DEEPAK FERTILISERS AND PETROCHEMICALS CORPORATION LIMITED

DFPCL-K1/EHS/Env/2022-23/02 Date: 30-MAY-22

Additional Principal Chief Conservator of Forest (C),
Ministry of Environment, Forest & Climate Change,
Regional Office (WCZ),Ground Floor, East Wing,
New Secretariate Building, Civil Lines
Nagpur – 440 001, Maharashtra.

Reference:
1. EC granted for Iso Propyl Alcohol vide file no. (J-11011/218/2004-IA II(I) dt 24.02.2006).

Sub: Half yearly Environmental Clerance Compliance report.

Dear Sir,

Please find enclosed the half yeraly EC compliance report of **Iso Propyl Alcohol plant** for the period of **October-2021 to March -2022**.

We also would like to communicate that our consloidated consent to operate for Deepak Fertilisers and Petrochemicals Corporations Limited, plot No. K-1 to K-8 now got demerged into 3 separte consent to operates based on the NCLT order into –

- Deepak Fertilisers and Petrochemicals Corporations Limited, plot No. K-1 to K-6.
- Smartchem Technologies Limited, plot No. K-1, K-1 part-1, K-1 part-2.
- Smartchem Technologies Limited, plot No. K-7 to K-8

This is for your information and records please.

Thanking you,

Yours faithfully,

For, DEEPAK FERTILISERS AND PETROCHEMICALS CORP. LTD.,

DEEPAK PANDE
Head (EHS)

CC :

1. SRO, MPCB, Raigad Bhavan, 7th Floor, Sector-11, CBD-Belapur, Navi Mumbai – 400614.
2. Ministry of Environment, Forest, 1st Floor, New Administrative Building, Mantralaya, Mumbai – 400032.
3. CPCB Parivesh Bhawan, Opp. VMC Ward Office No. 10, Shubhanpura, Vadodara, Gujarat 390023.

DATA SHEET			
1		Project type: River - valley/ Mining / Thermal/ Industry / Nuclear/ Other (specify)	Industry
2		Name of the project	Iso Propyl Alcohol (IPA 70000 MTA) Project at MIDC, Taloja, Maharashtra by Deepak Fertilisers & Petrochemicals Corporation Limited
3		Clearance letter (s) /OM No. and Date	EC granted for Iso Propyl Alcohol vide file no. (J-11011/218/2004-IA II(I) dt 24.02.2006)
4		Location	
	a.	District (S)	Raigad
	b.	State (S)	Maharashtra
	c.	Latitude/longitude	19°04'11.3"N/73°08'04.1"E
5		Address for correspondence	
	a.	Address of Concerned Project Chief Engineer (with pin code & Telephone/ telex/ fax numbers	Mr. Deepak Pande (Sr.GM-EHS), M/s Deepak Fertilisers & Petrochemicals Corporation Ltd. Plot No. K-1, MIDC Industrial area, Taloja, District Raigad – 410208, Maharashtra. Phone: - 022-50684221, 9920942161
	b.	Address of Executive Project: Engineer/Manager (with pincode/ Fax numbers)	Same as above
6		Salient features	
	a.	of the project	Annexure-A
	b.	of the environmental management plans	Annexure-B
7		Break up of the project area	
	a.	submergence area forest & non forest	NA, (MIDC Land)
	b.	Others	NA
8		Break up of the project affected Population with enumeration of Those losing houses/dwelling units Only agricultural land only, both Dwelling units & agricultural Land & landless labourers/artisan	NA, (MIDC Land)
	a.	SC, ST/Adivasis	NA, (MIDC Land)
	b.	Others (Please indicate whether these Figures are based on any scientific And systematic survey carried out Or only provisional figures, it a Survey is carried out give details And years of survey)	NA
9		Financial details.	
	a.	Project cost as originally planned and subsequent revised estimates and the year of price reference	153.7 Crores
	b	Allocation made for environmental management plans with item wise and year wise Break-up.	**Yes. Year 2021-22.** 1. Rs. 39 lakhs for Plantation and Maintenance of Tree plantation 2. Rs. 60 lakhs for Green Belt development 3. Rs. 20 lakhs for plantation nearby village 4. .Rs. 62 lakhs for IIT study for NPK EC study 5. Rs. 16 lakhs for ETP1 improvements 6. Rs. 8 lakhs for AMC for CEMS 7. Rs. 0.5 lakhs for AMC for AAQMS 8. Rs. 0.7 lakhs AMC for PM Analyzer 9. Rs. 01 lakhs for OCEMS Glens portal development
	c.	Benefit cost ratio/Internal rate of Return and the year of assessment	-
	d.	Whether (c) includes the Cost of environmental management as shown in the above.	Yes
	e.	Actual expenditure incurred on the project so far.	No expenditure during current financial year
	f.	Actual expenditure incurred on the environmental management plans so far	For details see 9 b)
10		Forest land requirement	
	a.	The status of approval for diversion of forest land for non-forestry use	NA, (MIDC Land)
	b	The status of compensatory afforestation program in the light of actual field experience so far	NA, (MIDC Land)
11		The status of clear felling in Non-forest areas (such as submergence area of reservoir, approach roads), it any with quantitative information	NA, (MIDC Land)
12		Status of construction	
	a.	Date of commencement (Actual and/or planned)	Year 2005
	b.	Date of completion (Actual and/of planned)	Year 2006
13		Reasons for the delay if the Project is yet to start	NA
14		Dates of site visits	
	a.	The dates on which the project was monitored by the Regional Office on previous Occasions, if any	NA
	b.	Date of site visit for this monitoring report	NA
15		Details of correspondence with Project authorities for obtaining Action plans/information on Status of compliance to safeguards Other than the routine letters for Logistic support for site visits)	NA

Executive Summary

1.0 Introduction

The Deepak Group of industries one of the major groups in Maharastra state is proposing to set up India's first plant for manufacturing Isopropyl Alcohol (IPA).in technological collaboration with US-based Equistar-Lyondell The facility will have a capacity to produce 70,000 tonnes of IPA at its Taloja unit in Raigad District of Maharashtra with a capital outlay of Rs 153.7 crores, meeting India's major requirement of the chemical. IPA is a key ingredient in sectors such as pharma, agrochemicals, organic chemicals, imaging (printing &inks), health care & paint industry.

DFPCL's business can be broadly categorized into the following divisions

- Industrial Chemicals
- Ammonium Nitrate
- Agri-Inputs – Marketing
- Crop Science Division

1.1 Need For The Project

- The IPA market in the country has immense potential and the consumption was estimated to be 62,000 MTPA in year 2002 – 2003 and the estimated consumption in the year 2005 would be 72,500 MTPA.

- IPA is extensively used by pharmaceutical companies, agrochemicals industry and also in manufacturing of inks and other components required for printing.

- The company will target the huge IPA market in India, which is at present 100 per cent dependent on imports as there are no domestic manufacturers.

- IPA consumption in the country is growing by around seven percent annually.

1.2 Need For EIA Studies

In all manufacturing industries, the plant activities must co-exist satisfactorily with its surrounding environment so as to reduce the environmental impact caused due to these activities. In order to assess the likely impacts arising out of the proposed

project on the surrounding environment and evaluating means of alleviating the likely negative impacts, if any, from the proposed project, Rapid Environmental Impact Assessment (REIA) studies carried out for various environmental components which are likely to be affected.

The REIA Studies for the proposed IPA manufacturing project deals with detailed studies for various environmental components viz. Air, noise, water, land, biological and socio-economic environment.

1.3 The Surroundings

The industrial area is well connected to the state and national road network The state highway SH-I connecting Pune and Thane passes from a distance of 4.0 km from the SW of the site. There is a district approach road connecting the industrial area to the state highway.

The nearest railway station Navada (on Panvel – Diya line) is about 3.5 km west of the site.

Salient Features Of The Proposed Isopropyl Alcohol Plant at Taloja

State	Maharashtra
Village, District	Taloja A. V., Raigad
Nature of the Area	Notified Industrial Area
Mean Maximum Temperature	34° C (Summer)
Mean Minimum Temperature	21.8° C (Winter)
Relative Humidity	64.5 %
Annual Rainfall	1800 mm
Nearest Highway	SH-1
Nearest Port	Mumbai Port
Nearest Railway Station	Navada
Nearest Village	Devichapada, Tondre
Nearest City	Panvel
Nearest Air port	Sahara Air Port, Mumbai
Nearest River	Kasade River
Nearest Forest	No Forest Area
Historical & Sensitive Places	Nil

2.0 Process Description

The process route consists of the following steps to produce Iso Propyl Alcohol (IPA):

- C3 Splitter Section
- Reaction And Flash Section
- Distillation Section
- Molecular Sieve Section

Iso Propyl Alcohol (IPA) is produced by direct hydration of propylene across a catalyst bed.

$$CH_3CH=CH_2 + H_2O \xrightarrow{\text{Catalyst}} (CH_3)_2CHOH$$

2.1 Resources required

The major raw material required is propylene (refined grade), for which the plant authorities have a tie up with Bharat Petroleum Corporation Ltd. (BPCL) for long term exclusive supply for the proposed project. The other raw materials required is phosphoric acid, silica gel, etc are procured from the local market/suppliers.

The total water required for the proposed IPA plant is around 2785.2 m3/day. The water required is met from MIDC water supply. The total power required for the proposed project is around 3626 kW, this met from captive power plant 2 x 4.5 MW of the parent organisation which is having a spare capacity of 4.5 MW. The major utilities required for the proposed project are boiler, Cooling tower, DM plant, etc.

The parent organization is having land of 30.3492 hectares in the MIDC industrial area of Taloja part of the land in the existing unit will be used for proposed plant. As per the MIDC norms the ratio of total plinth area to the net plot area should not be more than 0.35 After establishment of the proposed project the ratio of the total plinth area to the net plot area would be 0.293, which is well within the MIDC norms.

3.0 Baseline

Baseline environmental status in and around proposed project depicts the existing environmental conditions of air, noise, water, soil, biological and socio-economic environment.

The 24 hourly average windrose for the entire study period reveals that winds were blowing from all directions. The most dominant direction observed was NE followed by NNE, ENE and N. The maximum, minimum and mean temperature observed to be 41° C, 19.1° C and 29.5° C respectively. The mean relative humidity observed during the study period is 64.5%.

3.1 Ambient Air Quality

A total of 9 ambient air quality monitoring stations were selected. Maximum, Minimum, Average and Percentile values have been computed from the raw data collected.

- The 98th percentile of SPM levels are in the range of 58.2 TO 149.6 µg/m^3
- The 98th percentile of RPM levels are in the range of 20.2 to 50.1 µg/m^3
- The 98th percentile of SO_2 levels were in the range of 7.5 to 11.3 µg/m^3
- The 98th percentile of NO_X levels were in the range of 12.8 to 19.3 µg/m^3

The 24 hourly average values of SPM, RPM, SO_2 & NO_x were compared with the national ambient air quality standards and it was found that all the sampling stations recorded values lower than the applicable limit for residential areas.

3.2 Noise Environment

Assessment of equivalent day and night noise levels at 11 locations in and around the plant site reveal that noise levels are ranging from 37.5 to 57.2dB(A), which can be taken as the existing baseline status. The day equivalent values calculated considering the noise levels recorded from 6 AM to 9PM. The values were found to be ranging between 49.23 dB (A) at Valap to 53.71 dB (A) at Plant site 1.

Similarly night equivalent noise levels were calculated using the noise levels recorded from 10 PM to 5 AM. These values are critical since they affect the sleep in the residential and sensitive areas. The night equivalent values were found to be ranging between 41.76 dB (A) at Ghot to 44.27dB (A) at Khanav. The noise equivalents observed were within the standards as per CPCB for Residential areas and commercial areas respectively.

3.3 Water Quality

A total of nine water samples (two surface water and seven ground water samples) have been collected from the study area.

The analytical results of the samples collected from the study area were compared with the drinking water standards IS 10500 to check for the portability.

Ground water

From the analytical results of ground water we can see that the pH of the water is ranging from 7.06 to 8.5 at valvali. The pH limit fixed for drinking water is 6.5 to 8.5 beyond this range the water will affect the mucus membrane and water supply system, in the study area the pH in the samples collected were well within the limits.

The Dissolved solids in the ground water samples are ranging from 210 at MIDC area to 560 mg/l at Pali. Except for the water sample at Ghot, Navade and Pali all samples were within the desirable limit of 500 mg/l where as other samples are within the permissible limit of 2000 mg/l. The chloride value is ranging from 14 mg/l at MIDC area to 95 mg/l at Navade, however the desirable limit is 250 mg/l and the permissible limit is 1000 mg/l.

Fluoride is the other important parameter, which has both higher and lower limits. The optimum content of fluoride in the drinking water is 0.6 to 1.5 mg/l. If the fluoride content is less than 0.6 mg/l it causes dental carries, above 1.5 mg/l it causes staining of tooth enamel, higher concentration in range of 3 – 10 mg/l causes fluorosis. In the study area the fluoride value were in the range of 0.4 mg/l to 1.1 mg/l.

Surface water

Two samples were collected from Gadi and Kasardi river. The samples showed pH of 7.4 and 7.7 respectively. Total dissolved solids were found to be 208 mg/l and 510 mg/l while chlorides were found to be 35 mg/l and 92 mg/l respectively. The surface water samples did not show any high fluoride concentrations.

3.4 Soil Quality

The analytical results of the 7 soil samples collected during the study period are summarized below.

The pH of the soil is an important property; plants cannot grow in low and high pH value soils. Most of the essential nutrients like N, P, K, Cl and SO_4 are available for plant at the neutral pH except for Fe, Mn and Al which are available at low pH range. The pH values in the study area are varying from 6.81 to 7.72 showing neutral only.

The other important parameters for characterization of soil for irrigation are N,P,K. the nitrogen value is varying from 5 to 122 meq/100gm, Phosphorus value is varying from 2.6 to 28 meq/100gm and Potassium value is varying between 11 to 136 mg/kg. All three parameters are showing that the soils require addition of N, P, K as they are falling low grade soils.

4.0 Identification Of Impacts

Any developmental activity in its wake will bring about some impacts associated with its origin, which can be broadly classified as reversible, irreversible, long and short-term impacts.

4.1 Construction Related Impacts

Since the project is proposed to be established adjacent to the existing parent industry, no major construction activity like leveling, movement of earth etc are envisaged. The most likely changes, if any, on the environment during the construction phase would be controlled by sprinkling water on road surfaces and covering the trucks with plastic sheets while moving in and out of the plant.

Generation of noise is due to operation of heavy equipment's and increased frequency of vehicular traffic in the area. However, these impacts are short term, intermittent and temporary in nature.

4.2 Operation Related Impacts

Air Environment

Prediction of impacts from the proposed IPA plant on the ambient air quality was carried out using air quality simulation models. The main sources of pollution envisaged from the plant are Fugitive emissions and Point source emissions (Boiler, DG set).

The fugitive emissions will be resulted from various operations and are expected due to evaporation losses. Even though the are within the standards for further reducing the evaporation losses by proper maintenance of all pipelines, reactors etc through regular timely maintenance and as well as by adopting good production practices.

To meet the steam requirements of the process, a boiler with a capacity of 30 TPH is proposed using a mixture of Furnace oil and Purge gas. The total fuel requirement per day would be to the tune of 52TPD of Furnace oil and 12 TPD of

purge gas, which is generated in the process of manufacture of IPA. Modeling has been carried out for 30TPH boiler emissions as a worst case to study the predicted increase in ground level concentrations due to the plant activities.

Stack and Emission Details

Stack No	Attached to	Height (m)	Dia. (m)	Velocity (m/s)	Volume NM^3/hr	Temp. ° K	SPM g/s	SO2 g/s
1	Boiler 30TPH	63.5	1.4	15	51550	443	0.60	42

Predictions were carried out as per CPCB guidelines "Assessment of Impact to Air Environment: Guidelines for conducting air quality modeling" for pre monsoon season. The future predicted concentrations estimated by super imposing the predicted values over the base line values and presented in following table.

Predicted baseline values of SPM and SO_2 in SW direction

Pollutant	Baseline Max. Value - ($\mu g/m^3$)	Predicted Max. contribution to GLC's -($\mu g/m^3$)	Predicted future AAQ concentration - ($\mu g/m^3$)
Particulate Matter	156	0.281	156.28
Sulphur dioxide (SO_2)	12	19.70	31.70

(24 hrly average)

Water Environment

The entire wastewater generated 667 m^3/day is treated in the existing effluent treatment plant before sending to Common CETP (used as dilution water) for further disposal. However, to meet the new demands, slight modifications are proposed in the existing ETP. The effluents after treatment will be routed to Taloja Common effluent Treatment plant Co-op Society ltd for final disposal. Hence impact on ground water quality is not envisaged.

Land Environment

Solid waste generated from the proposed plant is from process (spent catalyst) expected to be in a small quantity 60 Tons per two years. And Calcium phosphate of around 1 TPM from ETP.

As the entire solid waste generated is sold authorized agents no damage is envisaged on the land environment.

CHAPTER-V
ENVIRONMENTAL MANAGEMENT PLAN

5.0 Objective

The purpose of the Environmental Management Plan (EMP) is to minimize the potential environmental impacts from the project and to mitigate the consequences. EMP reflects the commitment of the project management to protect the environment as well as the neighbouring populations. The potential environmental impact envisaged from the project is studied on the following environmental components:

- Air pollution from the stacks
- Fugitive emissions
- Water pollution due to the wastewater generation
- Soil pollution due to solid waste disposal

The management action plan aims at controlling pollution at the source level to the possible extent with the available and affordable technology followed by treatment measures before they are discharged. The following additional mitigation measures are recommended in order to synchronize the economic development of the study area with the environmental protection of the region.

5.1 Environmental Management Plan

Preparation of Environmental Management Plan is required for formulation and monitoring of environmental protection measures during construction and operation of proposed plant. The plan should indicate the details as to how various measures proposed to be taken for mitigation of adverse impacts if any from the proposed project.

The following sections describe the Environmental Management Plan for proposed IPA Plant during construction and post construction phases.

5.2 Construction Phase

The construction activity includes the handling of the construction material and equipment, vehicular movement etc.

The major culprit during any construction activity is the fugitive emission that is released from the construction activity and the vehicular movement during the

construction. Dust control is a major issue during the construction phase along with the waste water generated from the construction and the domestic sewage generated by the construction camp, oil and material spillages during the handling and the transportation of the construction material and the solid waste generated during the construction.

