	CODE	6642	6645	6768	6829	7086	7092	7195	7240
	LIMITS								
NH_3 ($\mu g/m^3$)	400	2.18	2.39	1.92	1.09	1.35	1.88	1.93	1.99
Lead ($\mu g/m^3$)	1	0.011	0.009	0.014	0.013	0.015	0.027	0.011	0.010
Arsenic (ng/m^3)	6	0.249	0.268	BDL	BDL	BDL	BDL	0.489	BDL
Nickel (ng/m^3)	20	BDL	1.72	1.47	2.15	1.05	2.48	1.77	2.29
Benzene ($\mu g/m^3$)	5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
B(a)P (ng/m^3)	1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

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ANNEXURE -15

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Website : www.ehsrdc.in

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 SpecialEconomic 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	:	10.09.2015
5.	Particulars of Sample Collected	:	Bore well water, Grab Sampling
6.	Date of Sample Receipt	:	11.09.2015
7.	Sample Number	:	EHSRDC/OMPL/W/15/09/6852
8.	Protocol	:	APHA, 22nd Edition

Sl.No	PARAMETERS	UNIT	Test Methods	Std. IS 10500:2012 (Second Revision)		Code
				DL	PL	GW1
						6852
1.	pH	--	4500H+ B	6.5-8.5		7.11
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	3.4
6.	Total Dissolved Solids	mg/L	2540 C	500	2000	174.0
7.	Total Hardness	mg/L	2340 C	200	600	91.0
8.	Calcium as Ca	mg/L	3500-Ca	75	200	21.2
9.	Magnesium as Mg	mg/L	3500 Mg B	30	100	9.23
10.	Sulphate as SO_4	mg/L	4500-SO_4^{2-}	200	400	4.18
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		0.63
13.	Chloride as Cl	mg/L	4500-Cl B	250	1000	9.09
14.	Iron as Fe	mg/L	3500-Fe B	0.3		0.29
15.	Alkalinity	mg/L	2320 B	200	600	107
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.

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Website : www.ehsrdc.in

Test Report

ANALYSIS REPORT OF FRESH WATER QUALITY

1.	Name of the Location	:	GW2: Gagtel 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	:	10.09.2015
5.	Particulars of Sample Collected	:	Bore well water, Grab Sampling
6.	Date of Sample Receipt	:	11.09.2015
7.	Sample Number	:	EHSRDC/OMPL/W/15/09/6853
8.	Protocol	:	APHA, 22nd Edition

Sl.No	PARAMETERS	UNIT	Test Methods	Std. IS 10500:2012 (Second Revision)		Code
				DL	PL	GW2
						6853
1.	pH	--	4500H+ B	6.5-8.5		6.72
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	4.47
6.	Total Dissolved Solids	mg/L	2540 C	500	2000	182.0
7.	Total Hardness	mg/L	2340 C	200	600	113
8.	Calcium as Ca	mg/L	3500-Ca	75	200	32.8
9.	Magnesium as Mg	mg/L	3500 Mg B	30	100	7.53
10.	Sulphate as SO_4	mg/L	4500-SO_4^{2-}	200	400	17.35
11.	Fluoride as F	mg/L	4500F D	1	1.5	0.30
12.	Nitrate as NO_3	mg/L	4500-NO_3 E	45		BDL
13.	Chloride as Cl	mg/L	4500-Cl B	250	1000	10.52
14.	Iron as Fe	mg/L	3500-Fe B	0.3		0.26
15.	Alkalinity	mg/L	2320 B	200	600	119
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.

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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 SpecialEconomic 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 : 10.09.2015
5. Particulars of Sample Collected : Open well water, Grab Sampling
6. Date of Sample Receipt : 11.09.2015
7. Sample Number : EHSRDC/OMPL/W/15/09/6854
8. Protocol : APHA, 22nd Edition

Sl.No	PARAMETERS	UNIT	Test Methods	Std. IS 10500:2012 (Second Revision)		Code
				DL	PL	OW1
						6854
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	1.18
6.	Total Dissolved Solids	mg/L	2540 C	500	2000	144
7.	Total Hardness	mg/L	2340 C	200	600	106
8.	Calcium as Ca	mg/L	3500-Ca	75	200	32.4
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	33.52
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		BDL
13.	Chloride as Cl	mg/L	4500-Cl B	250	1000	8.61
14.	Iron as Fe	mg/L	3500-Fe B	0.3		BDL
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.

