DEEPAK FERTILISERS
AND PETROCHEMICALS
CORPORATION LIMITED

DFPCL-K1/EHS/Env/2020-21/01

Date: 25th May 2020

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-2019 to March -2020**.

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. Rs. 25,000 for plantation Year 2008-09 Rs. 25,000 for plantation Year 2009-10 Rs. 12,000 for plantation Year 2010-11 Rs. 50,000 for plantation Year 2011-12 for Plot K-1 to K-8. Year 2012-13 for Plot K-1 to K-8. 1)₹Rs 10 lakhs for plantation. **Year 2013-14 for Plot K-1 to K-8**. 1)₹Rs 5 lakhs for plantation. **Year 2014-15 for Plot K-1 to K-8**. 1)₹Rs 5 lakhs for plantation. 2)₹Rs 1.5 lakhs- Weather Monitoring Station. **Year 2015-16 for Plot K-1 to K-8**. 1)₹Rs 5 lakhs for plantation. **Year 2016-17 for Plot K-1 to K-8**. 1)₹Rs 5 lakhs for plantation. 2)₹Rs 3.9 lakhs - AMC for Online Emission & Effluent Quality Monitoring System. **Year 2017-18 for Plot K-1 to K-8**. 1)₹Rs 48 lakhs for plantation 2)₹Rs 3.9 lakhs - AMC for Online Emission & Effluent Quality Monitoring System. **Year 2018-19 for Plot K-1 to K-8**. 1)₹Rs 20.68 lakhs for plantation year 2018-19 for Plot K-1 to K-8. 2)₹Rs 3.9 lakhs - AMC for Online Emission & Effluent Quality Monitoring System. 3)₹Rs 1 Crores – Diversion of positive discharge of treated effluent line from old to new MIDC chamber.
	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.	
	f.	Actual expenditure incurred on the environmental management plans so far	
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 Clarifloculator 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 Weak 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 ammnonical 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 m^3/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 incrernental 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 religosa	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	Cedrreia toona	Mahanim
2	Dalbergia sissoo	Shisham
3	Azadirachta indica	Neem
4	Delonix regia	Gul mohr
5	Millingtonia hortensis	Aksh nim
6	Miomosops elengi	Maulsari
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	Callistemon 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	Beng
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

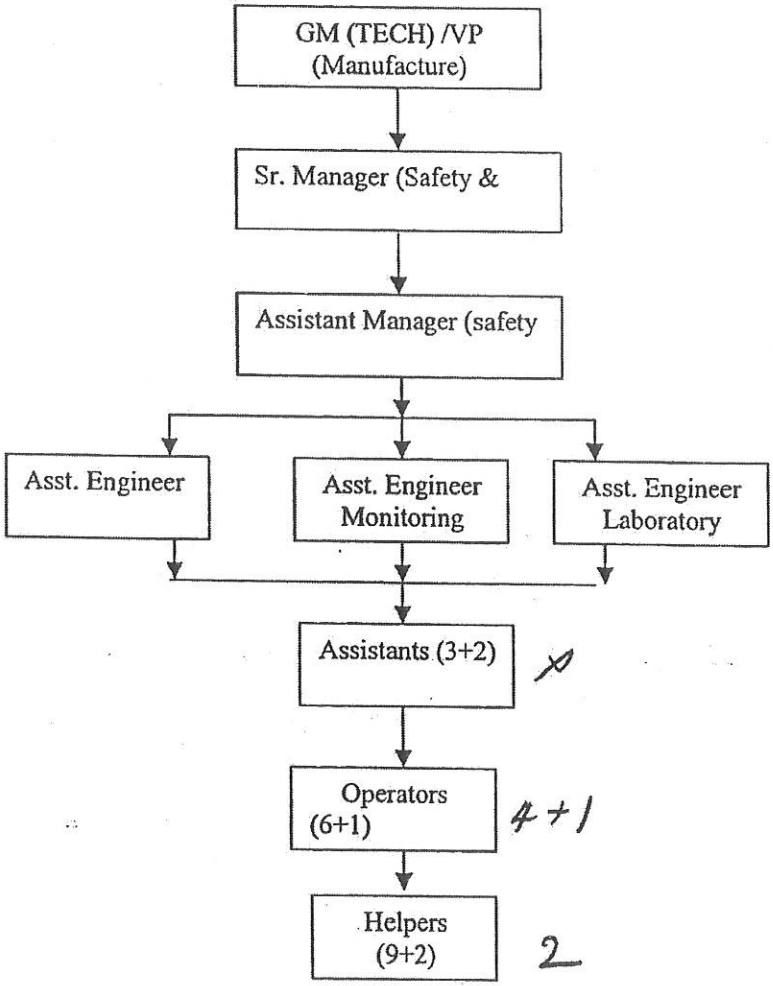

Figure 5.3 Environmental Management Cell

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 31/03/2020**
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)	AAQ 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.	Water requirement doesn't exceed. We have developed better method of utilization of the RO by processing MIDC RW, this has reduced inlet effluent to ETP by more than 600 m3/day thus meeting requirements of recycling 500 m3/day and 100 m3/day Treated effluent. Treated effluent of 100 m3/day is utilized in the NPK process. As a part of water conservation waste water of the plants is utilized to reduce fresh water consumption.
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)**