Dust suppression is achieved by spraying water on the unpaved roads and covering the trucks transporting the construction material with tarpaulin or other covers and taking steps to minimize spillages during the transport and the handling of the material.

Noise effect on the nearby habitation during construction activities will be negligible as the nearest habitat is more than 1 km from the plant. However construction labour would be provided with noise protection devises like ear muffs, and occupational safety ware. It is recommended that all noise generating equipment to be stopped during night timings.

The waste oil generated by construction equipment would be disposed through authorized recyclers and unauthorized dumping of waste oil is prohibited.

Adequate security arrangement should be made to ensure that the local inhabitants and the stray cattle are not exposed to the potential hazards of construction activities.

5.3 Post Construction Phase

Project authorities are planning to implement several measures to curtail pollution to the maximum extent. Environment management at design stage includes all the steps undertaken at the design stage by the project proponents to meet the statutory requirements and towards minimizing environmental impacts.

The design basis for all process units will lay special emphasis on measures to minimizes effluent generation and emission control at source. The specific control measures related to gaseous emissions, liquid effluent discharges, noise generation, solid waste disposal etc. are described below:

5.3.1 Air Environment

The suspended particulate matter, Sulphur dioxide and Oxides of Nitrogen concentrations in the ambient air will increase slightly due to the emissions from the proposed boiler. The desired stack height of 63.5 m will be provided as per the

guidelines issued by the CPCB for the proposed boiler for the effective dispersion of the pollutants.

The sources of air emission from the plant are a) Point source (Boiler) emissions b) Non Point source (Fugitive) emissions

a) **Point Source (Boiler) Emissions**

One of the main sources of air pollutants from proposed project is the use of fuels for energy requirement. For steam requirements of the plant, one boiler of 30 TPH is being proposed.

Particulate matter, SO_2 and NOx are the major emissions from the plant. However as the fuel proposed to be used for boiler being furnace oil and purge gas Particulate matter envisaged is negligible, and for proper dispersion of SO_2 and NOx into surrounding environs; stack height has been maintained as per the existing norms. The details of the stack height calculations are given in **Table 5.1**.

A stack height of 63.5 m is provided as per MoEF guidelines. And for 75 KVA DG set a stack height of 2 meters above the building is proposed.

In addition to above boiler operation is controlled by programmable Logic Control – Supervisor Control and Data Acquisition System.(PLC-SCADA) based system.

Table 5.1

Details of Stack height calculation for Boiler and DG

Boiler	Specifications
Capacity	30TPH
Fuel Consumption	52 TPD furnace oil and 12 TPD Purge gas
Sulphur %	0.35% furnace oil
Sulphur dioxide content	52000*0.035^2/24 = 151.7 kg/hour
Stack height as per MoEF	14 $(SO_2$ kg/hr$)^{0.3}$
Stack Height H meters	$14(151.7)^{0.3}$ = 63.15 m
proposed stack height	63.5 m
Particulate matter control system	Cyclone and programmable Logic Control – Supervisor Control and Data Acquisition System,(PLC-SCADA) based system.
DG set	
Capacity	75 KVA
Stack height as per MOEF	H=h+0.2 √KVA
Stack height H meters	Height of building +0.2√75 KVA = 1.73m or say 2 meters

b) Non Point source (Fugitive) emissions

To control the fugitive emissions during various operations in the proposed plant, management is proposing dedicated pipe lines from one section to another section, and all reactor and storage tanks are provided with vent condensers. The details of the control measures proposed are given in **Table 5.2**.

Table 5.2

Control measure proposed for controlling Fugitive emissions

S. No	Description	Control Measure
1	To Control losses during transferring from section to section	Dedicated pipelines, solvent storage tanks provided with vent condensers
2	To Control losses during manufacturing process	All reactor are provided with vent Condensers

5.3.2 Air Quality Monitoring

a) Stack Gas Monitoring

Provisions will be made in the stack for carrying out stack gas analysis as per the laid out guidelines. The monitoring would be carried out regularly as per the conditions in the consent to operate.

b) Ambient Air Quality Monitoring

The concentration of SPM, SO2 and NOx in the ambient air outside the project boundaries and in the adjoining villages should be monitored as per the direction of the state pollution control board.

5.4 Water Environment

The water requirement at maximum production would be 2785.2 m^3/day, for all its purposes including process, floor and reactor washings, boiler, cooling tower, canteen/ domestic requirements. The total wastewater generated from the proposed project is 667 m^3/day. The details of waste water generation are given in **Table 5.3**

Table 5.3
Wastewater Generation Details– m^3/day

S.No	Description	Effluent	Remarks
1	Domestic	1.2	STP
2	Cooling tower	249.6	ETP
3	DM Plant	57.6	ETP
4	Process , reactor wash, floor washes, etc	317.328	ETP
		14.52	ETP
		2.664	STP
5	Boiler	24	ETP
6	Export	0	-
	Total	666.912	

5.4.1 Effluent Treatment Plant Details

1. Details of Proposed IPA plant

The process effluents originating from proposed IPA plant consist of Phosphates. The Phosphates containing effluents treated with milk of lime in Reaction Tank I. The lime mixed effluent is sent to Clariflocculator where sludge, as calcium

phosphate, is separated. The separated sludge is centrifuged and solids are separated. The mother liquid is sent to parent industry ETP for further treatment and the treated wastewater is sent to CETP for final disposal.

The effluent from utilities (boiler, DM plant and Cooling tower) are added to Reaction tank III of the parent industry treatment plant (effluent after ammonia stripping).

The domestic sewage along with part of the process water containing COD is sent to parent industry sewage treatment plant for treatment.

2. Details of Existing Effluent Treatment Plant of Parent Organization

The effluents generating from the various plants essentially consists of Ammonical – nitrogen, Nitrate – Nitrogen, phosphates. The treatment facilities are described below.

Designed capacity	3600 m3/day.
Present Load	2742.3 m3/day

a) Phosphate removal

The process effluent stream coming from Ammonium Nitrate Phosphate (ANP) plant and tank farm is first equalized in the Collection/holding tank (CT I) and pumped to Reaction tank – I to raise the pH up to 9.0 by adding lime. The overflow through gravity will go to clarifloculator for separation of calcium phosphate sludge. The sludge is sent to centrifuge and the centrate is sent back to CT 1 and the sludge cake is disposed off. The treated effluent is sent to Reaction tank IIA.

b) Disassociation of ammonia

The effluent streams from Low density ammonium nitrate (LDAN) plant, Tank farm ammonia, Ammonia Plant, and Week Nitric acid (WNA) plant, Ammonia plant floor washings are collected in Collection/holding tank (CT II) and through gravity flows to Reaction Tank IIA.

The pH in the Reactions Tank IIA is maintained around 10.5 to 11 by addition of caustic, so that at this pH ammonium ion present in the effluent get dissociated into ammonia gas and H^+ ions.

c) Ammonia stripping

The effluent containing dissociated ammonium gas is sent to two-stage ammonia stripping plant. At 1st stage ammonia stripping the pH of the effluent falls down from here the effluent flows to Reaction Tank IIB where pH is again raised to around 10.5 to 11 and then pumped to 2nd stage ammonia stripping. At this stage the ammonical nitrogen in the effluent will be around 108 mg/l. This effluent stream further requires treatment prior to biological denitrification process for nitrate nitrogen removal.

The above treated effluent is collected in Reaction Tank III which is neutralized by addition of DM plant wastewater and diluted with cooling tower blow down so that the ammonical nitrogen concentration is around 50 mg/l (which can be treated biologically by denite bacteria). In case the cooling tower blow down is not available, the treated effluent is recycled back to the system.

d) Nitrate –N and Nitrite –N removal

The treated wastewater from Reactions tank III which still contains Nitrate –N and Nitrite –N is subjected to two stage denitrfication in denite bioreactor. The stage I denite bioreactor is equipped with 3 nos 10 HP agitators and stage II denite bioreactor is equipped with 3 nos 75 HP agitator. The treated water from state I denite bioreactor goes to clarifier I for separation of suspended biomass part of the biomass is recycled for stablization and excess sludge is sent to sludge drying beds.

Provision is made for addition of methanol as organic carbon source for heterotrophic denite bacteria.

e) Polishing/aeration

The treated wastewater over flowing from denite clarifier is collected in polishing aeration tank which is provided with polishing diffuse aeration grids to increase the Dissolved oxygen of the treated effluent before discharged in to CETP Sewer line.

The details of Units of ETP are given **Table 5.4** and the characteristics of wastewater before and after treatment are given in **Table 5.5**.

Table 5.4
Existing Treatment Facilities

S. No	Code No	Units
1	CT I	Collection /holding Tank, CT-I
2	RT I	Reaction Tank-I
3	CF 1	Clarifloculator
4	AS 1	Ammonia stripper Stage-I
5	AS II	Ammonia stripper Stage-II
6	RT IIA	Reaction Tank-IIA
7	RTIIB	Reaction tank –IIB
8	RT III	Reaction Tank-III
9	DN I	Denitrification tank stage-I
10	CL1	Clarifier stage-I
11	DN II	Denitrification tank stage-II
12	CL II	Clarifier stage-II
13	PT	Polishing tank

Table 5.5
Wastewater Characteristics – Before & After Treatment

S. No	Parameters	Units	Before			After
			Process, washes, etc	CT, Boiler, DM	Domestic & Process	Range
1	PH		6.0-7.0	6.0-7.0	6.5-8.0	5.5 to 9.0
2	Suspended solids	Mg/l	99	21	147	< 100
3	BOD	Mg/l	146	18	507	<100
4	COD	Mg/l	247	23	845	<250
5	Oil & Grease	Mg/l	<10	<5	<5	<10
6	TDS	Mg/l	697	-	831	<800
7	Amm. Nitrogen	Mg/l	94	-	-	<50
8	KJ Nitrogen	Mg/l	247	-	-	-
9	Phosphates	Mg/l	99	-	-	<1

The entire wastewater generated is treated and sent to CETP for further disposal along with treated effluent at CETP. The present existing Effluent treatment system will be modified to treat the effluents generated from the proposed IPA plant to the standards laid down by the MPCB. The flow sheet of proposed modification in existing ETP for handling the phosphate bearing effluents and the existing plant is shown below

3) Domestic Sewage Treatment Plant

The sanitary sewage wastewater and part of process wastewater containing biodegradable matter which is around 3.864 m3/day will be treated in the existing sewage treatment plant (STP) of capacity 168 m³/day. The STP comprises aeration tanks followed by clarifier. The existing sewage treatment plant consists of settling tanks, aeration tanks, and clarifiers.

5.4.2 Monitoring of Waste Treatment

All the treated effluents shall be monitored regularly for the flow rate and quality to identify any deviations in performance of effluent treatment plants. Appropriate measures would be taken if the treated effluent quality does not conform to the permissible limits.

5.4.3 Storm Water Drainage

Based on the rainfall intensity of the proposed area, MIDC drainage system is designed on the basis of the storm water flow.

Strom water drainage system consists of well-designed open surface drains network so that all the storm water is efficiently drained off to without any water logging.

5.5 Noise level management

The Incremental noise level due to the proposed plant will be in the range of 45 dB (A) to 49 dB(A) near the plant boundaries in all the directions. The ambient noise levels in the region are within permissible limits.

During purchasing of the major noise generating equipments all necessary control measure will be include in design requirements to have minimum noise levels meeting occupational safety and health association (OSHA) requirement. Appropriate noise barriers/shields, silencers etc. would be provided in the equipment. The noise control is taken in the following ways, namely;

- By selecting low noise prone equipment

- By isolating the noise prone unit from the working personnel's continuous exposure

- By administrative control,

The administrative control would have a major role to monitor noise, take remedial measures and ensure that no plant personnel is over exposed to noise.

Recommendations

- The use of damping material such as thin rubber/lead sheet for wrapping the work places like turbine halls, compressor rooms etc;

- Shock absorbing techniques should be adopted to reduce impact;

- Efficient flow techniques for noise associated with high fluid velocities and turbulence should be used (like reduction in noise generated by control levels in both gas and liquid systems achieved by reducing system pressure to as low as possible);

- All the openings like covers, partitions should be acoustically sealed;

- Inlet and outlet mufflers should be provided which are easy to design and construct;

- Ear plugs will be provided to workmen working near high noise generating sources;

- Noise levels should be reduced by the use of absorbing material on roof walls and floors;

- Increase the distance between source and receiver by altering the relative orientation of the source and receiver. Noise level at the receiver end reduces in inverse proportion to the square of the distance between the receiver and the source;

- Provision of separate cabins for workers/operators; and

- The industrial compound should be thickly vegetated with species of rich canopy

The plant already having an in-house environmental laboratory for the routine monitoring of air, water, soil and noise. For all non-routine analysis, the plant may utilize the services of external laboratories and facilities.

5.6 Solid Waste Management

The main solid waste generated from proposed IPA plant are Calcium phosphate 1 TPD from treatment plant and spent catalyst 60 Tons for two years from manufacturing process. The entire solid waste is sold to authorized agents collecting solid waste.

Table 5.6
Solid Waste Generation & Disposal

Solid Waste	Generation, TPA	Disposal Method
Silica gel	60 Tons per two years	Will be sold to MPCB authorized solid waste collecting vendor
Calcium phosphate	1 TPD	

5.7 Green Belt Development

The purpose of a greenbelt around the plant site is to capture the fugitive emissions, attenuate the noise generated and improve the aesthetics. The greenbelt at the plant site would form an effective barrier between the plant and the surroundings. Open spaces, where tree plantation may not possible, will be covered with shrubs and grass to prevent erosion of topsoil. Adequate attention will be paid to plantation of trees, their maintenance and protection. During commissioning of the project management is proposing to develop a greenbelt all along the boundary wall of plant, along the roads, and surroundings of the production block, boiler, ETP, etc.

A Green belt with 2500 plants is developed in the plant area consisting of species like, Gulmohar, Bamboo, Karanj, Jambhool, Astumbul, and Neem.Annually and proposed to add around 200 plants per year..

5.7.1 Plant Species for Greenbelt

While selecting the plant species for the proposed green belt, the following guidelines will be considered:

- Fast growing type
- Should have a thick canopy cover
- Should be perennial green
- Native origin
- Should have a large leaf area index.

5.7.2 Design of Green Belt

As far possible the following guidelines will be considered in green belt development.

- The spacing between the trees will be maintained slightly less than the normal spaces, so that the trees may grow vertically and slightly increase the effective height of the green belt.
- Planting of trees in each row will be in staggered orientation.
- In the front row shrubs consisting of Callistemon, Prosopis etc. will be grown
- Since the trunks of the tall trees are generally devoid of foliage, it will be useful to have shrubs and trees in front of the trees so as to give coverage to this portion.
- Shrubs and trees will be planted in encircling rows around the project site
- The short trees (< 10 m height) will be planted in the first two rows (towards plant side) of the green belt. The tall trees (> 10 m height) will be planted in the outer three rows (away from plant side).

Tall trees one line and short trees one line will be planted around the boiler house, DG set room and around the production blocks to control the fugitive emissions and to reduce the noise.

The list of plants proposed to be planted in future for developing greenbelt are given in Table 5.7 to 5.10

Table 5.7

Plant Species Recommended For Reduction Of Noise Level

S. No	Scientific Name	Common Name
1	Azadirachta indica	Neem
2	Aegle mamelos	Bel
3	Calbezia trocera	Dhala sirisa
4	Carissa carandas	Karaunda
5	Peltophorum inerme	Perungondrai
6	Saraca indica	Asoka
7	Syzygium cumini	Zaman
8	Tamarindus indica	Imli
9	Pongamia pinnata	Beng
10	Cassia siamia	Chakundi

Table 5.8

Plant Species Recommended For Protection Against Gases And Particulates

S. No	Scientific name	Common Name
1	Butea monosperma	Dhak
2	Cassia fistura	Amaltas
3	Cassia siamia	Kassod
4	Citrila toona	Mahanim
5	Dalbergia sissoo	Shisham
6	Dillenia indica	Chalta
7	Ficus roligosa	Pipal
8	Hardwick binata	Anjan
9	Mathuca indica	Mahua
10	Millingtonia hortensis	Akash nim

Table 5.8

Suggested Plant Species For Green Belt Development

S. No	Scientific name	Common Name
	Large Plants	
1	Cedrrela loona	Maharim
2	Dalbergia sissoo	Shisham
3	Azadirachta indica	Neem
4	Delonix regia	Gul mohr
5	Millingtonia hortensis	Aksh nim
6	Mlomosops elengi	Maulseri
7	Peltophorum inerme	Perungondrai
8	Samania saman	Debdari
9	Thespisia populnea	Paras papal
	Medium Plants	
1	Cassia siamia	Kassod
2	Dillenia indica	Chalta
3	Mathuca indica	Mahua
4	Casuriana equisetifolia	Jungali Suru
5	Pongamia pinnata	Beng
6	Tabulia spasiosa	-
7	Ticoma stans	
8	Terminalia catappa	Jangli badam
9	Thevetia peruviana	Pile kamer
10	Lucaena leucocephala	Subabul
	Small Plants	
1	Averehoa carabbola	Carabola
2	Nallotus philippensis	Sundur
3	Artaboteys odoratissimus	Madanmast
4	Caesalpinia pulcherima	Gulotora
5	Callistomon lanceolatus	Bottle brush
6	Caryota urens	Mari
7	Cestrum dirunum	Din-Ka Raja
8	Nelia azedarch	

Table 5.10

Suggested Plant Species For Road Side Plantation

S. No	Scientific Name	Common Name
1	Azadirachta indica	Neem
2	Pongamia pinnata	Berg
3	Saraca indica	Ashoka
4	Delonix regia	Gul mohr
5	Peltophorum inerme	Copper pod tree
6	Samania saman	Rain tree
7	Cassia nudosa	Pink cassia
8	Bassia latifolia	Mahuva
9	Bahunia variegate	-

5.8 Industrial Safety, health & Hygiene:

The industry has set up a safety, health and environment cell with a qualified person as in charge for safety, health and environment. Reports to the factory manager directly. The chemical laboratory with qualified chemist carries out the necessary analysis and reports to Manager (SHE). Annual Medical checkup is done for all employees. Further check ups are done as an when necessary on doctors advice; required qualified external experts are appointed as and when necessary.