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Website : www.ehsrdc.in

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 SpecialEconomic 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 : 10.09.2015
5. Particulars of Sample Collected : Open well water, Grab Sampling
6. Date of Sample Receipt : 11.09.2015
7. Sample Number : EHSRDC/OMPL/W/15/09/6855
8. Protocol : APHA, 22nd Edition

Sl.No	PARAMETERS	UNIT	Test Methods	Std. IS 10500:2012 (Second Revision)		Code
				DL	PL	OW2
						6855
1.	pH	--	4500H+ B	6.5-8.5		6.49
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	1.14
6.	Total Dissolved Solids	mg/L	2540 C	500	2000	74
7.	Total Hardness	mg/L	2340 C	200	600	26
8.	Calcium as Ca	mg/L	3500-Ca	75	200	7.6
9.	Magnesium as Mg	mg/L	3500 Mg B	30	100	1.70
10.	Sulphate as SO_4	mg/L	4500-SO_4^{2-}	200	400	4.37
11.	Fluoride as F	mg/L	4500F D	1	1.5	0.43
12.	Nitrate as NO_3	mg/L	4500-NO_3 E	45		1.83
13.	Chloride as Cl	mg/L	4500-Cl B	250	1000	29.67
14.	Iron as Fe	mg/L	3500-Fe B	0.3		0.21
15.	Alkalinity	mg/L	2320 B	200	600	23
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.

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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 : 10.09.2015
5. Particulars of Sample Collected : Surface outlet water, Grab Sampling
6. Date of Sample Receipt : 11.09.2015
7. Sample Number : EHSRDC/OMPL/W/15/09/6856
8. Protocol : APHA, 22nd Edition

Sl.No	PARAMETERS	UNIT	Test Methods	Std. IS 10500:2012 (Second Revision)		Code
				DL	PL	SW1
						6856
1.	pH	--	4500H+ B	6.5-8.5		6.65
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	4.1
6.	Total Dissolved Solids	mg/L	2540 C	500	2000	124
7.	Total Hardness	mg/L	2340 C	200	600	46
8.	Calcium as Ca	mg/L	3500-Ca	75	200	14
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	12.42
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		0.85
13.	Chloride as Cl	mg/L	4500-Cl B	250	1000	2.67
14.	Iron as Fe	mg/L	3500-Fe B	0.3		0.23
15.	Alkalinity	mg/L	2320 B	200	600	42
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.

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Website : www.ehsrdc.in

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 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 : 10.09.2015
5. Particulars of Sample Collected : Surface inlet water, Grab Sampling
6. Date of Sample Receipt : 11.09.2015
7. Sample Number : EHSRDC/OMPL/W/15/09/6857
8. Protocol : APHA, 22nd Edition

Sl.No	PARAMETERS	UNIT	Test Methods	Std. IS 10500:2012 (Second Revision)		Code
				DL	PL	SW2
						6857
1.	pH	--	4500H+ B	6.5-8.5		7.26
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	4.40
6.	Total Dissolved Solids	mg/L	2540 C	500	2000	132
7.	Total Hardness	mg/L	2340 C	200	600	72
8.	Calcium as Ca	mg/L	3500-Ca	75	200	18.4
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	13.13
11.	Fluoride as F	mg/L	4500F D	1	1.5	0.06
12.	Nitrate as NO_3	mg/L	4500-NO_3 E	45		0.63
13.	Chloride as Cl	mg/L	4500-Cl B	250	1000	65.08
14.	Iron as Fe	mg/L	3500-Fe B	0.3		0.09
15.	Alkalinity	mg/L	2320 B	200	600	68
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.