SN	Specific Conditions	Status of compliance as on 31/03/2020
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. A letter No. DFPCL-K1/EHS/ENV/2019-20/28, dt. 18 feb 2020, in this connection was also sent to MPCB. 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 30/09/2020, 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 & 4 plants.
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. Around 31 % of plot area is developed as Green belt. Addtional MIDC plot next to our premises is being aquired from MIDC to develop green belt which will meet the requirment of 33% green blet. In addition to this, green belt on 50 acre of degraded forest land is also developed at Dhavdi Village, near Dombivali, ~ 12-15 kms away from our site.
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 31/03/2020**
i)	Project authorities shall strictly adhere to the stipulations made by the MPCB	Complied with.
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.

SN	General Conditions	Status of compliance as on 31/03/2020
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 six 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.	Fund is utilized for implementation of environmental safeguard.
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**)

SN	General Conditions	Status of compliance as on 31/03/2020
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 2019. 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
xii)	The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.	Noted
xiii)	The Ministry reserves the right to stipulate additional conditions, if found necessary. The company in a time bound manner will implement these conditions.	Noted
xiv)	The above conditions shall be enforced, inter-alia under the provisions of the Water (Prevention and Control of Pollution) Act, 1974, the Environment (Protection) Act, 1986, Hazardous Wates (Management and Handling) Rules, 2003 and the Public Liability Insurance Act, 1991 along with their amendments and rules.	Noted

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

Netel (India) Limited

STACK MONITORING REPORT

Name of Organization	: M/s. Deepak Fertilisers And Petrochemicals Corporation Limited.
Customer Address	: Taloja Plant Plot K-1, MIDC Industrial Area, P.O. Taloja Dist. Raigad 410208 Maharashtra
Customer Reference	: Work Order no. 4800055893, Dated 24.07.2019

Date of Sampling	Sample Received Date	Analysis Start Date	Analysis Complete Date	Report on Date
24.10.2019	25.10.2019	25.10.2019	28.10.2019	28.10.2019

Sample Type	: Flue Gas (Stack)	Sampling done by	: Netel (India) Limited
Stack Connected to	: NPK Train-1	Stack Diameter	: 2772 mm
Sampling Location	: NPK Train-1	Sample Code	: NIL/ST/10/19/038

Sr. No.	Parameters	Method	Unit	MDL*	Results	Consent Limits
1	Temperature	IS 11255 (Part 3)	°C	---	57.0	---
2	Velocity of Gas	IS 11255 (Part 3)	m/sec	---	12.2	---
3	Volumetric Flow Rate	IS 11255 (Part 3)	Nm^3/hr	---	235039	---
4	Total Particulate Matter	IS 11255 (Part 1)	mg/Nm^3	3	18.6	150
			kg/day	---	104.521	---
5	Ammonia	IS 11255 (Part 6)	mg/Nm^3	0.05	13.3	---
			ppm	---	19.85	50
			kg/hr	---	4.666	---
6	Fluoride	IS 11255 (Part 5)	mg/Nm^3	0.25	BDL	25
			ppm	---	BDL	---
			kg/day	---	BDL	---

Note :

1. * MDL – Minimum Detectible Limit.
2. ** BDL – Below Detectible Limit.
3. This Test Report shall not be reproduced except in full, without written approval of the Laboratory.
4. This Test Report refers only to the sample tested.
5. The Complaint Register is available with the Laboratory as per Environment Protection Act,1986.

Verified by:

Surekha Jamdar
Dy. Technical Manager

Issued by:

Shraddha Kere
Technical Manager

End of Report

Netel (India) Limited

STACK MONITORING REPORT

Name of Organization	: M/s. Deepak Fertilisers And Petrochemicals Corporation Limited.
Customer Address	: Taloja Plant Plot K-1, MIDC Industrial Area, P.O. Talcja Dist. Raigad 410208 Maharashtra
Customer Reference	: Work Order no. 4800055893, Dated 24.07.2019

Date of Sampling	Sample Received Date	Analysis Start Date	Analysis Complete Date	Report on Date
24.10.2019	25.10.2019	25.10.2019	28.10.2019	28.10.2019

Sample Type	: Flue Gas (Stack	Sampling done by	: Netel (India) Limited
Stack Connected to	: ANP Cyclone Separator	Stack Diameter	: 1500 mm
Sampling Location	: ANP Dedusting Unit (Cyclone Separator)	Sample Code	: NIL/ST/10/19/039