DFPCL takes pride in its health and safety record. We have capabilities in handling and movement of hazardous, toxic and inflammable chemicals. In appreciation of our skill and efforts in maintaining a good record on health and safety, the British Safety Council has presented the company with The British Safety Council Award for the year 2000-2001, making it the third year in a row.

DFPCL follow strict norms for handling of chemicals at our end and recommend safety norms for handling and transportation of our products.

- General Safety Parameters for loading and Transportation of Chemicals
- Vehicle Permit System
- Product-wise Safety Precautions

5.9 Environmental Laboratory Equipment

The parent industry is having an in-house environmental laboratory for the routine monitoring of air, water, soil and noise. For all non-routine analysis, the plant may utilize the services of external laboratories and facilities. The list of laboratory equipments available for monitoring and analysis are listed in below Table.

Table 5.11

List of Equipment of Environmental Laboratory

Name of the Equipment
Weather Monitoring Station
a) Online Automatic gaseous stack monitoring kit for SO_2, NO_x, O_2, Flue gas volume, Temperature etc.b) On line dust monitor
RD Samplers
Portable Flue Gas Combustion Analyser
Bomb Calorimeter for analyzing sulfur content, calorific value etc.
Atomic Absorption Spectrophotometer
Mercury analyzer
Portable Noise level meter (Dosimeter)
Portable Waste Water Analysis Kit
BOD Incubator & COD Digester with colorimeter
Electronic Balance
Colorimeter
Conductivity Meter
Different micron sieves (set)
Dissolved Oxygen Meter – Portable type
Electronic colony counter
Flask Shaker
Hot Air Oven
Laboratory Water Distillation and demineralization unit

5.10 Post Project Environmental Management

The environmental management in the proposed unit will also handled by the existing setup. Presently the environmental management department is headed by Sr.Manager (Safety and Environment). He reports to GM (Tech)/VP (Manufacture). The Sr.Manager is assisted by three assistant managers to look after the safety and environmental factors round the clock. Each assistant engineer in turn is assisted by the staff trained in safety and environmental protection.

The organization setup for Environmental Management of the proposed project is given in **Figure 5.3**.

The department is the nodal agency to co-ordinate and provides necessary services on environmental issues during operation of the project. This environmental group is responsible for implementation of environmental management plan, interaction with the environmental regulatory agencies, reviewing draft policy and planning. This department interacts with Maharastra State Pollution Control Board (MSPCB) and other environment regulatory agencies. The department also interacts with local people to understand their problems and to formulate appropriate community development plan.

Environmental Management Cell

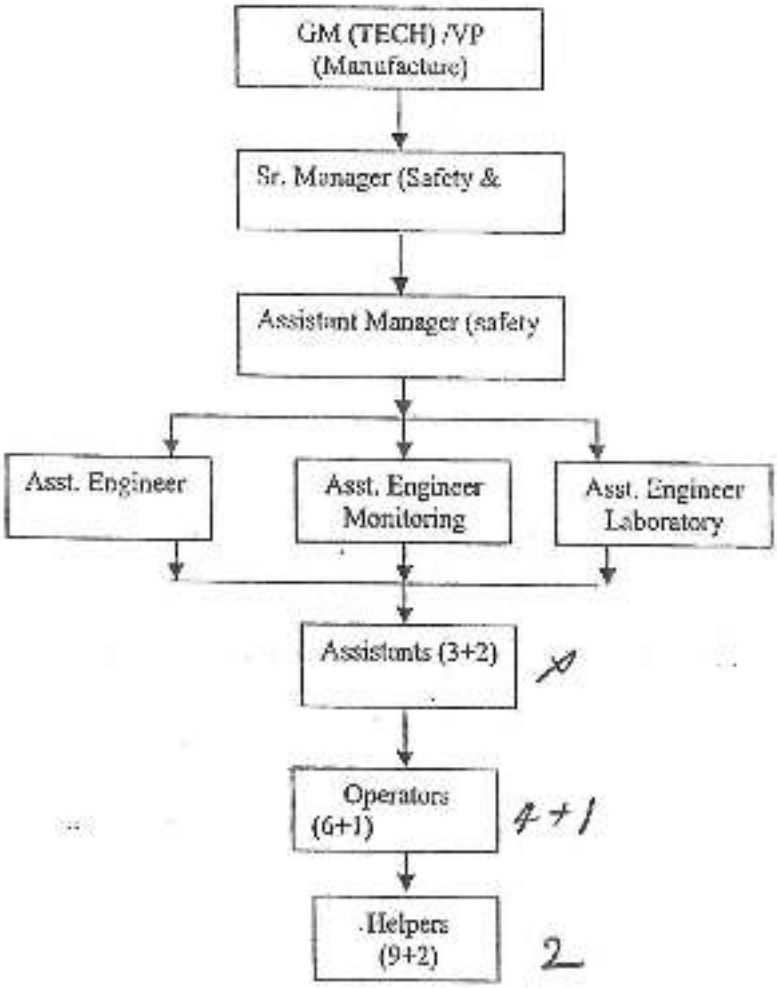

Figure 5.3 Environmental Management Cell

Environment Clearance for IPA (J-11011/218/2004-IA II(I) dated 24.02.2006), MoEF, Paryavaran Bhavan, CGO Complex, Lodhi Road, New Delhi - 110 003.

SN	Specific Conditions	Status of compliance as on 31/03/2022
i)	The gaseous emissions (SO_2, NOx, NH_3 & HCl) and particulate matter from various process units shall confirm to the standards prescribed by authority from time to time. At no time the emission levels shall go beyond the stipulated standards. The Stack height shall be as per CPCB guidelines. In the event of failure of any pollution control system adopted by the unit, the respective unit shall not be restarted until the control measures are rectified to achieve the desired efficiency.Further, the company shall interlock the production system with the pollution control devices.	There is no process stack in IPA emitting any gaseous emissions (SOx, NOx, NH3, HCl & SPM). However monitoring of other plants stacks is being done by third party. Online Continuous Emission Monitoring System installed on individual process and utilities stacks. The stacks meet height requirement as per CPCB guidelines. All care is taken to keep the pollution control devices operational. **(Annexure - 1)**
ii)	Amient Air Quality monitoring stations shall be set up in the downwind direction as well as where maximum ground level concentrations are anticipated in consultation with the MPCB.	Three continuous monitoring AAQM stations are installed and connected to MPCB portal and operated continuously.
iii)	Fugitive emissions in the work zone environment, product and raw material storage area shall be regularly monitored. The emissions shall be controlled and confirm to the limits prescribed by CPCB.	In IPA plant fugitive emissions are hydrocarbon and 11 detectors are installed at critical locations.
iv)	Total water requirement should not exceed 2800 m3/day as per permission accorded by MIDC vide letters dated 03.03.04 and 07.07.05. Further, efforts shall be made for further conservation of water and utilization of waste water.	We meet water requirement. As part of sustainable business we treat RW in polishing unit comprising of UF and RO thus reduced inlet effluent to ETP by more than 600 m3/day.
v)	The effluent generation shall not exceed 667 m3/day. All the effluent shall be treated in the augmented ETP and shall be monitored for the pH, SS, TDS, O & G, BOD, COD, Phosphates & ammoniacal Nitrogen & other relevant parameters. All the treated effluent shall be sent to CETP at Taloja for further treatment. The domestic effluent shall be treated in the existing Sewage Treatment Plant.	Effluent generation is maintained within the stipulated norms. In IPA plant itself the COD water stream treated in organic recovery column to reduce the COD before sending it to ETP. In addition to monitoring of all the ETP parameters (pH, TSS, TDS, O & G, BOD, COD, Phosphates & ammoniacal Nitrogen & other relevant parameters) through sampling internally and third party, OCEMS is installed for monitoring of ETP parameters (pH, TSS,BOD, COD, NH4 N, NO3N, Fluorides and Flow) Treated effluent is sent to CETP Taloja. Domestic effluent is used at ETP bioreactor. **(Annexure - 2)**
vi)	The company shall undertake following Waste Minimization measures: * Metering and control of quantities of active ingredients to minimize waste * Reuse of by-products from the process as raw materials or as raw material substitute in other processes. * Use of automated filling to minimize spillage * Use of close feed system into batch reactor * Venting equipment through vapour recovery system * Use of high pressure hoses for equipment cleaning to reduce waste water generation	*No active ingredient involved in IPA *Propane and Di Isopropyl Ether are the by products from IPA plant and these are sold to customers. *All the tankers are filled through the closed automated system to avoid the spillage. *Our IPA plant is a continuous process and closed filled system is provided to reactor. *As such there is no venting equipment however critical vents are connected to flare system. *High pressure are used to clean the equipments during shutdowns.
vii)	The solid waste generated in the form ETP sludge shall be stored in HDPE lined secured landfill at the site. Spent catalyst and used oil shall be sold to authorized re-processer.	After inhouse study and after characterstic analysis of the ETP sludge by thrid party, it was revealed that the ETP sludge can be used as filler in our fertilzier. Hence we send ETP sludge to CHWTSDF facility only when there is need to send it, like plant is under shutdown. We have received approved CTO for reuse of ETP sludge in NPK plant as a filler. Spent catalyst and used oil are sold to authorized re-processor.
viii)	The project authorities shall strictly comply with the rules and guidelines under MSIHC Rules, 1989 as amended in October, 1994 and January 2000 and HWMH Rules, 2003 as amended from time to time. Authorization from the SPCB shall be obtained for collection, treatment, storage and disposal of hazardous wastes.	All related provisions of MSIHCR-1989 and HWMHR-2003, with their amendments are complied with. Authorization through CTO, valid till 31/03/2026, is obtained from MPCB for collection, treatment, storage and disposal of hazardous waste.
ix)	Company shall develop surface/roof top rain water harvesting structures to harvest runoff water for recharge of ground water.	Rain water harvesting system is provided at WNA 3 plant.
x)	Green belt shall be provided in at least 25% of the plant area to mitigate the effects of fugitive emission all around the plant. Development of green belt shall be as per CPCB guidelines.	Complied with.
xi)	Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the factories act.	Medical examination of all the workers is done once in a six month as per the factories act and records are maintained.

SN	General Conditions	Status of compliance as on 31/03/2022
i)	Project authorities shall strictly adhere to the stipulations made by the MPCB	Complied.
ii)	At no time the emissions shall exceed the prescribed limits. In the event of failure of any pollution control system adopted by the unit, the unit shall be put out of operation and shall not be restarted until the desired efficiency has been achieved.	Same as specific condition No. 1.
iii)	No further expansion or modification in the plant should be carried out without prior approval of the Ministry of Environment and Forests. In case of deviations or alterations in the project proposal from those submitted to this ministry for clearance, a fresh reference shall be made to the ministry to assess the adequacy of conditions imposed and to add additional environmental protection measures required, if any.	Complied
iv)	The overall noise levels in and around the plant area shall be kept well within the standards (85 dBA) by providing noise control measures including acoustic hoods, silencers, enclosures, etc. on all sources of noise generation. The ambient noise levels shall conform to the standards prescribed under the EP Act, 1986, Rules, 1989 viz. 75 dBA (day time) and 70 dBA (night time).	Acoustic enclosures have been provided to DG sets. Periodic noise monitoring is done by MOEF approved 3rd party laboratory at eight different locations and noise level is within the standards prescribed under EP Act,1986, Rules, 1989. **(Annexure - 3)**
v)	The Project Proponent shall also comply with all the environmental protection measures and safeguards recommended in the EIA report.	Environment protection measures and recommendations given in EIA are complied with.

vi)	A separate Environmental Management Cell equipped with full fledged laboratory facilities shall be set up to carry-out the Environmental Management and Monitoring functions.	A separate Environmental Management Cell equipped with required facilities is set up.
vii)	The Project authorities shall earmark separate funds of Rs 25.80 lakhs to implement the conditions stipulated by the Ministry of Environment and Forest as well as the State Government along with the implementation schedule for all the conditions stipulated herein. The funds so provided shall not be diverted for any other purpose.	Noted
viii)	The Company shall undertake welfare measures and community development measures for the local people in the vicinity of project area.	CSR activities are carried out through Ishanya Foundation Trust, set up by the company for rural development, women empowerment, health & education. **(Annexure - 4**)
ix)	The implementation of the project vis-a-vis environmental action plan shall be monitored by the Ministry's Regional Office at Bhopal / MPCB / CPCB. A Six monthly compliance status report shall be submitted to monitoring agencies.	Six monthly compliance reports are being sent to Regional Office of MOEF/MPCB/CPCB. Last report was sent on 30th November 2021. Copy of the same posted on the company's web-site.
x)	The Project Proponent shall inform the public that the project has been accorded environmental clearance by the Ministry and copies of the letters are available with the MPCB and may also be seen at website of the Ministry at http:// envfor.nic.in. This shall be advertised within seven days from date of issue of the clearance letter at least in two local news papers that are widely circulated in the region of which one shall be in the vernacular language of the locality concerned and the copy of the same shall be forwarded to ministry's regional office at Bhopal.	Complied with
xi)	The project authorities shall inform the Regional Office as well as Ministry, the date of financial closure and final approval of the project by the concerned authorities and the date of start of the project.	Complied with

List of Annexures Submitted	
Annexure. No.	Content
1	Stack Monitoring Reports
2	Treated water analysis report
3	Ambient Noise Monitoring Reports
4	CSR Report

Annexure 1: Stack Monitoring Reports

GADARK LAB PVT. LTD.

INDUSTRIAL ANALYSTS & CONSULTANTS

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TEST CERTIFICATE

Doc.No : GLPL/QF/7.8/02

Test Certificate No.	GA/21/10/253	**T. C. Date**	25/10/2021
Customer Name and Address	**M/S. DEEPAK FERTILISERS AND PETROCHEMICALS CORPORATION LTD. PLOT K-1, PART-1, K-2, K-3, K-4, K-5 & K-6, MIDC TALOJA, TALUKA – PANVEL, DIST. – RAIGAD.**		
Letter Ref / Date .	1100007464 / 24-08-21	**Page No.**	1 of 1
Sampling Done By	GLPL	**Sample Received on**	21/10/2021
Sampling Plan	GLPL/QF/7.3/06	**Analysis Period**	22/10/2021 To 23/10/2021

SAMPLING DETAILS - STACK EMISSION

Stack No.	**S-3**
Stack Attached to	Boiler A & B
Stack Dimension [mm]	1500
Stack Height [Meters]	30
Date of Sample collection	20/10/2021
Time of Sampling [Hrs.]	12:00
Volume of flue gas sampled [Lit. at 25°C]	39.2

ANALYSIS REPORT :

Parameters	Unit	Results	M.P.C.B. Limits	Sampling & Analysis Methods
PM	mg/Nm^3	Nil	**10.0**	IS 11255 (Part I) 1985
	Kg/day	Nil		
Sulphur Dioxide	mg/Nm^3	Nil	---	IS 11255 (Part II) 1985
	ppm v/v	Nil		
	Kg/day	Nil		
NO_x	mg/Nm^3	14.8	**350.0**	IS 11255 (Part VII) 2005
	ppm v/v	7.9		
	Kg/day	8.02		
CO	mg/Nm^3	17.2	---	APHA Edition II-134
	ppm	15.0		
	Kg/day	9.30		

End

For **GADARK LAB PVT. LTD.**

AUTHORISED SIGNATORY
[KAILAS V. CHITALKAR]

CHECKED BY

Note :
1. The results relate only to the samples tested.
2. Test certificate shall not be reproduced except in full, without written approval of the laboratory.
3. Samples will be preserved for a period 15 days from the delivery of Test Certificate.
4. Test Results relate only to the conditions prevailing at the time of sampling.
5. Customer complaint register is available at laboratory.

GADARK LAB PVT. LTD.

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TEST CERTIFICATE

Doc.No : GLPL/QF/7.8/02

Test Certificate No.	GA/21/10/254	**T. C. Date**	25/10/2021
Customer Name and Address	**M/S. DEEPAK FERTILISERS AND PETROCHEMICALS CORPORATION LTD. PLOT K-1, PART-1, K-2, K-3, K-4, K-5 & K-6, MIDC TALOJA, TALUKA – PANVEL, DIST. – RAIGAD.**		
Letter Ref / Date .	1100007464 / 24-08-21	**Page No.**	1 of 1
Sampling Done By	GLPL	**Sample Received on**	21/10/2021
Sampling Plan	GLPL/QF/7.3/06	**Analysis Period**	22/10/2021 To 23/10/2021

SAMPLING DETAILS - STACK EMISSION

Stack No.	**S-6**
Stack Attached to	HRSG – 1
Stack Dimension [mm]	1500
Stack Height [Meters]	30
Date of Sample collection	20/10/2021
Time of Sampling [Hrs.]	12:55
Volume of flue gas sampled [Lit. at 25°C]	39.2

ANALYSIS REPORT :

Parameters	Unit	Results	M.P.C.B. Limits	Sampling & Analysis Methods
PM	mg/Nm^3	Nil	**10.0**	IS 11255 (Part I) 1985
	Kg/day	Nil		
Sulphur Dioxide	mg/Nm^3	Nil	---	IS 11255 (Part II) 1985
	ppm v/v	Nil		
	Kg/day	Nil		
NO_x	mg/Nm^3	17.1	**350.0**	IS 11255 (Part VII) 2005
	ppm v/v	9.1		
	Kg/day	21.89		
CO	mg/Nm^3	19.5	---	APHA Edition II-134
	ppm	17.0		
	Kg/day	24.87		

End

For **GADARK LAB PVT. LTD.**

AUTHORISED SIGNATORY
[KAILAS V. CHITALKAR]

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4. Test Results relate only to the conditions prevailing at the time of sampling.
5. Customer complaint register is available at laboratory.