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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 : 10.09.2015
5. Particulars of Sample Collected : Bore well water ,Grab Sampling
6. Date of Sample Receipt : 11.09.2015
7. Sample Number : EHSRDC/OMPL/W/15/09/6858
8. Protocol : APHA, 22nd Edition

Sl.No	PARAMETERS	UNIT	Test Methods	Std. IS 10500:2012 (Second Revision)		Code GW3
				DL	PL	6858
1.	pH	--	4500H+ B	6.5-8.5		6.58
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	2.75
6.	Total Dissolved Solids	mg/L	2540 C	500	2000	148
7.	Total Hardness	mg/L	2340 C	200	600	109
8.	Calcium as Ca	mg/L	3500-Ca	75	200	28.4
9.	Magnesium as Mg	mg/L	3500 Mg B	30	100	9.23
10.	Sulphate as SO_4	mg/L	4500-SO_4^{2-}	200	400	14.81
11.	Fluoride as F	mg/L	4500F D	1	1.5	0.35
12.	Nitrate as NO_3	mg/L	4500-NO_3 E	45		BDL
13.	Chloride as Cl	mg/L	4500-Cl B	250	1000	10.05
14.	Iron as Fe	mg/L	3500-Fe B	0.3		0.19
15.	Alkalinity	mg/L	2320 B	200	600	107
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.

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Website : www.ehsrdc.in

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 : 10.09.2015
5. Particulars of Sample Collected : Open well water, Grab Sampling
6. Date of Sample Receipt : 11.09.2015
7. Sample Number : EHSRDC/OMPL/W/15/09/6859
8. Protocol : APHA, 22nd Edition

Sl.No	PARAMETERS	UNIT	Test Methods	Std. IS 10500:2012 (Second Revision)		Code
				DL	PL	OW3
						6859
1.	pH	--	4500H+ B	6.5-8.5		7.74
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	1.48
6.	Total Dissolved Solids	mg/L	2540 C	500	2000	89
7.	Total Hardness	mg/L	2340 C	200	600	34
8.	Calcium as Ca	mg/L	3500-Ca	75	200	24.0
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	5.33
11.	Fluoride as F	mg/L	4500F D	1	1.5	0.48
12.	Nitrate as NO_3	mg/L	4500-NO_3 E	45		2.13
13.	Chloride as Cl	mg/L	4500-Cl B	250	1000	29.19
14.	Iron as Fe	mg/L	3500-Fe B	0.3		0.17
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	Absent		Absent
18.	Total Coliform	CFU/100ml	9222 B	10		1

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

End of Report

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Test Report

ANALYSIS REPORT OF FRESH WATER QUALITY

1. Name of the Location : GW4: OMPL (Near ETP Tank).
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 : 10.09.2015
5. Particulars of Sample Collected : Bore well water, Grab Sampling
6. Date of Sample Receipt : 11.09.2015
7. Sample Number : EHSRDC/OMPL/W/15/09/6860
8. Protocol : APHA, 22nd Edition

Sl.No	PARAMETERS	UNIT	Test Methods	Std. IS 10500:2012 (Second Revision)		Code
				DL	PL	GW4
						6860
1.	pH	--	4500H+ B	6.5-8.5		7.03
2.	Colour	Hazen	--	5	15	<1
3.	Odour	--	--	Unobjectionable		Unobjectionable
4.	Taste	--	--	Agreeable		Agreeable
5.	Turbidity	NTU	2130 B	1	5	2.6
6.	Total Dissolved Solids	mg/L	2540 C	500	2000	166
7.	Total Hardness	mg/L	2340 C	200	600	88
8.	Calcium as Ca	mg/L	3500-Ca	75	200	16.0
9.	Magnesium as Mg	mg/L	3500 Mg B	30	100	11.66
10.	Sulphate as SO_4	mg/L	4500-SO_4^{2-}	200	400	3.26
11.	Fluoride as F	mg/L	4500F D	1	1.5	1.4
12.	Nitrate as NO_3	mg/L	4500-NO_3 E	45		BDL
13.	Chloride as Cl	mg/L	4500-Cl B	250	1000	11.0
14.	Iron as Fe	mg/L	3500-Fe B	0.3		0.12
15.	Alkalinity	mg/L	2320 B	200	600	113
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.