Sr. No.	Parameters	Method	Unit	MDL*	Results	Consent Limits
1	Temperature	IS 1255 (Part 3)	°C	---	**56.0**	---
2	Velocity of Gas	IS 1255 (Part 3)	m/sec	---	**11.7**	---
3	Volumetric Flow Rate	IS 1255 (Part 3)	Nm^3/hr	---	**63759**	---
4	Total Particulate Matter	IS 1255 (Part 1)	mg/Nm^3	3	**28.8**	150
			kg/day	---	**44.070**	---
1	Ammonia	IS 1255 (Part 6)	mg/Nm^3	0.05	**19.3**	---
			ppm	---	**27.76**	50
			kg/hr	---	**1.770**	---
1	Fluoride	IS 1255 (Part 5)	mg/Nm^3	0.25	**5.6**	25
			ppm	---	**7.21**	---
			kg/day	---	**8.569**	---

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5. The Complaint Register is available with the Laboratory as per Environment Protection Act,1986.

Verified by:

Surekha Jamdar
Dy. Technical Manager

Issued by:

Shraddha Kere
Technical Manager

End of Report

Netel (India) Limited

STACK MONITORING REPORT

Name of Organization	: M/s. Deepak Fertilisers And Petrochemicals Corporation Limited.
Customer Address	: Taloja Plant Plot K-1, MIDC Industrial Area, P.O. Taloja Dist. Raigad 410208 Maharashtra
Customer Reference	: Work Order no. 4800055893, Dated 24.07.2019

Date of Sampling	Sample Received Date	Analysis Start Date	Analysis Complete Date	Report on Date
24.10.2019	25.10.2019	25.10.2019	28.10.2019	28.10.2019

Sample Type	: Flue Gas (Stack)	Sampling done by	: Netel (India) Limited
Stack Connected to	: ANP Vaccum Pumps	Stack Diameter	: 200 mm
Sampling Location	: ANP Vaccum Pumps	Sample Code	: NIL/ST/ 0/19/040

Sr. No.	Parameters	Method	Unit	MDL*	Results	Consent Limits
1	Temperature	IS 11255 (Part 3)	°C	---	47.0	---
2	Velocity of Gas	IS 11255 (Part 3)	m/sec	---	3.7	---
3	Volumetric Flow Rate	IS 11255 (Part 3)	Nm³/hr	---	3548	---
4	Total Particulate Matter	IS 11255 (Part 1)	mg/Nm³	3	13.9	150
			kg/day	---	0.758	---
1	Ammonia	IS 11255 (Part 6)	mg/Nm³	0.05	7.6	---
			ppm	---	10.93	50
			kg/hr	---	0.039	---
1	Fluoride	IS 11255 (Part 5)	mg/Nm³	0.25	6.8	25
			ppm	---	8.75	---
			kg/day	---	0.579	---

Note :

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Verified by:

Surekha Jamdar
Dy. Technical Manager

Issued by:

Shraddha Kere
Technical Manager

End of Report

Netel (India) Limited

STACK MONITORING REPORT

Name of Organization	: M/s. Deepak Fertilisers And Petrochemicals Corporation Limited.
Customer Address	: Taloja Plant Plot K-1, MIDC Industrial Area, P.O. Taloja Dist. Raigad 410208 Maharashtra
Customer Reference	: Work Order no 4800055893, Dated 24.07.2019

Date of Sampling	Sample Received Date	Analysis Start Date	Analysis Complete Date	Report on Date
24.10.2019	25.10.2019	25.10.2019	28.10.2019	28.10.2019

Sample Type	: Flue Gas (Stack)	Sampling done by	: Netel (India) Limited
Stack Connected to	: ---	Stack Diameter	: 1655 mm
Sampling Location	: ANP Prilling Tower	Sample Code	: NIL/ST/10/19/041

Sr. No.	Parameters	Method	Unit	MDL*	Results	Consent Limits
1	Temperature	IS 11255 (Part 3)	°C	---	**41.0**	---
2	Velocity of Gas	IS 11255 (Part 3)	m/sec	---	**30.8**	---
3	Volumetric Flow Rate	IS 11255 (Part 3)	Nm^3/hr	---	**222538**	---
4	Total Particulate Matter	IS 11255 (Part 1)	mg/Nm^3	3	**19.2**	150
			kg/day	---	**102.546**	---
1	Ammonia	IS 11255 (Part 6)	mg/Nm^3	0.05	**8.2**	---
			ppm	---	**11.79**	50
			kg/hr	---	**2.624**	---
1	Fluoride	IS 11255 (Part 5)	mg/Nm^3	0.25	**BDL**	25
			ppm	---	**BDL**	---
			kg/day	---	**BDL**	---