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TEST CERTIFICATE

Doc.No : GLPL/QF/7.8/02

Test Certificate No.	GA/21/10/255	**T. C. Date**	25/10/2021
Customer Name and Address	**M/S. DEEPAK FERTILISERS AND PETROCHEMICALS CORPORATION LTD. PLOT K-1, PART-1, K-2, K-3, K-4, K-5 & K-6, MIDC TALOJA, TALUKA – PANVEL, DIST. – RAIGAD.**		
Letter Ref / Date .	1100007464 / 24-08-21	**Page No.**	1 of 1
Sampling Done By	GLPL	**Sample Received on**	21/10/2021
Sampling Plan	GLPL/QF/7.3/06	**Analysis Period**	22/10/2021 To 23/10/2021

SAMPLING DETAILS - STACK EMISSION

Stack No.	**S-7**
Stack Attached to	HRSG – 2
Stack Dimension [mm]	1500
Stack Height [Meters]	30
Date of Sample collection	20/10/2021
Time of Sampling [Hrs.]	13:50
Volume of flue gas sampled [Lit. at 25°C]	39.2

ANALYSIS REPORT :

Parameters	Unit	Results	M.P.C.B. Limits	Sampling & Analysis Methods
PM	mg/Nm^3	Nil	**10.0**	IS 11255 (Part I) 1985
	Kg/day	Nil		
Sulphur Dioxide	mg/Nm^3	Nil	---	IS 11255 (Part II) 1985
	ppm v/v	Nil		
	Kg/day	Nil		
NO_x	mg/Nm^3	20.2	**350.0**	IS 11255 (Part VII) 2005
	ppm v/v	10.7		
	Kg/day	24.39		
CO	mg/Nm^3	18.0	---	APHA Edition II-134
	ppm	15.7		
	Kg/day	21.74		

End

For **GADARK LAB PVT. LTD.**

AUTHORISED SIGNATORY
[KAILAS V. CHITALKAR]

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TEST CERTIFICATE

Doc.No : GLPL/QF/7.8/02

Test Certificate No.	GA/21/10/256	**T. C. Date**	25/10/2021
Customer Name and Address	**M/S. DEEPAK FERTILISERS AND PETROCHEMICALS CORPORATION LTD. PLOT K-1, PART-1, K-2, K-3, K-4, K-5 & K-6, MIDC TALOJA, TALUKA – PANVEL, DIST. – RAIGAD.**		
Letter Ref / Date .	1100007464 / 24-08-21	**Page No.**	1 of 1
Sampling Done By	GLPL	**Sample Received on**	21/10/2021
Sampling Plan	GLPL/QF/7.3/06	**Analysis Period**	22/10/2021 To 23/10/2021

SAMPLING DETAILS - STACK EMISSION

Stack No.	**S-8**
Stack Attached to	HRSG – 5
Stack Dimension [mm]	1500
Stack Height [Meters]	30
Date of Sample collection	20/10/2021
Time of Sampling [Hrs.]	15:05
Volume of flue gas sampled [Lit. at 25°C]	39.2

ANALYSIS REPORT :

Parameters	Unit	Results	M.P.C.B. Limits	Sampling & Analysis Methods
PM	mg/Nm^3	Nil	**10.0**	IS 11255 (Part I) 1985
	Kg/day	Nil		
Sulphur Dioxide	mg/Nm^3	Nil	---	IS 11255 (Part II) 1985
	ppm v/v	Nil		
	Kg/day	Nil		
NO_x	mg/Nm^3	230.4	**350.0**	IS 11255 (Part VII) 2005
	ppm v/v	122.5		
	Kg/day	393.43		
CO	mg/Nm^3	21.7	---	APHA Edition II-134
	ppm	18.9		
	Kg/day	36.98		

End

For **GADARK LAB PVT. LTD.**

AUTHORISED SIGNATORY
[KAILAS V. CHITALKAR]

CHECKED BY

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5. Customer complaint register is available at laboratory.

GADARK LAB PVT. LTD.

INDUSTRIAL ANALYSTS & CONSULTANTS

LAB.: H-54, Additional M.I.D.C. Kudal, Taluka - Kudal, District - Sindhudurg - 416 525.
Tel. : (02362) 223519 • E-mail : info@gadark.in • Website : www.gadark.in

OFF.: 15, Hindustan Kohinoor Industrial Complex, L.B.S. Marg, Vikhroli (West), Mumbai - 83.
Tel.: (022) 2577 7069 / 2577 7070 / 2085 0091 • +91 93213 12367

TEST CERTIFICATE

Doc.No : GLPL/QF/7.8/02

Test Certificate No.	GA/21/10/249	**T. C. Date**	25/10/2021
Customer Name and Address	**M/S. DEEPAK FERTILISERS AND PETROCHEMICALS CORPORATION LTD. PLOT K-1, PART-1, K-2, K-3, K-4, K-5 & K-6, MIDC TALOJA, TALUKA – PANVEL, DIST. – RAIGAD.**		
P.O. No. / Date .	1100007464 / 24-08-21	**Page No.**	1 of 1
Sampling Done By	GLPL	**Sample Received on**	21/10/2021
Sampling Plan	GLPL/QF/7.3/06	**Analysis Period**	22/10/2021 To 23/10/2021

SAMPLING DETAILS - STACK EMISSION

Stack No.	CNA PLANT-1 VENT
Stack Attached to	**CNA PLANT – 1**
Stack Dimension [mm]	75
Fuel Used	Process Stack
Date of Sample collection	21/10/2021
Time of Sampling [Hrs]	11:05
Volume of flue gas sampled [Lit. at 25°C]	39.2

ANALYSIS REPORT :

Parameters	Unit	Results	M.P.C.B. Limits	Sampling & Analysis Methods
NOx	mg/Nm^3	33.0	--	IS 11255 (Part VII) 2005
	ppm	17.6		
	Kg/day	0.060		
Ammonia	mg/Nm^3	19.1	--	IS 11255 (Part VI) 1999
	ppm v/v	27.4		
	Kg/day	0.040		

End

For **GADARK LAB PVT. LTD.**

AUTHORISED SIGNATORY
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TEST CERTIFICATE

Doc.No : GLPL/QF/7.8/02

Test Certificate No.	GA/21/10/250	**T. C. Date**	25/10/2021
Customer Name and Address	**M/S. DEEPAK FERTILISERS AND PETROCHEMICALS CORPORATION LTD. PLOT K-1, PART-1, K-2, K-3, K-4, K-5 & K-6, MIDC TALOJA, TALUKA – PANVEL, DIST. – RAIGAD.**		
P.O. No. / Date .	1100007464 / 24-08-21	**Page No.**	1 of 1
Sampling Done By	GLPL	**Sample Received on**	21/10/2021
Sampling Plan	GLPL/QF/7.3/06	**Analysis Period**	22/10/2021 To 23/10/2021

SAMPLING DETAILS - STACK EMISSION

Stack No.	**CNA PLANT – 2 VENT**
Stack Attached to	**CNA PLANT – 2**
Stack Dimension [mm]	75
Fuel Used	Process Stack
Date of Sample collection	21/10/2021
Time of Sampling [Hrs]	11:35
Volume of flue gas sampled [Lit. at 25°C]	39.2

ANALYSIS REPORT :

Parameters	Unit	Results	M.P.C.B. Limits	Sampling & Analysis Methods
NOx	mg/Nm^3	30.2	--	IS 11255 (Part VII) 2005
	ppm	16.1		
	Kg/day	0.050		
Ammonia	mg/Nm^3	16.5	--	IS 11255 (Part VI) 1999
	ppm v/v	23.7		
	Kg/day	0.030		

End

For **GADARK LAB PVT. LTD.**

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TEST CERTIFICATE

Doc.No : GLPL/QF/7.8/02

Test Certificate No.	GA/21/10/251	**T. C. Date**	25/10/2021
Customer Name and Address	**M/S. DEEPAK FERTILISERS AND PETROCHEMICALS CORPORATION LTD. PLOT K-1, PART-1, K-2, K-3, K-4, K-5 & K-6, MIDC TALOJA, TALUKA – PANVEL, DIST. – RAIGAD.**		
P.O. No. / Date .	1100007464 / 24-08-21	**Page No.**	1 of 1
Sampling Done By	GLPL	**Sample Received on**	21/10/2021
Sampling Plan	GLPL/QF/7.3/06	**Analysis Period**	22/10/2021 To 23/10/2021

SAMPLING DETAILS - STACK EMISSION

Stack No.	**CNA PLANT – 3 VENT**
Stack Attached to	**CNA PLANT – 3**
Stack Dimension [mm]	75
Fuel Used	Process Stack
Date of Sample collection	21/10/2021
Time of Sampling [Hrs]	12:15
Volume of flue gas sampled [Lit. at 25°C]	39.2

ANALYSIS REPORT :

Parameters	Unit	Results	M.P.C.B. Limits	Sampling & Analysis Methods
NOx	mg/Nm^3	35.9	--	IS 11255 (Part VII) 2005
	ppm	19.1		
	Kg/day	0.070		
Ammonia	mg/Nm^3	20.8	--	IS 11255 (Part VI) 1999
	ppm v/v	29.9		
	Kg/day	0.040		

End

For **GADARK LAB PVT. LTD.**

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TEST CERTIFICATE

Doc.No : GLPL/QF/7.8/02

Test Certificate No.	GA/21/10/252	**T. C. Date**	25/10/2021
Customer Name and Address	**M/S. DEEPAK FERTILISERS AND PETROCHEMICALS CORPORATION LTD. PLOT K-1, PART-1, K-2, K-3, K-4, K-5 & K-6, MIDC TALOJA, TALUKA – PANVEL, DIST. – RAIGAD.**		
P.O. No. / Date .	1100007464 / 24-08-21	**Page No.**	1 of 1
Sampling Done By	GLPL	**Sample Received on**	21/10/2021
Sampling Plan	GLPL/QF/7.3/06	**Analysis Period**	22/10/2021 To 23/10/2021

SAMPLING DETAILS - STACK EMISSION

Stack No.	**S-2**
Stack Attached to	**WNA – III Plant**
Stack Dimension [mm]	953
Fuel Used	Process Stack
Date of Sample collection	21/10/2021
Time of Sampling [Hrs]	10:30
Volume of flue gas sampled [Lit. at 25°C]	39.2

ANALYSIS REPORT :

Parameters	Unit	Results	M.P.C.B. Limits	Sampling & Analysis Methods
NO_2	mg/Nm^3	221.4	**400.0**	IS 11255 (Part VII) 2005
	ppm	117.8		
	Kg/day	222.38		
	Kg/Ton of Weak Nitric Acid Produced	0.29		
Ammonia	mg/Nm^3	20.8	---	IS 11255 (Part VI) 1999
	ppm v/v	29.9		
	Kg/day	20.83		
	Kg/hr	0.87		

End

For **GADARK LAB PVT. LTD.**

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TEST CERTIFICATE

Doc.No : GLPL/QF/7.8/02

Test Certificate No.	GA/21/09/463	**T. C. Date**	06/10/2021
Customer Name and Address	**M/S. DEEPAK FERTILISERS AND PETROCHEMICALS CORPORATION LTD. PLOT K-1, PART-1, K-2, K-3, K-4, K-5 & K-6, MIDC TALOJA, TALUKA – PANVEL, DIST. – RAIGAD.**		
Letter Ref / Date .	1100007464 / 24-08-21	**Page No.**	1 of 1
Sampling Done By	GLPL	**Sample Received on**	30/09/2021
Sampling Plan	GLPL/QF/7.3/06	**Analysis Period**	01/10/2021 To 02/10/2021

SAMPLING DETAILS - STACK EMISSION

Stack No.	S-1
Stack Attached to	Methanol Primary Reformer
Stack Dimension [mm]	1400
Stack Height [Meters]	30
Date of Sample collection	30/09/2021
Time of Sampling [Hrs.]	14:25
Volume of flue gas sampled [Lit. at 25°C]	39.3

ANALYSIS REPORT :

Parameters	Unit	Results	M.P.C.B. Limits	Sampling & Analysis Methods
Sulphur Dioxide	mg/Nm^3	4.7	**Not Specified**	IS 11255 (Part II) 1985
	ppm v/v	1.8		
	Kg/day	5.13		
NO_x	mg/Nm^3	8.2	**400.0**	IS 11255 (Part VII) 2005
	ppm v/v	4.4		
	Kg/day	8.95		
CO	mg/Nm^3	27.5	**Not Specified**	APHA Edition II-134
	ppm	24.0		
	Kg/day	29.94		

End

For **GADARK LAB PVT. LTD.**

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TEST CERTIFICATE

Doc.No : GLPL/QF/7.8/02

Test Report No.	GA/21/12/374	**Test Report Date**	28/12/2021
Customer Name and Address	**M/S. DEEPAK FERTILISERS AND PETROCHEMICALS CORPORATION LTD. PLOT K-1, PART-1, K-2, K-3, K-4, K-5 & K-6, MIDC TALOJA, TALUKA – PANVEL, DIST. – RAIGAD.**		
P.O. No. / Date .	1100007464 / 24-08-21	**Page No.**	1 of 1
Sampling Done By	GLPL	**Sample Received on**	22/12/2021
Sampling Plan	GLPL/QF/7.3/06	**Analysis Period**	23/12/2021 To 24/12/2021

SAMPLING DETAILS - STACK EMISSION

Stack No.	**S-2**
Stack Attached to	**WNA – III Plant**
Stack Dimension [mm]	953
Fuel Used	Process Stack
Date of Sample collection	22/12/2021
Time of Sampling [Hrs]	12:25
Volume of flue gas sampled [Lit. at 25°C]	39.2

ANALYSIS REPORT :

Parameters	Unit	Results	M.P.C.B. Limits	Sampling & Analysis Methods
NO_2	mg/Nm^3	232.1	**400.0**	IS 11255 (Part VII) 2005
	ppm	123.5		
	Kg/day	225.22		
	Kg/Ton of Weak Nitric Acid Produced	0.29		
Ammonia	mg/Nm^3	19.1	---	IS 11255 (Part VI) 1999
	ppm v/v	27.4		
	Kg/day	18.44		
	Kg/hr	0.77		

End

For **GADARK LAB PVT. LTD.**

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TEST REPORT

Doc.No : GLPL/QF/7.8/02

Test Report No.	GA/22/01/281	**Test Report Date**	25/01/2022
Customer Name and Address	**M/S. DEEPAK FERTILISERS AND PETROCHEMICALS CORPORATION LTD. PLOT K-1, PART-1, K-2, K-3, K-4, K-5 & K-6, MIDC TALOJA, TALUKA – PANVEL, DIST. – RAIGAD.**		
Letter Ref / Date	1100007464 / 24-08-21	**Page No.**	1 of 1
Sampling Done By	GLPL	**Sample Received on**	21/01/2022
Sampling Plan	GLPL/QF/7.3/06	**Analysis Period**	22/01/2022 To 25/01/2022

SAMPLING DETAILS - STACK EMISSION

Stack No.	**S-9**
Stack Attached to	**IPA Plant D. G. Set (200 KVA)**
Stack Dimension [mm]	200
Fuel Used	Flue Gas Stack
Date of Sample collection	20/01/2022
Time of Sampling [Hrs]	14:20
Temperature of flue gas [°C]	110
Average flue gas velocity [m/s]	7.6
Average volume of flue gas discharged [Nm^3/hr]	668

ANALYSIS REPORT :

Parameters	Unit	Results	Limits	Sampling & Analysis Methods
PM	g/kW-hr	0.1667	**≤ 0.2 ****	IS 11255 (Part I) 1985
Sulphur Dioxide	mg/Nm^3	96.2		IS 11255 (Part II) 1985
	ppm v/v	36.7		
	Kg/day	1.54	**16.0 ***	
NOx + THC	g/kW-hr	0.2161	**≤ 4.0 ****	IS 11255 (Part VII) 2005
CO	g/kW-hr	0.0964	**≤ 3.5 ****	APHA Edition II-134

*** - M.P.C.B. Limits** **** - MoEF GSR 489 (E), dtd. 09/07/2002 Limits**

End

For **GADARK LAB PVT. LTD.**

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TEST REPORT

Doc.No : GLPL/QF/7.8/02

Test Report No.	GA/22/01/282	**Test Report Date**	25/01/2022
Customer Name and Address	**M/S. DEEPAK FERTILISERS AND PETROCHEMICALS CORPORATION LTD. PLOT K-1, PART-1, K-2, K-3, K-4, K-5 & K-6, MIDC TALOJA, TALUKA – PANVEL, DIST. – RAIGAD.**		
Letter Ref / Date	1100007464 / 24-08-21	**Page No.**	1 of 1
Sampling Done By	GLPL	**Sample Received on**	21/01/2022
Sampling Plan	GLPL/QF/7.3/06	**Analysis Period**	22/01/2022 To 25/01/2022

SAMPLING DETAILS - STACK EMISSION

Stack No.	**S-10**
Stack Attached to	**Methanol Plant D. G. Set (1000 KVA)**
Stack Dimension [mm]	280
Fuel Used	Flue Gas Stack
Date of Sample collection	20/01/2022
Time of Sampling [Hrs]	12:45
Temperature of flue gas [°C]	144
Average flue gas velocity [m/s]	8.6
Average volume of flue gas discharged [Nm^3/hr]	1363

ANALYSIS REPORT :

Parameters	Unit	Results	Limits	Sampling & Analysis Methods
PM	g/kW-hr	0.0828	**≤ 0.2 ****	IS 11255 (Part I) 1985
Sulphur Dioxide	mg/Nm^3	126.6		IS 11255 (Part II) 1985
	ppm v/v	48.4		
	Kg/day	4.14	**80.0 ***	
NOx + THC	g/kW-hr	0.0969	**≤ 4.0 ****	IS 11255 (Part VII) 2005
CO	g/kW-hr	0.0682	**≤ 3.5 ****	APHA Edition II-134

*** - M.P.C.B. Limits** **** - MoEF GSR 489 (E), dtd. 09/07/2002 Limits**

End

For **GADARK LAB PVT. LTD.**

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TEST REPORT

Doc.No : GLPL/QF/7.8/02

Test Report No.	GA/22/01/276	**Test Report Date**	25/01/2022
Customer Name and Address	**M/S. DEEPAK FERTILISERS AND PETROCHEMICALS CORPORATION LTD. PLOT K-1, PART-1, K-2, K-3, K-4, K-5 & K-6, MIDC TALOJA, TALUKA – PANVEL, DIST. – RAIGAD.**		
P.O. No. / Date	1100007464 / 24-08-21	**Page No.**	1 of 1
Sampling Done By	GLPL	**Sample Received on**	19/01/2022
Sampling Plan	GLPL/QF/7.3/06	**Analysis Period**	20/01/2022 To 21/01/2022

SAMPLING DETAILS - STACK EMISSION

Stack No.	**CNA PLANT – 2 VENT**
Stack Attached to	**CNA PLANT – 2**
Stack Dimension [mm]	75
Fuel Used	Process Stack
Date of Sample collection	18/01/2022
Time of Sampling [Hrs]	16:00
Volume of flue gas sampled [Lit. at 25°C]	39.1

ANALYSIS REPORT :

Parameters	Unit	Results	M.P.C.B. Limits	Sampling & Analysis Methods
NOx	mg/Nm^3	29.6	--	IS 11255 (Part VII) 2005
	ppm	15.8		
	Kg/day	0.050		
Ammonia	mg/Nm^3	13.0	--	IS 11255 (Part VI) 1999
	ppm v/v	18.8		
	Kg/day	0.020		

End

For **GADARK LAB PVT. LTD.**

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TEST REPORT

Doc.No : GLPL/QF/7.8/02

Test Report No.	GA/22/01/277	**Test Report Date**	25/01/2022
Customer Name and Address	**M/S. DEEPAK FERTILISERS AND PETROCHEMICALS CORPORATION LTD. PLOT K-1, PART-1, K-2, K-3, K-4, K-5 & K-6, MIDC TALOJA, TALUKA – PANVEL, DIST. – RAIGAD.**		
P.O. No. / Date	1100007464 / 24-08-21	**Page No.**	1 of 1
Sampling Done By	GLPL	**Sample Received on**	19/01/2022
Sampling Plan	GLPL/QF/7.3/06	**Analysis Period**	20/01/2022 To 21/01/2022

SAMPLING DETAILS - STACK EMISSION

Stack No.	**CNA PLANT – 3 VENT**
Stack Attached to	**CNA PLANT – 3**
Stack Dimension [mm]	75
Fuel Used	Process Stack
Date of Sample collection	19/01/2022
Time of Sampling [Hrs]	14:30
Volume of flue gas sampled [Lit. at 25°C]	39.2

ANALYSIS REPORT :

Parameters	Unit	Results	M.P.C.B. Limits	Sampling & Analysis Methods
NOx	mg/Nm^3	33.0	--	IS 11255 (Part VII) 2005
	ppm	17.6		
	Kg/day	0.060		
Ammonia	mg/Nm^3	21.7	--	IS 11255 (Part VI) 1999
	ppm v/v	31.3		
	Kg/day	0.04		

End

For **GADARK LAB PVT. LTD.**

AUTHORISED SIGNATORY
[KAILAS V. CHITALKAR]

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GADARK LAB PVT. LTD.