End of Report

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ANNEXURE - C

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Website : www.ehsrdc.in

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 : 20.09.2015
4. Particulars of Sample Collected : Ambient Noise Level collected through Sound Level Meter EQ-8852/C-322
5. Date of Sample Receipt : 21.09.2015
6. Sample Number : EHSRDC/OMPL/N/15/09/ 7132-7135
7. Method Adopted : Instrument Method

Code No	Sample Location	Parameters		Std.
		Day Time dB(A)	Night Time dB(A)	75.0 dB(A) Day
7132	OMPL East Side Boundary	65.19	50.32	
7133	OMPL West Side Boundary	61.02	56.15	70 dB(A) Night
7134	OMPL North Side Boundary	63.91	52.39	
7135	OMPL South Side Boundary	64.46	56.95	

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

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See NOTE overleaf

ANNEXURE - V

ENVIRONMENTAL HEALTH AND SAFETY RESEARCH & DEVELOPMENT CENTRE

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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 ReboilerHeater Part -A
3. Sample Collected by : M/s. Environmental Health and Safety Research & Development Centre, Bangalore - 560 010.
4. Date of Collection : 14.09.2015
5. Particulars of Sample Collected : Emissions from stack collected through Stack Sampler VSS1
6. Date of Sample Receipt : 18.09.2015
7. Sample Number : EHSRDC/OMPL/S/09/15/7089
8. Report to be Sent : 30.09.2015
9. Page No : 1 of 9

GENERAL DETAILS

Date of Monitoring	14.09.2015
Ambient Temperature (^{0}C)	27
Stack Temperature (^{0}C)	185
Velocity (m/s)	8.06
Diameter (m)	3.69
Cross Sectional Area in meter square (m^2)	10.689
Quantity of flue gas discharged into atmosphere (Nm^3/h)	594.65

RESULTS

Parameters	Protocol	Unit	Result	Standard
Particulate matter	IS: 11255(P1)	mg/Nm^3	44.65	50
Nitrogen dioxide	IS: 11255 (P7)	mg/ Nm^3	15.97	350
Sulphur dioxide	IS: 11255, (P2)	mg/Nm3	11.52	850
Carbon Monoxide	EPA method (10)	mg/Nm^3	59.24	150

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

End of Report

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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 : 14.09.2015
5. Particulars of Sample Collected : Emissions from stack collected through Stack Sampler VSS1
6. Date of Sample Receipt : 18.09.2015
7. Sample Number : EHSRDC/OMPL/S/09/15/7090
8. Report to be Sent : 30.09.2015
9. Page No : 2 of 9

GENERAL DETAILS

Date of Monitoring	14.09.2015
Ambient Temperature (^{0}C)	26
Stack Temperature (^{0}C)	178
Velocity (m/s)	6.48
Diameter (m)	3.69
Cross Sectional Area in meter square (m^2)	10.689
Quantity of flue gas discharged into atmosphere (Nm^3/h)	165192.4

RESULTS

Parameters	Protocol	Unit	Result	Standard
Particulate matter	IS: 11255(P1)	mg/Nm^3	38.40	50
Nitrogen dioxide	IS: 11255 (P7)	mg/ Nm^3	16.52	350
Sulphur dioxide	IS: 11255, (P2)	mg/Nm3	11.20	850
Carbon Monoxide	EPA method (10)	mg/Nm^3	55.3	150

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

End of Report

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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	:	14.09.2015
5.	Particulars of Sample Collected	:	Emissions from stack collected through Stack Sampler VSS1
6.	Date of Sample Receipt	:	18.09.2015
7.	Sample Number	:	EHSRDC/OMPL/S/09/15/7091
8.	Report to be Sent	:	30.09.2015
9.	Page No	:	3 of 9

GENERAL DETAILS

Date of Monitoring	14.09.2015
Ambient Temperature (^{0}C)	29
Stack Temperature (^{0}C)	225
Velocity (m/s)	8.62
Diameter (m)	2.3
Cross Sectional Area in meter square (m^2)	4.153
Quantity of flue gas discharged into atmosphere (Nm^3/h)	600.713

RESULTS

Parameters	Protocol	Unit	Result	Standard
Particulate matter	IS: 11255(P1)	mg/Nm^3	3.40	5
Nitrogen dioxide	IS: 11255 (P7)	mg/ Nm^3	32.80	250
Sulphur dioxide	IS: 11255, (P2)	mg/Nm3	17.28	50
Carbon Monoxide	EPA method (10)	mg/Nm^3	82.4	100

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

End of Report

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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 : 15.09.2015
5. Particulars of Sample Collected : Emissions from stack collected through Stack Sampler VSS1
6. Date of Sample Receipt : 18.09.2015
7. Sample Number : EHSRDC/OMPL/S/09/15/7095
8. Report to be Sent : 30.09.2015
9. Page No : 4 of 9