Note :

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Verified by:

Surekha Jamdar
Dy. Technical Manager

Issued by:

Shraddha Kere
Technical Manager

End of Report

Netel (India) Limited

STACK MONITORING REPORT

Name of Organization	: M/s. Deepak Fertilisers And Petrochemicals Corporation Limited.
Customer Address	: Taloja Plant Plot K-1, MIDC Industrial Area, P.O. Taloja Dist. Raigad 410208 Maharashtra
Customer Reference	: Work Order no. 4800055893, Dated 24.07.2019

Date of Sampling	Sample Received Date	Analysis Start Date	Analysis Complete Date	Report on Date
19.12.2019	20.12.2019	20.12.2019	23.12.2019	23.12.2019

Sample Type	: Flue Gas (Stack)	Sampling done by	: Netel (India) Limited
Stack Connected to	: ---	Stack Diameter	: 953 mm
Sampling Location	: WNA - 1	Sample Code	: NIL/ST/12/19/039

Sr. No.	Parameters	Method	Unit	MDL*	Results	Consent Limits
1	Temperature	IS 11255 (Part 3)	°C	---	**60.0**	---
2	Velocity of Gas	IS 11255 (Part 3)	m/sec	---	**2.06**	---
3	Volumetric Flow Rate	IS 11255 (Part 3)	Nm^3/hr	---	**4721**	---
4	Oxides of Nitrogen	IS 11255 (Part 6)	mg/Nm^3	3	**157.3**	---
			ppm	---	**83.6**	---
			kg/day	---	**17.823**	---
			kg/ton of WNA	---	**0.0710**	3
5	Ammonia	IS 11255 (Part 6)	mg/Nm^3	0.05	**19.30**	---
			ppm	---	**13.42**	---
			kg/hr	---	**0.0634**	3

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Dy. Technical Manager

Issued by:

Shraddha Kere
Technical Manager

End of Report

Netel (India) Limited

STACK MONITORING REPORT

Name of Organization	: M/s. Deepak Fertilisers And Petrochemicals Corporation Limited.
Customer Address	: Taloja Plant Plot K-1, MIDC Industrial Area, P.O. Taloja Dist. Raigad 410208 Maharashtra
Customer Reference	: Work Order no. 4800055893, Dated 24.07.2019

Date of Sampling	Sample Received Date	Analysis Start Date	Analysis Complete Date	Report on Date
19.12.2019	20.12.2019	20.12.2019	23.12.2019	23.12.2019

Sample Type	: Flue Gas (Stack)	Sampling done by	: Netel (India) Limited
Stack Connected to	: ---	Stack Diameter	: 953 mm
Sampling Location	: WNA - 2	Sample Code	: NIL/ST/12/19/040

Sr. No.	Parameters	Method	Unit	MDL*	Results	Consent Limits
1	Temperature	IS 11255 (Part 3)	°C	---	**58.0**	---
2	Velocity of Gas	IS 11255 (Part 3)	m/sec	---	**2.25**	---
3	Volumetric Flow Rate	IS 11255 (Part 3)	Nm^3/hr	---	**5188**	---
4	Oxides of Nitrogen	IS 11255 (Part 6)	mg/Nm^3	3	**178.9**	---
			ppm	---	**95.1**	---
			kg/day	---	**22.275**	---
			kg/ton of WNA	---	**0.0779**	3
1	Ammonia	IS 11255 (Part 6)	mg/Nm^3	0.05	**21.10**	---
			ppm	---	**14.67**	---
			kg/hr	---	**0.0761**	3

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Issued by:

Shraddha Kere
Technical Manager

End of Report

Netel (India) Limited

STACK MONITORING REPORT

Name of Organization	: M/s. Deepak Fertilisers And Petrochemicals Corporation Limited.
Customer Address	: Taloja Plant Plot K-1, MIDC Industrial Area, P.O. Taloja Dist. Raigad 410208 Maharashtra
Customer Reference	: Work Order no. 4800055893, Dated 24.07.2019

Date of Sampling	Sample Received Date	Analysis Start Date	Analysis Complete Date	Report on Date
19.12.2019	20.12.2019	20.12.2019	23.12.2019	23.12.2019

Sample Type	: Flue Gas (Stack)	Sampling done by	: Netel (India) Limited
Stack Connected to	: ---	Stack Diameter	: 953 mm
Sampling Location	: WNA - 3	Sample Code	: NIL/ST/12/19/041