INDUSTRIAL ANALYSTS & CONSULTANTS

LAB.: H-54, Additional M.I.D.C. Kudal, Taluka - Kudal, District - Sindhudurg - 416 525.
Tel. : (02362) 223519 • E-mail : info@gadark.in • Website : www.gadark.in

OFF.: 15, Hindustan Kohinoor Industrial Complex, L.B.S. Marg, Vikhroli (West), Mumbai - 83.
Tel.: (022) 2577 7069 / 2577 7070 / 2085 0091 • +91 93213 12367

TEST REPORT

Doc.No : GLPL/QF/7.8/02

Test Report No.	GA/22/01/279	**Test Report Date**	25/01/2022
Customer Name and Address	**M/S. DEEPAK FERTILISERS AND PETROCHEMICALS CORPORATION LTD. PLOT K-1, PART-1, K-2, K-3, K-4, K-5 & K-6, MIDC TALOJA, TALUKA – PANVEL, DIST. – RAIGAD.**		
Letter Ref / Date	1100007464 / 24-08-21	**Page No.**	1 of 1
Sampling Done By	GLPL	**Sample Received on**	19/01/2022
Sampling Plan	GLPL/QF/7.3/06	**Analysis Period**	20/01/2022 To 21/01/2022

SAMPLING DETAILS - STACK EMISSION

Stack No.	**S-3**
Stack Attached to	Boiler A & B
Stack Dimension [mm]	1500
Stack Height [Meters]	30
Date of Sample collection	19/01/2022
Time of Sampling [Hrs.]	10:45
Temperature of flue gas [°C]	70
Average flue gas velocity [m/s]	3.8
Average volume of flue gas discharged [Nm^3/hr]	21006

ANALYSIS REPORT :

Parameters	Unit	Results	M.P.C.B. Limits	Sampling & Analysis Methods
PM	mg/Nm^3	Nil	**10.0**	IS 11255 (Part I) 1985
	Kg/day	Nil		
Sulphur Dioxide	mg/Nm^3	Nil	---	IS 11255 (Part II) 1985
	ppm v/v	Nil		
	Kg/day	Nil		
NO_x	mg/Nm^3	16.1	**350.0**	IS 11255 (Part VII) 2005
	ppm v/v	8.5		
	Kg/day	8.10		
CO	mg/Nm^3	15.5	---	APHA Edition II-134
	ppm	13.5		
	Kg/day	7.80		

End

For **GADARK LAB PVT. LTD.**

AUTHORISED SIGNATORY
[KAILAS V. CHITALKAR]

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TEST REPORT

Doc.No : GLPL/QF/7.8/02

Test Report No.	GA/22/01/280	**Test Report Date**	25/01/2022
Customer Name and Address	**M/S. DEEPAK FERTILISERS AND PETROCHEMICALS CORPORATION LTD. PLOT K-1, PART-1, K-2, K-3, K-4, K-5 & K-6, MIDC TALOJA, TALUKA – PANVEL, DIST. – RAIGAD.**		
Letter Ref / Date	1100007464 / 24-08-21	**Page No.**	1 of 1
Sampling Done By	GLPL	**Sample Received on**	19/01/2022
Sampling Plan	GLPL/QF/7.3/06	**Analysis Period**	20/01/2022 To 21/01/2022

SAMPLING DETAILS - STACK EMISSION

Stack No.	**S-8**
Stack Attached to	HRSG – 5
Stack Dimension [mm]	1500
Stack Height [Meters]	30
Date of Sample collection	19/01/2022
Time of Sampling [Hrs.]	11:30
Temperature of flue gas [°C]	113
Average flue gas velocity [m/s]	14.3
Average volume of flue gas discharged [Nm^3/hr]	69998

ANALYSIS REPORT :

Parameters	Unit	Results	M.P.C.B. Limits	Sampling & Analysis Methods
PM	mg/Nm^3	Nil	**10.0**	IS 11255 (Part I) 1985
	Kg/day	Nil		
Sulphur Dioxide	mg/Nm^3	Nil	---	IS 11255 (Part II) 1985
	ppm v/v	Nil		
	Kg/day	Nil		
NO_x	mg/Nm^3	219.6	**350.0**	IS 11255 (Part VII) 2005
	ppm v/v	116.9		
	Kg/day	368.99		
CO	mg/Nm^3	20.6	---	APHA Edition II-134
	ppm	18.0		
	Kg/day	34.64		

End

For **GADARK LAB PVT. LTD.**

AUTHORISED SIGNATORY
[KAILAS V. CHITALKAR]

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Tel.: (022) 2577 7069 / 2577 7070 / 2085 0091 • +91 93213 12367

TEST REPORT

Doc.No : GLPL/QF/7.8/02

Test Report No.	GA/22/01/278	**Test Report Date**	25/01/2022
Customer Name and Address	**M/S. DEEPAK FERTILISERS AND PETROCHEMICALS CORPORATION LTD. PLOT K-1, PART-1, K-2, K-3, K-4, K-5 & K-6, MIDC TALOJA, TALUKA – PANVEL, DIST. – RAIGAD.**		
P.O. No. / Date	1100007464 / 24-08-21	**Page No.**	1 of 2
Sampling Done By	GLPL	**Sample Received on**	19/01/2022
Sampling Plan	GLPL/QF/7.3/06	**Analysis Period**	20/01/2022 To 22/01/2022

SAMPLING DETAILS - STACK EMISSION

Stack No.	**S-2**
Stack Attached to	**WNA – III Plant**
Stack Dimension [mm]	953
Fuel Used	Process Stack
Date of Sample collection	18/01/2022
Time of Sampling [Hrs]	15:05
Temperature of flue gas [°C]	125
Average flue gas velocity [m/s]	28.3
Average volume of flue gas discharged [Nm^3/hr]	54467

ANALYSIS REPORT :

Parameters	Unit	Results	M.P.C.B. Limits	Sampling & Analysis Methods
NO_2	mg/Nm^3	217.9	**400.0**	IS 11255 (Part VII) 2005
	ppm	115.9		
	Kg/day	285.86		
Ammonia	mg/Nm^3	20.0	**Not Specified**	IS 11255 (Part VI) 1999
	ppm v/v	28.8		
	Kg/day	26.14		

End

For **GADARK LAB PVT. LTD.**

AUTHORISED SIGNATORY
[KAILAS V. CHITALKAR]

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TEST REPORT

Doc.No : GLPL/QF/7.8/02

Test Report No.	GA/22/01/278	**Test Report Date**	25/01/2022
Customer Name and Address	**M/S. DEEPAK FERTILISERS AND PETROCHEMICALS CORPORATION LTD. PLOT K-1, PART-1, K-2, K-3, K-4, K-5 & K-6, MIDC TALOJA, TALUKA – PANVEL, DIST. – RAIGAD.**		
P.O. No. / Date	1100007464 / 24-08-21	**Page No.**	2 of 2
Sampling Done By	GLPL	**Sample Received on**	19/01/2022
Sampling Plan	GLPL/QF/7.3/06	**Analysis Period**	20/01/2022 To 22/01/2022

SAMPLING DETAILS - STACK EMISSION

Stack No.	**S-2**
Stack Attached to	**WNA – III Plant**
Stack Dimension [mm]	953
Fuel Used	Process Stack
Date of Sample collection	18/01/2022
Time of Sampling [Hrs]	15:05
Temperature of flue gas [°C]	125
Average flue gas velocity [m/s]	28.3
Average volume of flue gas discharged [Nm^3/hr]	54467

ANALYSIS REPORT :

Parameters	Unit	Results	M.P.C.B. Limits	Sampling & Analysis Methods
PM	mg/Nm^3	3.3	**Not Specified**	IS 11255 (Part I) 1985
	Kg/day	4.31		

End

For **GADARK LAB PVT. LTD.**

AUTHORISED SIGNATORY
[KAILAS V. CHITALKAR]

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TEST REPORT

Doc.No : GLPL/QF/7.8/02

Test Report No.	GA/22/03/408	**Test Report Date**	30/03/2022
Customer Name and Address	**M/S. DEEPAK FERTILISERS AND PETROCHEMICALS CORPORATION LTD. PLOT K-1, PART-1, K-2, K-3, K-4, K-5 & K-6, MIDC TALOJA, TALUKA – PANVEL, DIST. – RAIGAD.**		
P.O. No. / Date	1100007464 / 24-08-21	**Page No.**	1 of 1
Sampling Done By	GLPL	**Sample Received on**	24/03/2022
Sampling Plan	GLPL/QF/7.3/06	**Analysis Period**	25/03/2022 To 26/03/2022

SAMPLING DETAILS - STACK EMISSION

Stack No.	CNA PLANT-1 VENT
Stack Attached to	**CNA PLANT – 1**
Stack Dimension [mm]	75
Fuel Used	Process Stack
Date of Sample collection	24/03/2022
Time of Sampling [Hrs]	12:15
Volume of flue gas sampled [Lit. at 25°C]	38.7

ANALYSIS REPORT :

Parameters	Unit	Results	M.P.C.B. Limits	Sampling & Analysis Methods
NOx	mg/Nm^3	35.7	--	IS 11255 (Part VII) 2005
	ppm	19.0		
	Kg/day	0.07		
Ammonia	mg/Nm^3	17.6	--	IS 11255 (Part VI) 1999
	ppm v/v	25.3		
	Kg/day	0.03		

End

For **GADARK LAB PVT. LTD.**

AUTHORISED SIGNATORY
[KAILAS V. CHITALKAR]

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TEST REPORT

Doc.No : GLPL/QF/7.8/02

Test Report No.	GA/22/03/409	**Test Report Date**	30/03/2022
Customer Name and Address	**M/S. DEEPAK FERTILISERS AND PETROCHEMICALS CORPORATION LTD. PLOT K-1, PART-1, K-2, K-3, K-4, K-5 & K-6, MIDC TALOJA, TALUKA – PANVEL, DIST. – RAIGAD.**		
Letter Ref / Date	1100007464 / 24-08-21	**Page No.**	1 of 1
Sampling Done By	GLPL	**Sample Received on**	24/03/2022
Sampling Plan	GLPL/QF/7.3/06	**Analysis Period**	25/03/2022 To 26/03/2022

SAMPLING DETAILS - STACK EMISSION

Stack No.	**S-6**
Stack Attached to	HRSG – 1
Stack Dimension [mm]	1500
Stack Height [Meters]	30
Date of Sample collection	23/03/2022
Time of Sampling [Hrs.]	10:40
Volume of flue gas sampled [Lit. at 25°C]	38.8

ANALYSIS REPORT :

Parameters	Unit	Results	M.P.C.B. Limits	Sampling & Analysis Methods
PM	mg/Nm^3	Nil	**10.0**	IS 11255 (Part I) 1985
	Kg/day	Nil		
Sulphur Dioxide	mg/Nm^3	Nil	---	IS 11255 (Part II) 1985
	ppm v/v	Nil		
	Kg/day	Nil		
NO_x	mg/Nm^3	16.1	**350.0**	IS 11255 (Part VII) 2005
	ppm v/v	16.2		
	Kg/day	19.26		
CO	mg/Nm^3	18.6	---	APHA Edition II-134
	ppm	16.2		
	Kg/day	22.24		

End

For **GADARK LAB PVT. LTD.**

AUTHORISED SIGNATORY
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TEST REPORT

Doc.No : GLPL/QF/7.8/02

Test Report No.	GA/22/03/410	**Test Report Date**	30/03/2022
Customer Name and Address	**M/S. DEEPAK FERTILISERS AND PETROCHEMICALS CORPORATION LTD. PLOT K-1, PART-1, K-2, K-3, K-4, K-5 & K-6, MIDC TALOJA, TALUKA – PANVEL, DIST. – RAIGAD.**		
Letter Ref / Date	1100007464 / 24-08-21	**Page No.**	1 of 1
Sampling Done By	GLPL	**Sample Received on**	24/03/2022
Sampling Plan	GLPL/QF/7.3/06	**Analysis Period**	25/03/2022 To 26/03/2022

SAMPLING DETAILS - STACK EMISSION

Stack No.	**S-7**
Stack Attached to	HRSG – 2
Stack Dimension [mm]	1500
Stack Height [Meters]	30
Date of Sample collection	23/03/2022
Time of Sampling [Hrs.]	11:25
Volume of flue gas sampled [Lit. at 25°C]	38.8

ANALYSIS REPORT :

Parameters	Unit	Results	M.P.C.B. Limits	Sampling & Analysis Methods
PM	mg/Nm^3	Nil	**10.0**	IS 11255 (Part I) 1985
	Kg/day	Nil		
Sulphur Dioxide	mg/Nm^3	Nil	---	IS 11255 (Part II) 1985
	ppm v/v	Nil		
	Kg/day	Nil		
NO_x	mg/Nm^3	24.6	**350.0**	IS 11255 (Part VII) 2005
	ppm v/v	13.1		
	Kg/day	31.84		
CO	mg/Nm^3	20.6	---	APHA Edition II-134
	ppm	18.0		
	Kg/day	26.64		

End

For **GADARK LAB PVT. LTD.**

AUTHORISED SIGNATORY
[KAILAS V. CHITALKAR]

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TEST REPORT

Doc.No : GLPL/QF/7.8/02

Test Report No.	GA/22/03/411	**Test Report Date**	30/03/2022
Customer Name and Address	**M/S. DEEPAK FERTILISERS AND PETROCHEMICALS CORPORATION LTD. PLOT K-1, PART-1, K-2, K-3, K-4, K-5 & K-6, MIDC TALOJA, TALUKA – PANVEL, DIST. – RAIGAD.**		
Letter Ref / Date	1100007464 / 24-08-21	**Page No.**	1 of 1
Sampling Done By	GLPL	**Sample Received on**	24/03/2022
Sampling Plan	GLPL/QF/7.3/06	**Analysis Period**	25/03/2022 To 26/03/2022

SAMPLING DETAILS - STACK EMISSION

Stack No.	**S-5**
Stack Attached to	Boiler D
Stack Dimension [mm]	1067
Stack Height [Meters]	63
Date of Sample collection	23/03/2022
Time of Sampling [Hrs.]	12:20
Temperature of flue gas [°C]	102
Average flue gas velocity [m/s]	3.6
Average volume of flue gas discharged [Nm^3/hr]	9210

ANALYSIS REPORT :

Parameters	Unit	Results	M.P.C.B. Limits	Sampling & Analysis Methods
PM	mg/Nm^3	Nil	**10.0**	IS 11255 (Part I) 1985
	Kg/day	Nil		
Sulphur Dioxide	mg/Nm^3	Nil	---	IS 11255 (Part II) 1985
	ppm v/v	Nil		
	Kg/day	Nil		
NO_x	mg/Nm^3	15.9	**350.0**	IS 11255 (Part VII) 2005
	ppm v/v	8.5		
	Kg/day	3.51		
CO	mg/Nm^3	19.5	---	APHA Edition II-134
	ppm	17.0		
	Kg/day	4.30		

End

For **GADARK LAB PVT. LTD.**

AUTHORISED SIGNATORY
[KAILAS V. CHITALKAR]

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Annexure 2: Treated Water Analysis Reports

GADARK LAB PVT. LTD.