GENERAL DETAILS

Date of Monitoring	15.09.2015
Ambient Temperature (^{0}C)	28
Stack Temperature (^{0}C)	220
Velocity (m/s)	8.62
Diameter (m)	1.75
Cross Sectional Area in meter square (m^2)	2.404
Quantity of flue gas discharged into atmosphere (Nm^3/h)	45464.333

RESULTS

Parameters	Protocol	Unit	Result	Standard
Particulate matter	IS: 11255(P1)	mg/Nm^3	4.50	5
Nitrogen dioxide	IS: 11255 (P7)	mg/ Nm^3	27.09	250
Sulphur dioxide	IS: 11255, (P2)	mg/Nm3	9.60	50
Carbon Monoxide	EPA method (10)	mg/Nm^3	78.6	100

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

End of Report

Praveena

Authorized Signatory

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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(Toluene Column Reboiler heater)
3. Sample Collected by : M/s. Environmental Health and Safety Research & Development Centre, Bangalore - 560 010.
4. Date of Collection : 15.09.2015
5. Particulars of Sample Collected : Emissions from stack collected through Stack Sampler VSS1
6. Date of Sample Receipt : 18.09.2015
7. Sample Number : EHSRDC/OMPL/S/09/15/7096
8. Report to be Sent : 30.09.2015
9. Page No : 5 of 9

GENERAL DETAILS

Date of Monitoring	15.09.2015
Ambient Temperature (^{0}C)	28
Stack Temperature (^{0}C)	176
Velocity (m/s)	5.79
Diameter (m)	3.29
Cross Sectional Area in meter square (m^2)	8.497
Quantity of flue gas discharged into atmosphere (Nm^3/h)	118583.33

RESULTS

Parameters	Protocol	Unit	Result	Standard
Particulate matter	IS: 11255(P1)	mg/Nm^3	25.41	50
Nitrogen dioxide	IS: 11255 (P7)	mg/ Nm^3	26.14	350
Sulphur dioxide	IS: 11255, (P2)	mg/Nm3	12.80	850
Carbon Monoxide	EPA method (10)	mg/Nm^3	63.4	150

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

End of Report

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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 : 15.09.2015
5. Particulars of Sample Collected : Emissions from stack collected through Stack Sampler VSS1
6. Date of Sample Receipt : 18.09.2015
7. Sample Number : EHSRDC/OMPL/S/09/15/7097
8. Report to be Sent : 30.09.2015
9. Page No : 6 of 9

GENERAL DETAILS

Date of Monitoring	15.09.2015
Ambient Temperature (^{0}C)	27
Stack Temperature (^{0}C)	232
Velocity (m/s)	6.89
Diameter (m)	1.94
Cross Sectional Area in meter square (m^2)	2.954
Quantity of flue gas discharged into atmosphere (Nm^3/h)	43550.513

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	17.59	250
Sulphur dioxide	IS: 11255, (P2)	mg/Nm3	14.40	50
Carbon Monoxide	EPA method (10)	mg/Nm^3	81.6	100

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

End of Report

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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)-I
3. Sample Collected by : M/s. Environmental Health and Safety Research & Development Centre, Bangalore - 560 010.
4. Date of Collection : 16.09.2015
5. Particulars of Sample Collected : Emissions from stack collected through Stack Sampler VSS1
6. Date of Sample Receipt : 18.09.2015
7. Sample Number : EHSRDC/OMPL/S/09/15/7098
8. Report to be Sent : 30.09.2015
9. Page No : 7 of 9

GENERAL DETAILS

Date of Monitoring	16.09.2015
Ambient Temperature (^{0}C)	32
Stack Temperature (^{0}C)	325
Velocity (m/s)	11.79
Diameter (m)	2.80
Cross Sectional Area in meter square (m^2)	6.154
Quantity of flue gas discharged into atmosphere (Nm^3/h)	133278.91

RESULTS

Parameters	Protocol	Unit	Result	Standard
Particulate matter	IS: 11255(P1)	mg/Nm^3	38.30	50
Nitrogen dioxide	IS: 11255 (P7)	mg/ Nm^3	27.45	350
Sulphur dioxide	IS: 11255, (P2)	mg/Nm3	14.40	850
Carbon Monoxide	EPA method (10)	mg/Nm^3	86.2	150