Sr. No.	Parameters	Method	Unit	MDL*	Results	Consent Limits
1	Temperature	IS 11255 (Part 3)	°C	---	**142.0**	---
2	Velocity of Gas	IS 11255 (Part 3)	m/sec	---	**2.30**	---
3	Volumetric Flow Rate	IS 11255 (Part 3)	Nm^3/hr	---	**4229**	---
4	Oxides of Nitrogen	IS 11255 (Part 6)	mg/Nm^3	3	**182.9**	---
			ppm	---	**97.2**	---
			kg/day	---	**18.564**	---
			kg/ton of WNA	---	**0.0670**	3
1	Ammonia	IS 11255 (Part 6)	mg/Nm^3	0.05	**17.60**	---
			ppm	---	**12.24**	---
			kg/hr	---	**0.0518**	3

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Surekha Jamdar
Dy. Technical Manager

Issued by:

Shraddha Kere
Technical Manager

End of Report

Netel (India) Limited

STACK MONITORING REPORT

Name of Organization	: M/s. Deepak Fertilisers And Petrochemicals Corporation Limited.
Customer Address	: Taloja Plant Plot K-1, MIDC Industrial Area, P.O. Taloja Dist. Raigad 410208 Maharashtra
Customer Reference	: Work Order no. 4800055893, Dated 24.07.2019

Date of Sampling	Sample Received Date	Analysis Start Date	Analysis Complete Date	Report on Date
19.12.2019	20.12.2019	20.12.2019	23.12.2019	23.12.2019

Sample Type	: Flue Gas (Stack)	Sampling done by	: Netel (India) Limited
Stack Connected to	: ---	Stack Diameter	: 953 mm
Sampling Location	: WNA - 4	Sample Code	: NIL/ST/12/19/042

Sr. No.	Parameters	Method	Unit	MDL*	Results	Consent Limits
1	Temperature	IS 11255 (Part 3)	°C	---	**128.0**	---
2	Velocity of Gas	IS 11255 (Part 3)	m/sec	---	**2.48**	---
3	Volumetric Flow Rate	IS 11255 (Part 3)	Nm^3/hr	---	**4720**	---
4	Oxides of Nitrogen	IS 11255 (Part 6)	mg/Nm^3	3	**226.3**	---
			ppm	---	**120.3**	---
			kg/day	---	**25.635**	---
			kg/ton of WNA	---	**0.0618**	3
1	Ammonia	IS 11255 (Part 6)	mg/Nm^3	0.05	**22.80**	---
			ppm	---	**15.85**	---
			kg/hr	---	**0.0748**	3

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Surekha Jamdar
Dy. Technical Manager

Issued by:

Shraddha Kere
Technical Manager

End of Report

Netel (India) Limited

STACK MONITORING REPORT

Name of Organization	: M/s. Deepak Fertilisers And Petrochemicals Corporation Limited.
Customer Address	: Taloja Plant Plot K-1, MIDC Industrial Area, P.O. Taloja Dist. Raigad 410208 Maharashtra
Customer Reference	: Work Order no. 4800055893, Dated 24.07.2019

Date of Sampling	Sample Received Date	Analysis Start Date	Analysis Complete Date	Report on Date
31.12.2019	02.01.2020	02.01.2020	04.01.2020	06.01.2020

Sample Type	: Process (Stack)	Sampling done by	: Netel (India) Limited
Stack Connected to	: LDAN Prilling Tower	Stack Diameter	: 1632 mm
Sampling Location	: LDAN Prilling Tower	Sample Code	: NIL/ST/12/19/068

Sr. No.	Parameters	Method	Unit	MDL*	Results	Consent Limits
1	Temperature	IS 11255 (Part 3)	°C	---	**57.0**	---
2	Velocity of Gas	IS 11255 (Part 3)	m/sec	---	**2.12**	---
3	Volumetric Flow Rate	IS 11255 (Part 3)	Nm^3/hr	---	**14340**	---
4	Particulate Matter	IS 11255 (Part 1)	mg/Nm^3	3	**5.9**	100
			kg/day	---	**2.031**	---
5	Ammonia	IS 11255 (Part 6)	mg/Nm^3	0.05	**10.1**	---
			ppm	---	**14.50**	50
			kg/hr	---	**0.1448**	---

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Surekha Jamdar
Dy. Technical Manager

Issued by:

Shraddha Kere
Technical Manager

End of Report

Netel (India) Limited

STACK MONITORING REPORT

Name of Organization	: M/s. Deepak Fertilisers And Petrochemicals Corporation Limited.
Customer Address	: Taloja Plant Plot K-1, MIDC Industrial Area, P.O. Taloja Dist. Raigad 410208 Maharashtra
Customer Reference	: Work Order no. 4800055893, Dated 24.07.2019

Date of Sampling	Sample Received Date	Analysis Start Date	Analysis Complete Date	Report on Date
31.12.2019	02.01.2020	02.01.2020	04.01.2020	06.01.2020

Sample Type	: Process (Stack)	Sampling done by	: Netel (India) Limited
Stack Connected to	: LDAN Scrubber	Stack Diameter	: 1500 mm
Sampling Location	: LDAN Scrubber	Sample Code	: NIL/ST/12/19/070