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Tel.: (022) 2577 7069 / 2577 7070 / 2085 0091 • +91 93213 12367

TEST CERTIFICATE

Doc. No: GLPL/QF/7.8/01

Test Certificate No.	GW/O/21/2676	T.C. Date:	27/10/2021
Customer Name and Address	**M/s. SMARTCHEM TECHNOLOGIES LIMITED. PLOT NOS. K-1, K-1 (PART-1), K-1 (PART-2), MIDC TALOJA, TAL. PANVEL, DIST. RAIGAD.**		
Letter Ref/Date	2100009371 / 24-08-2021		
Lab Reference No.	GW/O/21/2676	Page No.	1 of 1
Sampling Plan	GLPL/QF/7.3/06	Sampling Method	APHA 1060
Sampling Done By	GLPL on 21/10/2021	Sample Received on	22/10/2021
Sample Submitted by	GLPL	Analysis Period	22/10/2021 To 27/10/2021
Sample Description	ETP Treated Water Sample, 1 lit in plastic bottle		

ANALYSIS REPORTS:

Parameters	Units	Test Result	Specification Range as per MPCB Limits	Methods
pH	---	7.27	6.5 To 8.5	APHA 4500 H^+
COD	mg/ltr	72	250	APHA 5220 B
BOD 3 days 27°C	mg/ltr	17	100	IS 3025 (Part 44) : 1993
Total Suspended Solids	mg/ltr	8	100	APHA 2540 D
TDS	mg/ltr	1822	2100	APHA 2540 C
Oil & Grease	mg/ltr	< 0.1	10	APHA 5520 B
Dissolved Phosphate as P	Mg/ltr	0.05	5	APHA 4500 P – D
Ammonical Nitrogen as N	mg/ltr	14.4	50	APHA 4500 NH_3 A
Free Ammonical Nitrogen as N	mg/ltr	0.05	4	APHA 4500 NH_3 C
Nitrate Nitrogen as N	mg/ltr	9.8	20	APHA 4500 NO_3 B
Fluoride as F	mg/ltr	< 0.001	10	APHA 4500 F^-
Total Kjeldhal Nitrogen (TKN) as N	mg/ltr	27.0	75	APHA 4500 N^{org} B

End

For GADARK LAB PVT. LTD.

AUTHORISED SIGNATORY
[SANTOSH V. ZULPE]

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Note:
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3. Samples will be preserved for a period 15 days from the delivery of Test Certificate.
4. Customer complaint register is available at laboratory.

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Tel.: (022) 2577 7069 / 2577 7070 / 2085 0091 • +91 93213 12367

TEST CERTIFICATE

Doc. No: GLPL/QF/7.8/01

Test Certificate No.	GW/O/21/2856	T.C. Date:	22/11/2021
Customer Name and Address	**M/s. SMARTCHEM TECHNOLOGIES LIMITED. PLOT NOS. K-1, K-1 (PART-1), K-1 (PART-2), MIDC TALOJA, TAL. PANVEL, DIST. RAIGAD.**		
Letter Ref/Date	2100009371 / 24-08-2021		
Lab Reference No.	GW/O/21/2856	Page No.	1 of 1
Sampling Plan	GLPL/QF/7.3/06	Sampling Method	APHA 1060
Sampling Done By	GLPL on 17/11/2021	Sample Received on	18/11/2021
Sample Submitted by	GLPL	Analysis Period	18/11/2021 To 22/11/2021
Sample Description	ETP Treated Water Sample, 1 lit in plastic bottle		

ANALYSIS REPORTS:

Parameters	Units	Test Result	Specification Range as per MPCB Limits	Methods
pH	---	6.52	6.5 To 8.5	APHA 4500 H^+
COD	mg/ltr	74	250	APHA 5220 B
BOD 3 days 27°C	mg/ltr	19	100	IS 3025 (Part 44) : 1993
Total Suspended Solids	mg/ltr	26	100	APHA 2540 D
TDS	mg/ltr	1868	2100	APHA 2540 C
Oil & Grease	mg/ltr	1	10	APHA 5520 B
Dissolved Phosphate as P	Mg/ltr	0.08	5	APHA 4500 P – D
Ammonical Nitrogen as N	mg/ltr	12.6	50	APHA 4500 NH_3 A
Free Ammonical Nitrogen as N	mg/ltr	0.04	4	APHA 4500 NH_3 C
Nitrate Nitrogen as N	mg/ltr	8.2	20	APHA 4500 NO_3 B
Fluoride as F	mg/ltr	< 0.001	10	APHA 4500 F^-
Total Kjeldhal Nitrogen (TKN) as N	mg/ltr	28.0	75	APHA 4500 N^{org} B

End

For GADARK LAB PVT. LTD.

AUTHORISED SIGNATORY
[SANTOSH V. ZULPE]

CHECKED BY

Note:
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3. Samples will be preserved for a period 15 days from the delivery of Test Certificate.
4. Customer complaint register is available at laboratory.

GADARK LAB PVT. LTD.

INDUSTRIAL ANALYSTS & CONSULTANTS

LAB.: H-54, Additional M.I.D.C. Kudal, Taluka - Kudal, District - Sindhudurg - 416 525.
Tel. : (02362) 223519 • E-mail : info@gadark.in • Website : www.gadark.in

OFF.: 15, Hindustan Kohinoor Industrial Complex, L.B.S. Marg, Vikhroli (West), Mumbai - 83.
Tel.: (022) 2577 7069 / 2577 7070 / 2085 0091 • +91 93213 12367

TEST REPORT

Doc. No: GLPL/QF/7.8/01

Test Report No.	GW/O/22/0226	Test Report Date	27/01/2022
Customer Name and Address	**M/S SMARTCHEM TECHNOLOGIES LIMITED, PLOT NOS. K-1, K-1 (PART-1), K-1 (PART-2), MIDC TALOJA, TAL. PANVEL, DIST. RAIGAD.**		
Letter Ref/Date	2100009371 / 24-08-2021		
Lab Reference No.	GW/O/22/0226	Page No.	1 of 1
Sampling Plan	GLPL/QF/7.3/06	Sampling Method	APHA 1060
Sampling Done By	GLPL on 21/01/2022	Sample Received on	22/01/2022
Sample Submitted by	GLPL	Analysis Period	22/01/2022 To 27/01/2022
Sample Description	ETP Treated Water Sample, 1 lit in plastic bottle		

ANALYSIS REPORTS:

Parameters	Units	Test Result	Specification Range as per MPCB Limits	Methods
pH	---	7.49	6.5 To 8.5	APHA 4500 H^+
COD	mg/ltr	95	250	APHA 5220 B
BOD 3 days 27°C	mg/ltr	31	100	IS 3025 (Part 44) : 1993
Total Suspended Solids	mg/ltr	15	100	APHA 2540 D
TDS	mg/ltr	1542	2100	APHA 2540 C
Oil & Grease	mg/ltr	0.4	10	APHA 5520 B
Dissolved Phosphate as P	Mg/ltr	1.4	5	APHA 4500 P – D
Ammonical Nitrogen as N	mg/ltr	14.6	50	APHA 4500 NH_3 A
Free Ammonical Nitrogen as N	mg/ltr	0.08	4	APHA 4500 NH_3 C
Nitrate Nitrogen as N	mg/ltr	9.4	20	APHA 4500 NO_3 B
Fluoride as F	mg/ltr	BDL	10	APHA 4500 F^-
Total Kjeldhal Nitrogen (TKN) as N	mg/ltr	24.8	75	APHA 4500 N^{org} B

End

For GADARK LAB PVT. LTD.

AUTHORISED SIGNATORY
[SANTOSH V. ZULPE]

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4. Customer complaint register is available at laboratory.

GADARK LAB PVT. LTD.

INDUSTRIAL ANALYSTS & CONSULTANTS

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Tel.: (022) 2577 7069 / 2577 7070 / 2085 0091 • +91 93213 12367

TEST CERTIFICATE

Doc. No: GLPL/QF/7.8/01

Test Certificate No.	GW/O/21/ 3217	T.C. Date:	27/12/2021
Customer Name and Address	**M/S SMARTCHEM TECHNOLOGIES LIMITED, PLOT NOS. K-1, K-1 (PART-1), K-1 (PART-2), MIDC TALOJA, TAL. PANVEL, DIST. RAIGAD.**		
Letter Ref/Date	2100009371 / 24-08-2021		
Lab Reference No.	GW/O/21/ 3217	Page No.	1 of 1
Sampling Plan	GLPL/QF/7.3/06	Sampling Method	APHA 1060
Sampling Done By	GLPL on 22/12/2021	Sample Received on	23/12/2021
Sample Submitted by	GLPL	Analysis Period	23/12/2021 To 27/12/2021
Sample Description	ETP treated Water Sample, 1 lit in plastic bottle		

ANALYSIS REPORTS:

Parameters	Units	Test Result	Specification Range as per MPCB Limits	Methods
pH	---	7.40	6.5 To 8.5	APHA 4500 H^+
COD	mg/ltr	33	250	APHA 5220 B
BOD 3 days 27°C	mg/ltr	8	100	IS 3025 (Part 44) : 1993
Total Suspended Solids	mg/ltr	44	100	APHA 2540 D
TDS	mg/ltr	1427	2100	APHA 2540 C
Oil & Grease	mg/ltr	0.4	10	APHA 5520 B
Dissolved Phosphate as P	Mg/ltr	0.05	5	APHA 4500 P – D
Ammonical Nitrogen as N	mg/ltr	10.64	50	APHA 4500 NH_3 A
Free Ammonical Nitrogen as N	mg/ltr	0.036	4	APHA 4500 NH_3 C
Nitrate Nitrogen as N	mg/ltr	8	20	APHA 4500 NO_3 B
Fluoride as F	mg/ltr	0.09	10	APHA 4500 F^-
Total Kjeldhal Nitrogen (TKN) as N	mg/ltr	27.4	75	APHA 4500 N^{org} B

End

For GADARK LAB PVT. LTD.

AUTHORISED SIGNATORY
[SANTOSH V. ZULPE]

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TEST REPORT

Doc. No: GLPL/QF/7.8/01

Test Report No.	GW/O/22/0478	Report Date	28/02/2022
Customer Name and Address	**M/S SMARTCHEM TECHNOLOGIES LIMITED, PLOT NOS. K-1, K-1 (PART-1), K-1 (PART-2), MIDC TALOJA, TAL. PANVEL, DIST. RAIGAD.**		
Letter Ref/Date	2100009371 / 24-08-2021		
Lab Reference No.	GW/O/22/0478	Page No.	1 of 1
Sampling Plan	GLPL/QF/7.3/06	Sampling Method	APHA 1060
Sampling Done By	GLPL on 23/02/2022	Sample Received on	24/02/2022
Sample Submitted by	GLPL	Analysis Period	24/02/2022 To 28/02/2022
Sample Description	ETP Treated Water Sample, 1 lit in plastic bottle		

ANALYSIS REPORTS:

Parameters	Units	Test Result	Specification Range as per MPCB Limits	Methods
pH	---	7.90	6.5 To 8.5	APHA 4500 H^+
COD	mg/ltr	114	250	APHA 5220 B
BOD 3 days 27°C	mg/ltr	32	100	IS 3025 (Part 44) : 1993
Total Suspended Solids	mg/ltr	33	100	APHA 2540 D
TDS	mg/ltr	1322	2100	APHA 2540 C
Oil & Grease	mg/ltr	0.5	10	APHA 5520 B
Dissolved Phosphate as P	Mg/ltr	0.20	5	APHA 4500 P – D
Ammonical Nitrogen as N	mg/ltr	19.93	50	APHA 4500 NH_3 A
Free Ammonical Nitrogen as N	mg/ltr	0.98	4	APHA 4500 NH_3 C
Nitrate Nitrogen as N	mg/ltr	10.8	20	APHA 4500 NO_3 B
Fluoride as F	mg/ltr	BDL	10	APHA 4500 F^{--}
Total Kjeldhal Nitrogen (TKN) as N	mg/ltr	28	75	APHA 4500 N^{org} B

End

For GADARK LAB PVT. LTD.

AUTHORISED SIGNATORY
[SANTOSH V. ZULPE]

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Tel.: (022) 2577 7069 / 2577 7070 / 2085 0091 • +91 93213 12367

TEST REPORT

Doc. No: GLPL/QF/7.8/01

Test Report No.	GW/O/22/0738	Report Date	29/03/2022
Customer Name and Address	**M/S SMARTCHEM TECHNOLOGIES LIMITED, PLOT NOS. K-1, K-1 (PART-1), K-1 (PART-2), MIDC TALOJA, TAL. PANVEL, DIST. RAIGAD.**		
Letter Ref/Date	2100009371 / 24-08-2021		
Lab Reference No.	GW/O/22/0738	Page No.	1 of 1
Sampling Plan	GLPL/QF/7.3/06	Sampling Method	APHA 1060
Sampling Done By	GLPL on 24/03/2022	Sample Received on	25/03/2022
Sample Submitted by	GLPL	Analysis Period	25/03/2022 To 29/03/2022
Sample Description	ETP Treated Water Sample, 1 lit in plastic bottle		

ANALYSIS REPORTS:

Parameters	Units	Test Result	Specification Range as per MPCB Limits	Methods
pH	---	7.49	6.5 To 8.5	APHA 4500 H^+
COD	mg/ltr	39	250	APHA 5220 B
BOD 3 days 27°C	mg/ltr	10	100	IS 3025 (Part 44) : 1993
Total Suspended Solids	mg/ltr	44	100	APHA 2540 D
TDS	mg/ltr	1986	2100	APHA 2540 C
Oil & Grease	mg/ltr	0.2	10	APHA 5520 B
Dissolved Phosphate as P	Mg/ltr	0.09	5	APHA 4500 P – D
Ammonical Nitrogen as N	mg/ltr	19.04	50	APHA 4500 NH_3 A
Free Ammonia	mg/ltr	0.38	4	APHA 4500 NH_3 C
Nitrate Nitrogen as N	mg/ltr	11.2	20	APHA 4500 NO_3 B
Fluoride as F	mg/ltr	BDL	10	APHA 4500 F^{--}
Total Kjeldhal Nitrogen (TKN) as N	mg/ltr	34.7	75	APHA 4500 N^{org} B

End

For GADARK LAB PVT. LTD.

AUTHORISED SIGNATORY
[SACHIN B. GAONKAR]

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Annexure 3: Ambient Noise Monitoring Reports

GADARK LAB PVT. LTD.

INDUSTRIAL ANALYSTS & CONSULTANTS

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Tel.: (022) 2577 7069 / 2577 7070 / 2085 0091 • +91 93213 12367

TEST CERTIFICATE

No. GLH/N/12144/21

Date: 30/12/2021

NOISE LEVEL SURVEY

Name of Company	:	**M/s. SMARTCHEM TECHNOLOGIES LTD.** **Plot K-1, MIDC Industrial Area,** **Taloja, A.V. 410 208, Dist. – Raigad.**
Type of Survey	:	**Preliminary Noise Level Survey**
Date of Sampling	:	23rd December 2021.
Location	:	Plant Area,
Instrument Used	:	Sound Level Meter Sr. No. SLM/248/01/14, Model, ACD,
Date of Calibration	:	**13/11/2021 Valid Till 12/11/2022**
Calibrated By	:	SKY Instruments & Controls.

As per " The Factory Act 1948" with " The Maharashtra Factories Rules, 1963" Schedule XXIV the Noise for category of plant area limit in dB (A) Leq is 90 dB (A).

The Noise level is measured in working zone at a distance of 1 meter & at a height of 1.5 meter from the floor.

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Cont.....2/

The following table shows the Permissible Exposure limit in cases of continuous Noise

Total time of exposure (continuous or a number of short term exposure) per day, in hours.	Sound pressure level in dB (A)
8.0 hrs	90.0
6.0 hrs	92.0
4.0 hrs	95.0
3.0 hrs	97.0
2.0 hrs	100.0
1 ½ hrs	102.0
1.0 hrs	105.0
¾ hrs	107.0
½ hrs	110.0
¼ hrs	115.0

Permissible Exposure Levels of Impulsive or Inspect Noise

Peak sound pressure level in dB (A)	Permitted number of impulses or impact per day
140	100
135	315
130	1,000
125	3,160
120	10,000

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Cont.....3/

NOISE LEVEL SURVEY

Sr. No.	Area/ Location	Activity	Sound Level in dB (A) Leq	Limit as per Factory Ace
01	Ammonia Control Room	Plant Operation	79.6	**90**
02	CO2 Control Room	Plant Operation	81.3	**90**
03	WNA 1 Control Room	Plant Operation	77.2	**90**
04	ANP Prilling Tower Ground Floor	Plant Operation	81.8	**90**
05	IPA Control Room (DG Room)	Plant Operation	68.7	**90**
06	NPK Second floor Near Granulator - 02	Plant Operation	87.6	**90**
07	Coal Fire Boiler control Room Out side	Plant Operation	75.1	**90**
08	NPK Bagging Ground Floor	Plant Operation	78.4	**90**
09	Utility Control Room Ground Floor	Plant Operation	83.1	**90**
10	ETP Control Room	Plant Operation	68.8	**90**

For **GADARK LAB PVT. LTD.**

AUTHORISED SIGNATORY
[KAILAS V. CHITALKAR]

GADARK LAB PVT. LTD. ★ MUMBAI ★

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GADARK LAB PVT. LTD.

INDUSTRIAL ANALYSTS & CONSULTANTS

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Tel.: (022) 2577 7069 / 2577 7070 / 2085 0091 • +91 93213 12367

TEST REPORT

No. GLH/N/0415/22

Date: 06/04/2022

NOISE LEVEL SURVEY

Name of Company	:	**M/s. SMARTCHEM TECHNOLOGIES LTD.** **Plot K-1, MIDC Industrial Area,** **Taloja, A.V. 410 208, Dist. – Raigad.**
Type of Survey	:	**Preliminary Noise Level Survey**
Date of Sampling	:	25th March 2022.
Location	:	Plant Area,
Instrument Used	:	Sound Level Meter Sr. No. SLM/248/01/14, Model, ACD,
Date of Calibration	:	**13/11/2021 Valid Till 12/11/2022**
Calibrated By	:	SKY Instruments & Controls.

As per " The Factory Act 1948" with " The Maharashtra Factories Rules, 1963" Schedule XXIV the Noise for category of plant area limit in dB (A) Leq is 90 dB (A).

The Noise level is measured in working zone at a distance of 1 meter & at a height of 1.5 meter from the floor.