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

End of Report

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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 : 16.09.2015
5. Particulars of Sample Collected : Emissions from stack collected through Stack Sampler VSS1
6. Date of Sample Receipt : 18.09.2015
7. Sample Number : EHSRDC/OMPL/S/09/15/7099
8. Report to be Sent : 30.09.2015
9. Page No : 8 of 9

GENERAL DETAILS

Date of Monitoring	16.09.2015
Ambient Temperature (^{0}C)	31
Stack Temperature (^{0}C)	295
Velocity (m/s)	9.76
Diameter (m)	2.74
Cross Sectional Area in meter square (m^2)	5.893
Quantity of flue gas discharged into atmosphere (Nm^3/h)	110718.9

RESULTS

Parameters	Protocol	Unit	Result	Standard
Particulate matter	IS: 11255(P1)	mg/Nm^3	48.20	50
Nitrogen dioxide	IS: 11255 (P7)	mg/ Nm^3	24.81	350
Sulphur dioxide	IS: 11255, (P2)	mg/Nm3	13.44	850
Carbon Monoxide	EPA method (10)	mg/Nm^3	83.6	150

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

End of Report

Praveena
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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 unit Charge Heater
3. Sample Collected by : M/s. Environmental Health and Safety Research & Development Centre, Bangalore - 560 010.
4. Date of Collection : 16.09.2015
5. Particulars of Sample Collected : Emissions from stack collected through Stack Sampler VSS1
6. Date of Sample Receipt : 18.09.2015
7. Sample Number : EHSRDC/OMPL/S/09/15/7100
8. Report to be Sent : 30.09.2015
9. Page No : 9 of 9

GENERAL DETAILS

Date of Monitoring	16.09.2015
Ambient Temperature (^{0}C)	30
Stack Temperature (^{0}C)	335
Velocity (m/s)	10.81
Diameter (m)	4.10
Cross Sectional Area in meter square (m^2)	13.196
Quantity of flue gas discharged into atmosphere (Nm^3/h)	255922.6

RESULTS

Parameters	Protocol	Unit	Result	Standard
Particulate matter	IS: 11255(P1)	mg/Nm^3	3.78	5
Nitrogen dioxide	IS: 11255 (P7)	mg/ Nm^3	31.37	250
Sulphur dioxide	IS: 11255, (P2)	mg/Nm3	15.36	50
Carbon Monoxide	EPA method (10)	mg/Nm^3	88.5	100

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

End of Report

Praveena
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ANNEXURE - D

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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 Special 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	:	10.09.2015
5.	Particulars of Sample Collected	:	ETP Guard Pond Discharge Treated Effluent, Grab Sampling
6.	Date of Sample Receipt	:	11.09.2015
7.	Sample Number	:	EHSRDC/OMPL/ W/15/09/6861
8.	Analysis started on	:	11.09.2015
9.	Analysis Completed on	:	16.09.2015
10.	Page No.	:	01 of 2
11.	Report to be Sent	:	17.09.2015
12.	Protocol	:	APHA,22nd Edition/IS Method

Sl.No	Parameters	Test Methods	Unit	Result	Tolerance limit
1.	pH	IS 3025(Part-11) :1983	-	8.48	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^{0}C)	5210 B	mg/L	10.0	15
7.	C.O.D	5220 B	mg/L	36	125
8.	Total Suspended Solids	2540 D	mg/L	18	20
9.	Phosphate as PO_4	4500- P D	mg/L	1.11	3
10.	Total Kjeldahl Nitrogen	4500- Norg B	mg/L	31.92	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	2.15	5

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Tel : 080 23012100/ 121/122 Fax : 080 23012111
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Website : www.ehsrdc.in

Test Report

Sample Number: EHSRDC/OMPL/ W/15/09/6861

14.	Ammonical Nitrogen	4500- NH3,B,C	mg/L	14.18	15
15.	Hexavalent Chromium	3500- Cr B	mg/L	BDL	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	0.40	1.5
18.	Nitrate as NO_3	IS 3025(Part 34) :1988	mg/L	6.87	20
19.	Iron as Fe	IS 3025(Part 53):2003	mg/L	0.20	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	BDL	0.2
25.	Zinc as Zn	IS 3025(Part 49):1994	mg/L	0.0139	5
26.	Copper as Cu	IS 3025(Part-42):1992	mg/L	0.005	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	0.0045	2
31.	Benzene	APHA 6200 B	mg/L	0.005	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. 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