Sr. No.	Parameters	Method	Unit	MDL*	Results	Consent Limits
1	Temperature	IS 11255 (Part 3)	°C	---	**56.0**	---
2	Velocity of Gas	IS 11255 (Part 3)	m/sec	---	**1.84**	---
3	Volumetric Flow Rate	IS 11255 (Part 3)	Nm^3/hr	---	**10546**	---
4	Particulate Matter	IS 11255 (Part 1)	mg/Nm^3	3	**7.7**	100
			kg/day	---	**1.949**	---
5	Ammonia	IS 11255 (Part 6)	mg/Nm^3	0.05	**7.5**	---
			ppm	---	**10.77**	50
			kg/hr	---	**0.0791**	---

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Verified by:

Surekha Jamdar
Dy. Technical Manager

Issued by:

Shraddha Kere
Technical Manager

End of Report

W-408, Rabale MIDC,
TTC Industrial Area,
NAVI MUMBAI - 400 701.
INDIA.

Tel. : + 91 022 2760 7102 / 2760 7103
Fax : + 91 022 2760 7100

E-mail : sales@netel-india.com
Website : www.netel-india.com
CIN : U74999MH2003PLC142228

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Regd. office : Liberty Building, 3rd Floor, Sir Vithaldas Thackersey Marg, (New Marine Lines), Mumbai - 400 020. Tel. : 22066231 / 61

Netel (India) Limited

STACK MONITORING REPORT

Name of Organization	: M/s. Deepak Fertilisers And Petrochemicals Corporation Limited.
Customer Address	: Taloja Plant Plot K-1, MIDC Industrial Area, P.O. Taloja Dist. Raigad 410208 Maharashtra
Customer Reference	: Work Order no. 4800055893, Dated 24.07.2019

Date of Sampling	Sample Received Date	Analysis Start Date	Analysis Complete Date	Report on Date
31.12.2019	02.01.2020	02.01.2020	04.01.2020	06.01.2020

Sample Type	: Process (Stack)	Sampling done by	: Netel (India) Limited
Stack Connected to	: GP Vent	Stack Diameter	: 640 mm
Sampling Location	: GP Vent	Sample Code	: NIL/ST/12/19/069

Sr. No.	Parameters	Method	Unit	MDL*	Results	Consent Limits
1	Temperature	IS 11255 (Part 3)	°C	---	**41.0**	---
2	Velocity of Gas	IS 11255 (Part 3)	m/sec	---	**1.88**	---
3	Volumetric Flow Rate	IS 11255 (Part 3)	Nm^3/hr	---	**2058**	---
4	Particulate Matter	IS 11255 (Part 1)	mg/Nm^3	3	**9.3**	100
			kg/day	---	**0.459**	---
5	Ammonia	IS 11255 (Part 6)	mg/Nm^3	0.05	**8.8**	---
			ppm	---	**12.63**	50
			kg/hr	---	**0.0181**	---

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Tel. : + 91 022 2760 7102 / 2760 7103
Fax : + 91 022 2760 7100

E-mail : sales@netel-india.com
Website : www.netel-india.com

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Netel (India) Limited

STACK MONITORING REPORT

Name of Organization	: M/s. Deepak Fertilisers And Petrochemicals Corporation Limited.
Customer Address	: Taloja Plant Plot K-1, MIDC Industrial Area, P.O. Taloja Dist. Raigad 410208 Maharashtra
Customer Reference	: Work Order no. 4800055893, Dated 24.07.2019

Date of Sampling	Sample Received Date	Analysis Start Date	Analysis Complete Date	Report on Date
24.12.2019	25.12.2019	25.12.2019	28.12.2019	28.12.2019

Sample Type	: Process Gas (Stack)	Sampling done by	: Netel (India) Limited
Stack Connected to	: CNA-3	Stack Diameter	: 75 mm
Sampling Location	: CNA-3	Sample Code	: NIL/ST/12/19/060

Sr. No.	Parameters	Method	Unit	MDL*	Results	Consent Limits
1	Temperature	IS 11255 (Part 3)	°C	---	**46.0**	---
2	Velocity of Gas	IS 11255 (Part 3)	m/sec	---	**2.21**	---
3	Volumetric Flow Rate	IS 11255 (Part 3)	Nm^3/hr	---	**32.71**	---
4	Oxides of Nitrogen	IS 11255 (Part 6)	mg/Nm^3	3	**53.7**	---
			ppm	---	**28.3**	50
			kg/day	---	**0.012**	---
5	Ammonia	IS 11255 (Part 6)	mg/Nm^3	0.05	**26.40**	---
			ppm	---	**18.36**	---
			kg/hr	---	**0.0006**	---