GADARK LAB PVT. LTD. * MUMBAI *

Cont.....2/

The following table shows the Permissible Exposure limit in cases of continuous Noise

Total time of exposure (continuous or a number of short term exposure) per day, in hours.	Sound pressure level in dB (A)
8.0 hrs	90.0
6.0 hrs	92.0
4.0 hrs	95.0
3.0 hrs	97.0
2.0 hrs	100.0
1 ½ hrs	102.0
1.0 hrs	105.0
¾ hrs	107.0
½ hrs	110.0
¼ hrs	115.0

Permissible Exposure Levels of Impulsive or Inspect Noise

Peak sound pressure level in dB (A)	Permitted number of impulses or impact per day
140	100
135	315
130	1,000
125	3,160
120	10,000

GADARK LAB PVT. LTD. * MUMBAI *

Cont.....3/

NOISE LEVEL SURVEY

Sr. No.	Area/ Location	Activity	Sound Level in dB (A) Leq	Limit as per Factory Ace
01	Ammonia Control Room	Plant Operation	74.9	**90**
02	CO2 Control Room	Plant Operation	82.0	**90**
03	WNA 1 Control Room	Plant Operation	77.3	**90**
04	ANP Prilling Tower Ground Floor	Plant Operation	81.1	**90**
05	IPA Control Room (DG Room)	Plant Operation	71.6	**90**
06	NPK Second floor Near Granulator - 02	Plant Operation	84.4	**90**
07	Coal Fire Boiler control Room Out side	Plant Operation	73.9	**90**
08	NPK Bagging Ground Floor	Plant Operation	73.3	**90**
09	Utility Control Room Ground Floor	Plant Operation	80.3	**90**
10	ETP Control Room	Plant Operation	74.8	**90**

For **GADARK LAB PVT. LTD.**

AUTHORISED SIGNATORY
[SACHIN B. GAONKAR]

GADARK LAB PVT. LTD. * MUMBAI *

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Annexure 4: CSR Report

Deepak Fertilizers and Petrochemicals Corporation Ltd, Taloja
And
Smartchem Technologies Limited
CSR Report 2021-22

OUR PHILOSOPHY

'Give a man a fish and you feed him for a day; teach a man to fish and you feed him for a lifetime'. Inspired by this old saying DFPCL and STL foremost objective is to implement initiatives that empower beneficiaries by equipping them with employable skills that generate sustainable livelihoods, as opposed to merely providing them with material and financial aid. DFPCL and STL strives to give wings to the hopes and dreams of the marginalised; helps them to develop skills and nurture aspirations which enable self-sufficiency and socio-economic upliftment.

For DFPCL and STL, our beneficiary's success is our success; when they rise, so do we.

VISION

To act as an elective catalyst in creating self-reliant and respectable societies, with secure and sustained means of livelihood, through employable skills and resource support and additionally, to promote and support the rich cultural heritage of India.

MISSION

Since its inception, IsFon has been consistently committed to:

- Identifying and filling gaps in the economy and in the social support systems
- Imparting vocational and so its skills to enhance employability
- Facilitating income generation and self-employment programmes
- Providing marketing and financial support to the beneficiaries
- Promoting initiatives for the development of communities and self-help groups

- Initiating preventive and corrective healthcare facilities
- Enhancing the skills of farmers
- Undertaking soil, nutrient, agri-input and produce enhancement initiatives for farmers
- Supporting performance arts, talent and cultural richness among local communities
- Extending crisis support in times of unexpected calamites and disasters.

INTRODUCTION:

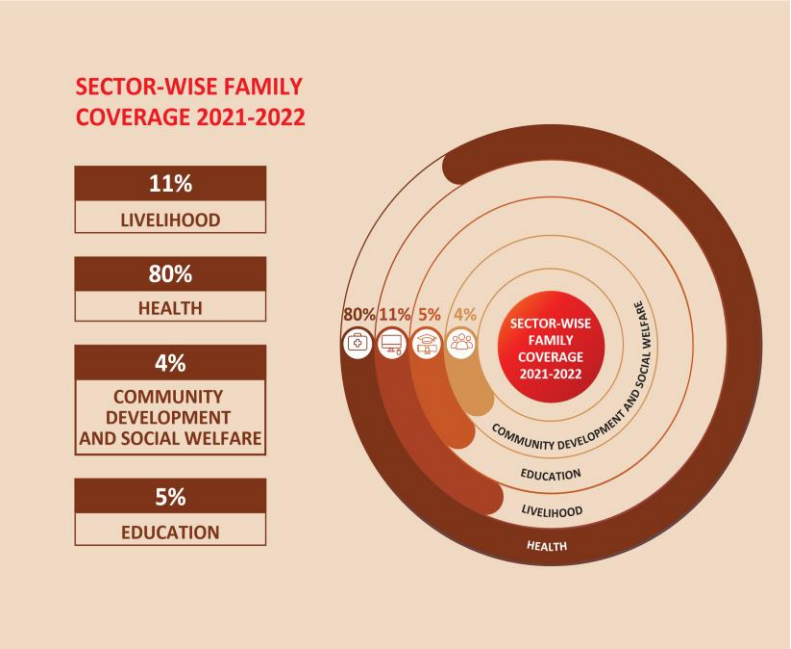
As a true corporate citizen, DFPCL and STL are committed to social thought and action and is resolute in its dedication to serve the society they live in. The Company has been engaged in community work through ***"Ishanya Foundation (IsFon)"*** at Taloja, and Pune in Maharashtra and Dahej in Gujrat.

The CSR Arm of Deepak Fertilisers and Petrochemicals Corporation Limited, Pune (DFPCL) and Smartchem Technologies Limited, ***Ishanya Foundation (ISFON)*** is a registered NGO under the provision of the ***Bombay Public Trust Act 1950.***

DFPCL and STL have always considered its surrounding communities as an important group of stakeholders in its business and is committed to contribute towards improving their quality of life through various measures. Projects being implemented in 47 villages and 19 hamlets in and

around Taloja MIDC and urban area of Pune of Maharashtra state and 2 villages from Dahej from Gujrat State.

OVERVIEW OF INITIATIVES



In 2021-22, through IsFon has positively impacted the lives of 26,516 beneficiaries through a number of rural and urban initiatives for health, education and sustainable livelihoods. For urban communities, we continue to implement initiatives aimed primarily at enhancing employability and income. These include Vocational Skill Development Project (VSDP), Livelihood Enhancement through Entrepreneurship Development Project (LEED) like Muskaan, Income Generation Project (IGP), Yellow Ribbon NGO & Arsans Fair (YRNF), entrepreneurship Development and Aarogyam. Rural communities extend to benefit from our Wadi, Dairy Development Project (DDP), Aarogyam, Gyanam, Community Development & Social Welfare, Entrepreneurship Development and Vocational Skills Development Project (VSDP). Through these initiatives, IsFon's dedicated team has helped small & marginalized farmers, women and youth fight poverty, combat health issues and find sustainable livelihoods.

Sr. No	Name of Project	Major Activities	Rural	Urban	Total Beneficiaries' Covered
1	Dairy Development Project (DDP)	Crossbreed Cow, Artificial Insemination, Pregnancy Diagnosis, Vaccination, Fodder Development, Training	276	-	276
2	Wadi	Mango Plantation, Soil & Water Conservation, Water Resource Development & Conveyance, Vegetables Cultivation, Development of Model / Trail Plots and Effective Water Use, Nursery development & Capacity Building	395	-	395
3	Aarogyam	Mobile Clinic, Eye Camp, Cataract Surgery, Spectacle Distribution, HealthAwareness Camp, Pathology	20,175	932	21,107

		Service, Masks, Ambulance, Oxygen Plant, Oxygen Concentrator, Covid Kit, Supportfor Medicine, COVID Vaccination Drive			
4	Community Development & Social Welfare (CDSW)	Garden Development, Water Filter, Food Kit during Pandemic, Donation of chairs	1,129	-	1,129
5	Vocational Skills Development Project (VSDP)	Job Oriented Vocational Courses with Spoken English & Personality Development, Sponsorship of CourseFees, Placements	38	282	320
6	Livelihood Enhancement through Entrepreneurship Development (LEED)	Income Generation Programme, Muskaan, Entrepreneurship Development, Yellow Ribbon NGO &Artisans Fair	31	1,835	1,866
7	Gyanam	Digital Classroom, Infrastructure Development, Lab Equipment, Sports Kit, Teacher Appointment	1,423	-	1,423
Total Beneficiaries			23467	3049	26516

1. VOCATIONAL SKILL DEVELOPMENT PROJECT (VSDP)

URBAN INITIATIVES

IsFon believes that with quality training and placement support, underprivileged women and youth from marginalized communities can find better opportunities for employment, and gradually lead their families out of poverty.

Women being the driving force of such families, it was imperative we help them learn the skills to livelihood. In doing so, we not only help put food on the table, we foster self-reliance, install pride and build confidence that impacts their families and the community.

TOTAL 282 aspirants were trained in various job oriented vocational courses.

Objectives:

- To provide vocational training as per the market demand to girls, women, youth and school dropouts from financially challenged communities.
- To provide employable skills to the beneficiaries to lead a sustainable livelihood.
- To provide so its skills training in Personality Development and Spoken English to aspirants who undergo the vocational training, for their overall development and employability.
- To provide sponsorship of course fees to needy students

Activities:

- Identification and market research for employable skills which are in demand

- Community Mobilization & Awareness Campaign in the slum communities
- Selection, screening and counseling of beneficiaries & their families
- Design and development of training modules and schedules
- So, its Skills training
- One on one Mentoring and counseling
- Inclusion of guest lectures by experts from various fields to share their expertise with the beneficiaries
- Financial inclusion like health insurance and linkage with the banks
- Monitoring of the various courses as per the schedule and the syllabus
- Evaluation, Assessment, Testing and Certification
- Advocacy with industry for placement
- Tracking of beneficiaries post-employment

Beautician Course being conducted at IsFon

Certificate Course in Information Technology in progress at IsFon

Total Trained: 282 aspirants

Total employed: 252 aspirants

Salary: ₹10,000/- to ₹23,000/- per month

Beautician Course being conducted at IsFon

Certificate Course in Information Technology in progress at IsFon

VSDP SUCCESS STORIES

Ms. Pooja Shivaji Yede

Support: Sponsorship given for Post Basic B.Sc. Nursing fromSymbiosis College of Nursing

Placement: Staff Nurse at D.Y. Patil Hospital, Pune

Salary: ₹ 22,000/- per month

Pooja's father is a construction worker earning a meagre ₹ 60,000/- per year while her mother is a housewife. They live together in their own kaccha house. Pooja completed her GNMand worked for one year at City Care Hospital but always had the dream for pursuing Post Basic B.Sc. Nursing which she was able to do through a scholarship from Ishanya Foundation. Today, Pooja is a qualified staff nurse at D. Y. Patil Hospital earning ₹ 22,000/- per month.

Mr. Jaydeep Lokare

Support: Sponsorship given for Assistant Operator Course **Placement:** Trainee at Motherson Automotive Technologies inChakan, Pune

Salary: ₹ 14,500/- per month

Jaydeep is from Phulawade, Ambegaon, Pune - a tribal area. Hisfather is the only earning member in his family.

After completing an 'Assistant Operator Course' sponsored by IsFon, Jaydeep got a job as 'Trainee' with Motherson Automotive Technologies in Chakan, Pune and draws a salary of ₹ 14,500/- pm. This has given himconfidence and a positive approach to life.

He says that due to his job, he has seen a complete change in the outlook of his family; his father is happier and more relaxed. He is very thankful to IsFon and is eager to sharehis experience with his friends.

VSDP (RURAL)

IsFon initiated skill enhancement through various training programs such as Tailoring courses and Optometry courses. These activities created a positive impact on the aspirants, providing them financial stability and inclusivity within the community.

32	6
• Tailoring Course Beneficiaries	• for B.Sc. Optometry at Laxmi College of Optometry

VSDP SUCCESS STORIES (Rural)

Mrs. Sonam Baban Pardhi **Support:** Basic tailoring course
Earning: ₹ 6,000/- per month

Sonam is 18 years old staying with four other members in her family. Her father is the only earning member and is working atTaloja MIDC at a modest salary. Sonam wanted to support her family financially. She came toknow about IsFon's tailoring course and enrolled for it. The course helped her gain confidence to hone her stitching skills and find the courage to start her own enterprise of stitching fashionable saree blouses. Now she is earning
₹ 6,000/- per month

Mrs. Aarti Subhash Bhoir
Support: Sponsorship of fees for Diploma in Optometry
Earning: ₹15,000/- per month

Aarti's family consists of two sisters, one brother and mother who is a house wife. Her family was going through a difficult to me. Yet, Aarti had a keen desire to study. In 2014, tool admission for Diploma in Optometry in Panvel.
Due to financial constraints, she approached Ishanya Foundation for help. IsFon provided the much-needed financial support under the Vocational Skills Development Project. After completing her course, she is now working as an Optometrist in Sunshine Eye Care Hospital, in Khopoli which is a great help to her family

2. LIVELIHOOD ENHANCEMENT THROUGH ENTREPRENEURSHIP DEVELOPMENT (LEED)

LEED provides entrepreneurship opportunities and facilitates livelihood through secondary source of income generation for financially challenged women

i) Income Generation Programme (IGP)

The Income Generation Programme supports more than 75 women from the marginalized communities in Pune and two NGOs namely Anubhav Foundation and Seva Sahayog Foundation.
Beautiful handmade cloth products like git envelopes, gifting bags, thali covers, table mats, saree covers, jewelry pouches, etc. are carefully designed by experts and make perfect gifting options.
Women who already have basic stitching skills using a sewing machine are trained to make various gifting products. After a thorough quality control check, the beneficiaries are trained to stitch them. This new enhanced skill set helps to earn a secondary source of income.

₹ 3,25,906/-	Income earned by ladies
₹ 7,97,418/-	Sale of products

ii) Muskan

Based on the principle of 'Reuse & Recycle', this is a unique initiative empowering financially challenged women fondly called 'Muskaan Parees'. The Parees are from marginalized communities, between 25 to 50 years of age, and have missed out on education.
Resource Recycle Centre as well as ladies from various walks of life from Pune and Mumbai graciously support the initiative by collecting pre-owned garments and accessories, which are thoroughly checked for quality and usability. These are then sold by the Parees enabling them, to earn an additional income and attain more financial stability.
It also benefits the customers since the items are sold at a very nominal price.
The unsold garments are collected by Swachh under its V-Collect initiative for recycling.

₹ 1,47,710/-	₹ 3,585/-	1,282/-
Total value of sale of garments	Sale of other items through Credit Kart	Beneficiaries

iii) Yellow Ribbon NGO & Artisans Fair (YRNF)

a. The Yellow Ribbon NGO & Artisans Fair is an annual pre-Diwali event which wasorganized from 8th to 11th October 2021 at Creaticity, Pune. It is a unique platform that brings the collective work of NGOs, artisans, farmers, social enterprises and SHGs from across India providing them with a platform to reachout to their stakeholders be it – individuals, corporate and government bodies.
b. The YRNF provides its participants to showcase and sell the products made as part of their income generation activities. True to its moto "achchi kharidari,accha karma", the event also generates awareness about the work they do andthe various causes they support such as livelihood, health, women empowerment, education, environment and social welfare.
c The foundation makes git hampers which includes products made by some of the participants. The sale of these hampers also helps in sale and exposure of their products.
d. This year's participants came from across Maharashtra, Himachal Pradesh, andRajasthan.

They exhibited and sold products ranging from sweets, gifting articles, Diya's, dry fruits, candles, flower vases, organic cereals & pulses, traditional Indian woven sarees and dress material and much more.

39	Total Participating Organizations
₹ 10,46,900	Total Sale
Give hamper Sale ₹ 1,37,500/-	55 Hamper bags benefiting 8 NGOs, SHGs and Farmer producers

iv) Entrepreneurship Development (Urban & Rural)

For many who live on the fringes of society, to start their own business or expand an existing one, is a difficult dream. They struggle with poor entrepreneurial capabilities, unavailability of information and access to markets as well as lack of finances to purchase related necessary equipment.

Our Entrepreneurship Development initiative supports them to make their dreamscome true. The programme seeks to enhance skills and knowledge to empower self-employment and run small businesses through various initiatives.
Our contribution included:

Uran			Rural	
Hand Cart	27		Photoshop Set	01
Tiffin Kit	10		Welding Shop Set	01
Plumbing Kit	01		Beauty Parlor Kit	02
Colour Inkjet Printer	02		Electrician Kit	02
Food Processor, Industrial Mixer, Plastic Bottles Sealing Machine, Weighing Machine,Mannequin	20		Catering Set	01
			Painting Kit	01
			Tapari	03
			Barber Tool Kit	04
Food Dryer with 12 Trays	10		Handcarts	09
Welding & Drilling Machine with Cable	03		Sewing Machine	05
Industrial Sewing Machine	01		Flour Mill	02
Total Beneficiaries	**74**		**Total Beneficiaries**	**31**

SUCCESS STORIES (RURAL)

Mr. Deepak Shantaram Pardi, Barbar Shop
Earning ₹ 350/- per day

Deepak has his own barber shop at Bhalyachiwadi village in Panvel. Earlier he had an old style wooden chair for his customers. Besides, his shop was not equipped with latest trimmer and massage machine. As a result the youngsters used to go to other surrounding villages for an haircut and

After IsFon's intervention, his shop was equipped with a proper barber chair, agood trimmer and massage machine. This change helped him to add young customers from his village and increased his daily income from ₹ 150/- to ₹ 350/-per day.

Mrs. Nikita Nisikat Jage, Handcart
Earning ₹ 500/- per day

Nikita is 37 years old and

has a son and a daughter. She belongs to an economically weaker section and is the onlyearning member in the family. Earlier she had a tough time meeting her family needs. She wanted to do something to provide financial support to her family.

She used to prepare snacks on a small table in front of her house in Chindran village in Panvel and sell them to customers.

During monsoons and summer, it was difficult for her to sell as the food items were in the open. Nikita approached IsFon and requested for a handcart under its Entrepreneurship Development Program. IsFon provided support in purchasing a handcart. As a result, she is now mobile and sells her food items in two places in the village. Besides, even during monsoons and summer her business is not affected. Nikita says she is happy because her income has increased from ₹ 200/- to ₹ 500/- per day and is indebted to IsFon's timely help.

RURAL INITIATIVES

- Wadi Project
- Dairy Development Project (DDP)
- Community Development & Social Welfare (CDSW)
- Aarogyam (Urban and Rural)
- Gyanam

WADI PROJECT

Under this initiative, the small and marginalized farming families are given access to integrated farming tools and techniques for intensive land development. They are also provided expert guidance in new techniques, commercial farming and market linkages.

Selected with due diligence based on set criteria, the farmers are given support to establish a half-acre Kesar mango orchard with 30 trees. IsFon assists with almost every aspect of the orchard - from water resource development, lifting devices, farm tools, plant nutrition andprotection.