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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Form-1 (Rule 4)

Returns Regarding Water Consumed during the Month of Sept., 2015

Name and address of the Consumer	Purpose for which water consumed	Reading at the begining 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 Leters	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	66489	66489			
	Boiler Feed Water	0	73611	73611			
	Fire Water	0	14228	14228			
	Domestic purpose						
	Drinking Water & Sanitation			3456			Flow through Running hours of pumps recorded
	Processing whereby water gets polluted and the pollutants are easily bio-degradable						
	Service Water			4737.6			Subtracting total flow (by running hours of pumps) from BFW & CT consumption
Total Consumption				162521.6			

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 - I

ANNEXURE- G

ONGC Mangalore Petrochemicals Limited

Production Details for September – 2015

Net Naptha Processed – 60865 MT

Sl. No.	Name of the Product	Quantity, MT
1	Paraxylene (Product)	33696
2	Benzene (Co product)	9163

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

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Annexure - A

No.13/2, 1st Main Road, Near Fire Station,
Industrial Town, Rajajinagar, Bangalore - 560 010.
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E-mail : info@ehsrdc.in / ehsrdc2010@gmail.com
Website : www.ehsrdc.in

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 Special 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 & O_3 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} ($\mu g/m^3$)	100	63	61	68	64	59	62	63	70
$PM_{2.5}$ ($\mu g/m^3$)	60	17	18	19	22	18	18	17	21
SO_2 ($\mu g/m^3$)	80	3.59	3.66	2.63	3.88	3.18	2.79	3.81	3.21
NO_2 ($\mu g/m^3$)	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 ($\mu g/m^3$)	180	0.87	0.79	0.82	0.95	0.83	0.79	0.81	0.88

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Website : www.ehsrdc.in

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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								
NH_3 ($\mu g/m^3$)	400	1.73	2.11	1.73	2.15	2.11	1.67	2.13	1.45
Lead ($\mu g/m^3$)	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 ($\mu g/m^3$)	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

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Website : www.ehsrdc.in

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 & O_3 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								
PM_{10} ($\mu g/m^3$)	100	60	66	57	61	63	59	66	67
$PM_{2.5}$ ($\mu g/m^3$)	60	16	20	15	17	19	18	19	18
SO_2 ($\mu g/m^3$)	80	3.75	2.89	2.73	3.11	2.79	3.18	2.19	3.22
NO_2 ($\mu g/m^3$)	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 ($\mu g/m^3$)	180	0.78	0.83	0.75	0.92	0.84	0.83	0.83	0.87

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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 ($\mu g/m^3$)	400	1.89	1.83	1.48	1.53	1.73	2.29	1.91	2.31
Lead ($\mu g/m^3$)	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 ($\mu g/m^3$)	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

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Website : www.ehsrdc.in

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 Special 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 & O_3 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} ($\mu g/m^3$)	100	70	58	60	58	59	54	62	63
$PM_{2.5}$ ($\mu g/m^3$)	60	20	15	16	15	17	16	19	24
SO_2 ($\mu g/m^3$)	80	2.89	3.19	3.81	2.19	2.62	3.84	2.61	3.97
NO_2 ($\mu g/m^3$)	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 ($\mu g/m^3$)	180	0.83	0.80	0.87	0.78	0.80	0.90	0.89	0.95

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Website : www.ehsrdc.in

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 ($\mu g/m^3$)	400	1.98	2.39	2.83	1.19	2.13	2.25	1.57	2.13
Lead ($\mu g/m^3$)	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 ($\mu g/m^3$)	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

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Website : www.ehsrdc.in

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 & O_3 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} ($\mu g/m^3$)	100	59	64	63	66	68	70	61	66
PM_{25} ($\mu g/m^3$)	60	16	20	21	24	19	24	22	23
SO_2 ($\mu g/m^3$)	80	3.83	3.43	3.27	3.19	2.63	3.59	3.51	3.85
NO_2 ($\mu g/m^3$)	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 ($\mu g/m^3$)	180	0.87	0.83	0.87	0.86	0.87	0.85	0.85	0.82

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Website : www.ehsrdc.in

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 ($\mu g/m^3$)	400	2.65	1.63	2.19	2.69	2.43	2.09	1.93	1.25
Lead ($\mu g/m^3$)	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 ($\mu g/m^3$)	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