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Technical Manager

End of Report

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Customer Address	: Taloja Plant Plot K-1, MIDC Industrial Area, P.O. Taloja Dist. Raigad 410208 Maharashtra
Customer Reference	: Work Order no. 4800055893, Dated 24.07.2019

Date of Sampling	Sample Received Date	Analysis Start Date	Analysis Complete Date	Report on Date
20.12.2019	21.12.2019	21.12.2019	24.12.2019	24.12.2019

Sample Type	: Flue Gas (Stack)	Sampling done by	: Netel (India) Limited
Stack Connected to	: Boiler	Stack Diameter	: 1500
Sampling Location	: CES-A Engine Exhaust Boiler	Sample Code	: NIL/ST/12/19/043

Sr. No.	Parameters	Method	Unit	MDL*	Results	Consent Limits
1	Stack Temperature	IS 11255 (Part 3)	°C	---	180	---
2	Stack Gas Velocity	IS 11255 (Part 3)	m/sec	---	8.63	---
3	Volumetric Flow Rate	IS 11255 (Part 3)	Nm^3/hr	---	35859	---
4	Sulphur Dioxide	IS 11255 (Part 2)	mg/Nm^3	3	3.9	---
			ppm	---	1.5	---
			kg/day	---	3.36	---
5	Oxides of Nitrogen	IS 11255 (Part 7)	mg/Nm^3	3	10.2	---
			ppm	---	5.4	50
			kg/day	---	8.78	---
6	Carbon Monoxide	USEPA – 10A	mg/Nm^3	4	16.7	---
			ppm	---	14.6	---
			kg/day	---	14.37	---

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Surekha Jamdar
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Technical Manager

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Netel (India) Limited

STACK MONITORING REPORT

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Customer Address	: Taloja Plant Plot K-1, MIDC Industrial Area, P.O. Taloja Dist. Raigad 410208 Maharashtra
Customer Reference	: Work Order no. 4800055893, Dated 24.07.2019

Date of Sampling	Sample Received Date	Analysis Start Date	Analysis Complete Date	Report on Date
20.12.2019	21.12.2019	21.12.2019	24.12.2019	24.12.2019

Sample Type	: Flue Gas (Stack)	Sampling done by	: Netel (India) Limited
Stack Connected to	: Boiler	Stack Diameter	: 1500
Sampling Location	: CES-B Engine Exhaust Boiler	Sample Code	: NIL/ST/12/19/044

Sr. No.	Parameters	Method	Unit	MDL*	Results	Consent Limits
1	Stack Temperature	IS 11255 (Part 3)	°C	---	176	---
2	Stack Gas Velocity	IS 11255 (Part 3)	m/sec	---	9.18	---
3	Volumetric Flow Rate	IS 11255 (Part 3)	Nm^3/hr	---	38484	---
4	Sulphur Dioxide	IS 11255 (Part 2)	mg/Nm^3	3	4.1	---
			ppm	---	1.6	---
			kg/day	---	3.79	---
5	Oxides of Nitrogen	IS 11255 (Part 7)	mg/Nm^3	3	11.5	---
			ppm	---	6.1	50
			kg/day	---	10.62	---
6	Carbon Monoxide	USEPA – 10A	mg/Nm^3	4	17.3	---
			ppm	---	15.1	---
			kg/day	---	15.98	---

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Technical Manager

End of Report

Netel (India) Limited

STACK MONITORING REPORT

Name of Organization	: M/s. Deepak Fertilisers And Petrochemicals Corporation Limited.
Customer Address	: Taloja Plant Plot K-1, MIDC Industrial Area, P.O. Taloja Dist. Raigad 410208 Maharashtra
Customer Reference	: Work Order no. 4800055893, Dated 24.07.2019

Date of Sampling	Sample Received Date	Analysis Start Date	Analysis Complete Date	Report on Date
20.12.2019	21.12.2019	21.12.2019	24.12.2019	24.12.2019

Sample Type	: Flue Gas (Stack)	Sampling done by	: Netel (India) Limited
Stack Connected to	: Reformer	Stack Diameter	: 1373
Sampling Location	: Ammonia Primary Reformer	Sample Code	: NIL/ST/12/19/045

Sr. No.	Parameters	Method	Unit	MDL*	Results	Consent Limits
1	Stack Temperature	IS 11255 (Part 3)	°C	---	166	---
2	Stack Gas Velocity	IS 11255 (Part 3)	m/sec	---	9.56	---
3	Volumetric Flow Rate	IS 11255 (Part 3)	Nm^3/hr	---	34339	---
4	Sulphur Dioxide	IS 11255 (Part 2)	mg/Nm^3	3	6.4	---
			ppm	---	2.4	---
			kg/day	---	5.27	---
5	Oxides of Nitrogen	IS 11255 (Part 7)	mg/Nm^3	3	8.7	---
			ppm	---	4.6	50
			kg/day	---	7.17	---
6	Carbon Monoxide	USEPA – 10A	mg/Nm^3	4	11.9	---
			ppm	---	10.4	---
			kg/day	---	9.81	---

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Issued by:

Shraddha Kere
Technical Manager

End of Report

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NAVI MUMBAI - 400 701.
INDIA.