Support given on 0.5-acre land:

- Establish mango orchard - Kesarvariety
- Fertilizer
- Pesticide
- Farm Tools
- Vegetable seeds
- Water pumps & pipes
- IPM & INM techniques
- Development of eroded wasteland
- through soil and water
- conservation
- Cultivation of vegetables
- Development of Model/Trial Plots

Total no. of mango trees planted	11,460
Survival rate	85.31%
Acres	191.50
Families covered	380 Wadi + 10 WRD support + 5 Nursery = 395
Villages & hamlets covered	18
Total income from vegetable sales	71.04 lakh (257 farmers)
Number of farmers cultivating vegetables on their own	380
Nursery developed	Vegetable saplings - 05 (14,666 vegetable seedlings), Mango - 08 (4,286 grafts), Jasmine - 01 (1,282 saplings)
Demonstration of new plots	19 (Jasmine - 5, Marigold - 3, Ginger - 2,Cherry Tomato - 3, Turmeric - 3, SweetCorn - 2, Baby Corn - 1)
Aspirants' meetings	106

SUCCESS STORIES:

WADI PROJECT

Case study-2021-22

ISHĀNYA FOUNDATION

52

Project: Wadi Project

Year of Participation: 2014

Name of Aspirant: Mrs. Nami Soma, Mr. Soma Navshya Pardhi
Village : Hedutne, Taluka: Panvel, District: Raigad
Family Profile : **Tribal Familiy**
Mrs.Nami and Mr. Soma have two son. Elder Son Sharad is studying in 2nd Year Fitter course (ITI) and Second Arun is in 10th class. Arun and Sharad also helping to mother and father in the farm work. Before wadi plantation land was uncultivable and not getting income from the same piece of land. After wadi plantation he started getting additional income from mango fruits. Livelihood of the family is dependent on Agriculture and allied activity.
Land: 1 Acre

Mango	*18 no. of fruiting plants*	*14 Kg. Home consumption*	*103 Kg. sold in the market*	*117 total yield in Kg.*	*23,500*
Vegetable Cultivation	*Sponge Gourd- 10 R Cucumber- 10 R*	*Total Production Kg- 780 Kg + 820 Kg respectively.*	*Av Rate: 35Rs./Kg & 16 Rs./Kg. respectively*	*Income: 27300+13120 respectively*	*40,420*

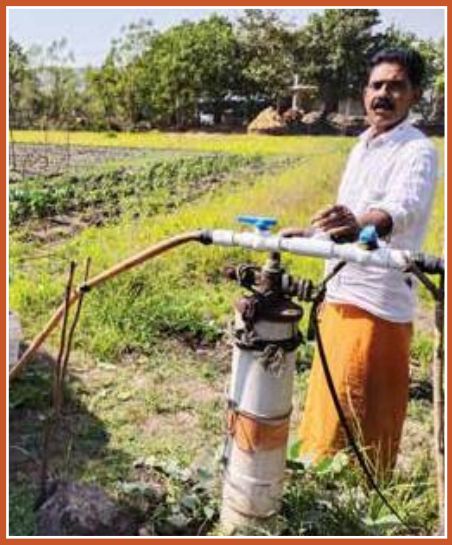
Name of Aspirant: Mrs. Jayshree Sajjan, Mr. Sajjan Govardhan Pawar

Village: Kanpoli, Tal: Panvel, Dist.: Raigad

Sajjan and Jayshree have a daughter studying in 8th class and son in 6th class. The daughter helps them in the farm work during vacations. Agriculture is their mainsource of income. After training and seed support, Jayshree and Sajjan started floriculture farming and changed their cropping pattern. Due to this intervention, they got more income other than what they earned through the regular crops. Hence, they decided to continue floriculture farming and are encouraging other farmers for floriculture.

Plantation Year (Marigold Flowers)	Cultivated Area@R	Self-consumption quantity (Kg)	Sold quantity in Kg	Avg. rate of flowers per KG. (Rs.)	Total Income
2021-2022	05	5.5	335.5	Rs.60/-	Rs.20130/-

SNAPSHOTS OF SUCCESS



DAIRY DEVELOPMENT PROJECT (DDP)

For small, marginalized, landless farmers and labourers, the DDP aims to build and enhance dairy farming productivity. Based on set criteria, aspirants are selected with due diligence and provided assistance to start and improve dairy farming. These small dairy farmers can earn ₹ 8000/- to ₹ 12,000/- per month through the sale of milk and cow dung.

- Eligible women of farmer's households are supported with cross breed cow
- Assistance in the development of fodder plots
- Doorstep services of vaccination, artificial insemination followed by pregnancy diagnosis of cows and buffaloes
- Support of market linkage for selling milk

Total milk produced	4,62,970 Ltr
Milk consumed at home	1,00,005 Ltr
Milk consumed by calf	69,615 Ltr
Milk sold in the market	2,93,350 Ltr
Additional Income through sale of milk	₹ 1,14,92,010/-
Cow dung produced	99.55 MT
Artificial Insemination + Sorted Semen AI-	837
Pregnancy Diagnosis (PD) (Jan-20 to Dec-20)	905 Confirm Pregnancy Diagnosis (CPD) - 399, Empty - 76; Repeat - 411; Pending - 19 = 905 Conception Rate - 45.03%
Calving	281 (Male - 129, Female - 152)

SUCCESS STORIES:

Dairy Development Project
Case Study

ISHANYA FOUNDATION

Year of Participation : 2013-14, 2021-22

Name of Participant : Mrs. Mayura Mahesh Kambale, Mr. Mahesh Rama Kambale

Village : Nere. Taluka: Panvel . District : Raigad

Family Profile : Mrs Mayura and Mahesh have 1 son Dipesh- age 26-12th pass, presently doing private job as per availability at nearby places and after job he is helping to father in the dairy work. Mr. Mahesh is Marginal landholder farmer. Earlier livelihood of family was dependent on only agriculture. Income from agriculture was not sufficient, so facing difficulties to complete education of children and full fill the family needs. After Ishanya Foundation intervention family started getting good Additional Income from Dairy Business. Now the Dairy Business is become main source of Income for the family.

Land: 10 R

Support Given	Asset Created	Total milk During FY 2021-21	Sold out Milk	Average Rate/lit	Annual Income
02 Cows; B- 8 & B-55 Medicine Kit; Training; Exposure	1st calf 6 year: Milking 2nd Calf 3 Year: Ready for Insemination 1 Male calf (2 Month age) **Total Asset of Rs-75000/-**	1530 lit	1030 lit Sale of milk at Household	Rs.40	Rs.41200/-

Dairy Development Project
Case Study

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Fodder Development:

Fodder development is crucial to the running of a dairy enterprise. IsFon's experts know that green fodder is a cost-efficient initiative for the farmer's livestock, yet its availability is insufficient. With the limited land under fodder cultivation, dairy farmers need to focus on improving productivity of fodder crops. To increase the profit of the dairy enterprise, IsFon supported cultivation of Azolla, Maize and Napier Grass.

Azolla	10
Napier Grass	10
Calf Grower Feed Distribution	100
Maize Seed Distribution	100

COMMUNITY DEVELOPMENT AND SOCIAL WELFARE (CDSW)

Under this initiative by IsFon, community members come together to resolve common problems by taking collective action. The aim of this initiative is to bring about community development through collective actions of the members of the community by acting as a catalyst to overcome economic, social and environmental difficulties.

Key activities this year included:

ACTIVITY	QTY	REMARKS
Distribution of Grocery kit to slums in Andheri	250 nos.	4 kg rice, 4 kg wheat, 2 kg sugar,2 kg tur dal & 2 lt soyabean oil
Donation of water purifier in Rahiyad village, Dahej	450 nos.	Distribution of water purifiers
Installation of children's playing equipment in public gardens at Rahiyad & Suva village	2 nos.	Children from 419 families benefited
Donation of furniture to Marine Police Station, Dahej	10 chairs	For visitors & staff

Distribution of water purifiers

Grocery kit distribution

Donation of equipments for Children's play area

AAROGYAM (URBAN AND RURAL

Health is a major focus for IsFon. Ignorance and poor nutrition are part and parcel of life in slums and in marginalized rural and tribal communities. Poverty makes things worse as the afflicted people cannot afford the cost of medical checkups and treatment.

For vulnerable populations in and around Pune city, and in the villages of Taloja MIDC, IsFon provides preventive health care services aimed at improving health and thereby the quality of life as well. Through health awareness programmes, proactive diagnosis and care, IsFon aims to:

- Assess and diagnose the health needs of individuals, families and communities
- Provide qualitative, preventive and curative health care to the community
- Provide doorstep healthcare services through Mobile Clinic
- Increase the focus on health promotion and prevention, screening and early intervention
- Improve access to health care services
- Reduce medical expenses through early detection of diseases of the needy

Key activities

IsFon started a collection Centre for pathological investigations at its office through a tie-up with N. M. Medicals. It serves as a convenient collection Centre for patents to avail pathological services at very nominal costs. All pathological investigations are covered under this initiative.

During the year, the facility was publicized via social media campaigns, and awarenessdrives were also carried out through doctors and other individuals.

Under Aarogyam, IsFon also went all out to render aid and assistance during the pandemic that paralyzed India and negatively impacted so many. Masks for health workers, ambulances for emergencies, hand sanitizers, PPE kits and food packets weredonated in huge numbers, while our mobile clinic service provided aid to numerous patents in and around villages near Pale, Taloja.

21,107 (Urban – 932 Rural – 20,175) Patents covered

ACTIVITIES CARRIED OUT DURIGNG PANDEMIC

Activity	Quantity	Collaborations
Donation of Ambulance	3 nos.	• Swami Ramanand Teerth Rural (SRTR) Govt. Medical College & Hospital, Ambajogai, Beed • JIIU Indian Institute of Medical Science, Warudi, Badnapur, Dist. Jalna • Panvel Municipal Corporation
installation of Oxygen Generator Plant	4 Nos.	• Shree Sardar Patel Jalalpore area, Tashkandnagar, Navsari, Gujrat • Sub District Hospital, Trimbakeshwar, Nashik, Maharashtra • Shri Shaneshwar Rural Charitable Hospital Shani Shingnapur, Tal. Newasa, Dist. Ahmednagar, Maharashtra • Meltron Hospital, Aurangabad Municipal Corporation, Maharashtra
Donation of Oxygen Concentrator	5 Nos.	• Mumbai Municipal Corporation
Distribution of COVID Kit at Nearby Villages of Taloja Plant	2800 Nos. Families	• One kit contains 500 ml sanitizer, 4 masks covering 9 villages around Taloja MIDC
Distribution of Hand Sanitizer	1000 litr	• Health Department (Govt. of Maharashtra) • Police Stations – Taloja, MIDC • Other Govt. offices
Vaccination for COVID	360 Nos.	• VAXALL • Sanchet, Jehangir, KEM and Usha Nursing Home
Awareness session for registration in CoWin App & Pranayam session	62 Nos.	• Conducted virtually by IsFon

ACTIVITIES CARRIED OUT DURIGNG PANDEMIC

GYANAM

The two-pronged goal comprises of:

- Creating a better school learning environment through various interventions
- Improving the overall quality of education

Activity	Quantity	Collaborations
Construction of Aanganwadi Classroom	01 Nos.	• Pale Khurd, Panvel • Benefiting 50 children
Setting up of digital class for Raigad Zilla Parishad schools	10 nos.	• Devichapada – 4, Padghe – 4, Dongryachapada – 2 • Conducted training of teachers to make them digital friendly • Benefiting 606 students
Providing Science Laboratory Equipment & Printer	01 nos.	• Madhymic Vidhyalay Chindran • Benefiting 175 student
Provided Sports Kit to RZP School, Chindran	01 nos.	• Benefiting 290 student
Appointment of Special Subject Teacher at Rahiyad Secondary and Higher Secondary school	01 nos.	• Appointed Special teachers for • Class 11 and 12 for Commerce subject for improving the learning out come • Benefiting 37 students
Infrastructure development in Rahiyad Primary Schools (Roof Sheet, etc.)	01 nos.	• Iron Roof Sheet installation in Rahiyad Primary school. This facility accommodates 265 school children for school activities • Benefiting 265 students
Arrange Safety Training programme under CSR-activity at Rahiyad Primary School	02 nos.	• Organized awareness programme on Home Safety for Class 6 to 8 Primary School students and Class 9 to 12 Secondary School students

PRESS CLIPPING

Fem

PARUL MEHTA

Founder And Trustee, Ishanya Foundation

WHY SHE MAKES OUR LIST:
She is dedicated to empowering women and uplifting the underprivileged by teaching them skillsets to become financially independent.

For as long as she can remember, Parul Mehta has always wanted to give back to society. She terms it a 'value' she grew up with, indulging in social services when she was a part of the student council body in her college years. Once when an old, poor lady showered gratitude on her for helping her get a cataract operation done for free, Mehta realised that a trivial aid could massively impact a needy person's life. She thus decided her life path – to dedicate her life for the betterment of the underprivileged. Completing an Authentic Leadership Development programme from Harvard Business School in 2014 and a BA in Sitar, Mehta, upon her return to India, visited NGOs in and around Pune to understand the sectors that were being catered to. Over time, she realised that donating is not the way forward, empowering is. "It's easy to give a cheque or a donation, but we should work towards making the underprivileged independent. If you teach them a skill, you are educating them for a better life," she says. Thus was born Ishanya Foundation, Pune.

The foundation conducts outreach programmes for women empowerment, for livelihood, health and education, in and around Pune, and also in villages around Taloja in Raigad district. The foundation also teaches women soft skills. Furthermore, farmers and their wives are also helped at the same time. Mentorship programmes are also run where individuals who rise in skills and become financially independent, teach the others.

Pune Mirror

Wrapped into bags

Shubhada Phadke recycles foil wrappers to create attractive handbags after a friend in Australia introduced her to this intricate art

Shop till you drop

Artisans from across the country bring you some of their finest work as the festive season sets in

Agrowon News

'महाधन'तर्फे बदनापूर येथील रुग्णालयाला रुग्णवाहिका भेट

पुणे : कोरोना संक्रमण काळात ग्रामीण भागातील रुग्णांना येणाऱ्या अडचणींची दखल घेत महाधन ब्रँडअंतर्गत रासायनिक खत उत्पादन करणारी अग्रगण्य कंपनी दीपक फर्टिलायझर्स अँड पेट्रोकेमिकल्स कॉर्पोरेशन लिमिटेडतर्फे सामाजिक बांधिलकीच्या भावनेतून बदनापूर (जि.जालना) येथील अखिल भारतीय आयुर्विज्ञान संस्थेद्वारे संचालित नूर रुग्णालयास एक अद्ययावत रुग्णवाहिका देणगी स्वरूपात देण्यात आली.

कंपनीचे कार्यकारी उपाध्यक्ष नरेश देशमुख यांना या उपक्रमासाठी पुढाकार घेतला होता. दीपक फर्टिलायझर्सची १०० टक्के सार्वजनिक मालकी असलेली स्मार्टकेम टेक्नॉलॉजीज लिमिटेड या सहायक कंपनीची महाधन खते लोकप्रिय आहेत.या कंपनीचा वारा राज्यांमध्ये विस्तार असून सुमारे १५,००० च्या वर विक्रेते आहेत. विभागीय कृषी सहसंचालक डी.एल.जाधव यांच्या हस्ते ही रुग्णवाहिका नूर रुग्णालयाचे अधिष्ठाता डॉ. अजहर सिद्दिकी यांच्याकडे सुपूर्द करण्यात आली. यावेळी महाधन कंपनीचे महाव्यवस्थापक हणमंतराव भिसे, सहायक महाव्यवस्थापक प्रमोद गिन्हेपुजे ,वरिष्ठ व्यवस्थापक आझम शाह, महेश चोडखे, प्रकाश गुंजाळ तसेच जिल्ह्यातील महाधन खत विक्रेते उपस्थित होते.

महाधन कंपनीतर्फे अंबाजोगाई येथील स्वामी रामानंदतीर्थ ग्रामीण शासकीय वैद्यकीय महाविद्यालयास एक रुग्णवाहिका तसेच औरंगाबाद, नाशिक व नगर येथील शासकीय कोविड केंद्राला ऑक्सिजन निर्मिती संयंत्राची देणगी स्वरूपात भेट देण्यात आल्याचे कंपनीतर्फे कळविण्यात आले आहे.

बदनापूर, जि. जालना : 'महाधन'तर्फे नूर रुग्णालयास एक अद्ययावत रुग्णवाहिका भेट देताना मान्यवर.

प्रजासत्ताकदिनी वाडीधारकांना मिळाले जलउपसा सिंचन साहित्य

Divya Bhaskar

દિપક ફર્ટિલાઇઝર્સ કંપનીએ રહિયાદ પ્રાથમિક શાળામાં પતરા બેસાડવામાં આવ્યાં

Ishanya Foundation

Utilization Certificates for CSR Expenditure for FY 21-22

Name of the Project	Deepak Fertilizers & Petrochemicals Corporation Ltd.	Smartchem Technologies Ltd.	Performance Chemiserve Ltd.	Nova Synthetic Ltd.	Priyank Mercantile Ltd.	Total
Vocational Skill Development Project	1,779,000	4,426,841		84,000	617,000	**6,906,841**
Livelihood Enhancement Through Entrepreneurship Development	940,000	1,778,798	610,000			**3,328,798**
Dairy Development Project	309,000	532,249				**841,249**
WADI Project	886,000	1,373,368				**2,259,368**
Aarogyam- Health Initiatives	7,245,000	12,025,257				**19,270,257**
Gyanam- Educational Initiatives	1,254,000	3,027,496				**4,281,496**
Community Development and Social Welfare Project	887,000	1,309,020				**2,196,020**
Total Amt.Rs.	**13,300,000**	**24,473,029**	**610,000**	**84,000**	**617,000**	**39,084,029**

Please do not

Form for Uploading Compliance Report

Proposal No :	IA/MH/IND/20035/2006	**Proposal Name :**	Iso Propyl Alcohol (IPA 70,000 MPTA)Project at MIDC Area
Category :	Industrial Projects - 1	**MoEF File No. :**	J-11011/218/2004

Compliance Letter/Report

PARIVESH परिवेश

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Government of India

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For any Technical support, Please Contact EFCCID, NIC, New Delhi, monitoring-fc(at)nic(dot)in