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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 Special 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 & O_3 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} ($\mu g/m^3$)	100	66	70	72	70	64	63	64	64
PM_{25} ($\mu g/m^3$)	60	18	22	21	22	21	16	18	17
SO_2 ($\mu g/m^3$)	80	3.11	3.71	3.65	3.89	3.13	2.79	3.45	3.09
NO_2 ($\mu g/m^3$)	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 ($\mu g/m^3$)	180	0.66	0.83	0.85	0.83	0.73	0.84	0.84	0.84

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See NOTE overleaf

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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 ($\mu g/m^3$)	400	2.62	2.63	2.29	2.19	2.25	1.78	1.19	1.13
Lead ($\mu g/m^3$)	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 ($\mu g/m^3$)	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

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Annexure - B

EHS R&D
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Website : www.ehsrdc.in

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.

End of Report

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Website : www.ehsrdc.in

Test Report

ANALYSIS REPORT OF FRESH WATER QUALITY

1. Name of the Location : GW2: Gagtel 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.

End of Report

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Website : www.ehsrdc.in

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.

End of Report

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Website : www.ehsrdc.in

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

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Website : www.ehsrdc.in

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**

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Website : www.ehsrdc.in

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

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Website : www.ehsrdc.in

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

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Website : www.ehsrdc.in

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

Praveena
Authorized Signatory

EHSRDC
ENVIRONMENTAL HEALTH AND SAFETY RESEARCH & DEVELOPMENT CENTRE

Recognised by Ministry of Environment & Forests (MoEF). Govt. of India, New Delhi, Dated : 28-07-2011 to 27-07-2016
ISO 9001:2008,
ISO 14001 : 2004
BS OHSAS 18001:2007

No.13/2, 1st Main Road, Near Fire Station,
Industrial Town, Rajajinagar, Bangalore - 560 010.
Tel : 080 23012100/ 121/122 Fax : 080 23012111
E-mail : info@ehsrdc.in / ehsrdc2010@gmail.com
Website : www.ehsrdc.in

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.

End of Report

Authorized Signatory

See NOTE overleaf

Annexure-C

EHS R&D
ENVIRONMENTAL HEALTH AND SAFETY RESEARCH & DEVELOPMENT CENTRE

Recognised by Ministry of Environment & Forests (MoEF), Govt. of India, New Delhi, Dated : 28-07-2011 to 27-07-2016

ISO 9001:2008,

ISO 14001 : 2004

BS OHSAS 18001:2007

No.13/2, 1st Main Road, Near Fire Station,
Industrial Town, Rajajinagar, Bangalore - 560 010.
Tel : 080 23012100/ 121/122 Fax : 080 23012111
E-mail : info@ehsrdc.in / ehsrdc2010@gmail.com
Website : www.ehsrdc.in

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)	75.0 dB(A) Day / 70 dB(A) Night
7990	OMPL East Side Boundary	67.43	55.60	
7991	OMPL West Side Boundary	67.31	57.32	
7992	OMPL South Side Boundary	64.56	54.24	
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

See NOTE overleaf

Annexure – E

ENVIRONMENTAL HEALTH AND SAFETY RESEARCH & DEVELOPMENT CENTRE

Recognised by Ministry of Environment & Forests (MoEF). Govt. of India, New Delhi, Dated : 28-07-2011 to 27-07-2016

ISO 9001:2008,

ISO 14001 : 2004

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No.13/2, 1st Main Road, Near Fire Station,
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E-mail : info@ehsrdc.in / ehsrdc2010@gmail.com
Website : www.ehsrdc.in

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 Special 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	^{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	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

See NOTE overleaf

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Website : www.ehsrdc.in

Test Report

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

14.	Ammonical Nitrogen	4500- NH3,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, 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.

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 Oct., 2015

Name and address of the Consumer	Purpose for which water consumed	Reading at the begining 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 Leters	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	75826	75826			
	Boiler Feed Water	0	70018	70018			
	Fire Water	0	24228	24228			
	Domestic purpose						
	Drinking Water & Sanitation			5496			Flow through Running hours of pumps recorded
	Processing whereby water gets polluted and the pollutants are easily bio-degradable						
	Service Water			9356.6			Subtracting total flow (by running hours of pumps) from BFW & CT consumption
Total Consumption				184924.6			

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 - 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