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Fax : + 91 022 2760 7100

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Netel (India) Limited

STACK MONITORING REPORT

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Customer Address	: Taloja Plant Plot K-1, MIDC Industrial Area, P.O. Taloja Dist. Raigad 410208 Maharashtra
Customer Reference	: Work Order no. 4800055893, Dated 24.07.2019

Date of Sampling	Sample Received Date	Analysis Start Date	Analysis Complete Date	Report on Date
20.12.2019	21.12.2019	21.12.2019	24.12.2019	24.12.2019

Sample Type	: Flue Gas (Stack)	Sampling done by	: Netel (India) Limited
Stack Connected to	: Boiler	Stack Diameter	: 1500
Sampling Location	: HRSG 5	Sample Code	: NIL/ST/12/19/046

Sr. No.	Parameters	Method	Unit	MDL*	Results	Consent Limits
1	Stack Temperature	IS 11255 (Part 3)	°C	---	108	---
2	Stack Gas Velocity	IS 11255 (Part 3)	m/sec	---	10.84	---
3	Volumetric Flow Rate	IS 11255 (Part 3)	Nm^3/hr	---	53533	---
4	Sulphur Dioxide	IS 11255 (Part 2)	mg/Nm^3	3	5.5	---
			ppm	---	2.1	---
			kg/day	---	7.07	---
5	Oxides of Nitrogen	IS 11255 (Part 7)	mg/Nm^3	3	9.4	---
			ppm	---	5.0	50
			kg/day	---	12.08	---
6	Carbon Monoxide	USEPA – 10A	mg/Nm^3	4	12.2	---
			ppm	---	10.7	---
			kg/day	---	15.67	---

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Verified by:

Surekha Jamdar
Dy. Technical Manager

Issued by:

Shraddha Kere
Technical Manager

End of Report

Netel (India) Limited

STACK MONITORING REPORT

Name of Organization	: M/s. Deepak Fertilisers And Petrochemicals Corporation Limited.
Customer Address	: Taloja Plant Plot K-1, MIDC Industrial Area, P.O. Taloja Dist. Raigad 410208 Maharashtra
Customer Reference	: Work Order no. 4800055893, Dated 24.07.2019

Date of Sampling	Sample Received Date	Analysis Start Date	Analysis Complete Date	Report on Date
20.12.2019	21.12.2019	21.12.2019	24.12.2019	24.12.2019

Sample Type	: Flue Gas (Stack)	Sampling done by	: Netel (India) Limited
Stack Connected to	: Boiler	Stack Diameter	: 1500
Sampling Location	: HRSG 1	Sample Code	: NIL/ST/12/19/047

Sr. No.	Parameters	Method	Unit	MDL*	Results	Consent Limits
1	Stack Temperature	IS 11255 (Part 3)	°C	---	102	---
2	Stack Gas Velocity	IS 11255 (Part 3)	m/sec	---	10.01	---
3	Volumetric Flow Rate	IS 11255 (Part 3)	Nm^3/hr	---	50298	---
4	Sulphur Dioxide	IS 11255 (Part 2)	mg/Nm^3	3	4.6	---
			ppm	---	1.8	---
			kg/day	---	5.55	---
5	Oxides of Nitrogen	IS 11255 (Part 7)	mg/Nm^3	3	13.1	---
			ppm	---	7.0	50
			kg/day	---	15.81	---
6	Carbon Monoxide	USEPA – 10A	mg/Nm^3	4	15.9	---
			ppm	---	13.9	---
			kg/day	---	19.19	---

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Verified by:

Surekha Jamdar
Dy. Technical Manager

Issued by:

Shraddha Kere
Technical Manager

End of Report

Netel (India) Limited

STACK MONITORING REPORT

Name of Organization	: M/s. Deepak Fertilisers And Petrochemicals Corporation Limited.
Customer Address	: Taloja Plant Plot K-1, MIDC Industrial Area, P.O. Taloja Dist. Raigad 410208 Maharashtra
Customer Reference	: Work Order no. 4800055893, Dated 24.07.2019

Date of Sampling	Sample Received Date	Analysis Start Date	Analysis Complete Date	Report on Date
20.12.2019	21.12.2019	21.12.2019	24.12.2019	24.12.2019

Sample Type	: Flue Gas (Stack)	Sampling done by	: Netel (India) Limited
Stack Connected to	: Boiler	Stack Diameter	: 1830
Sampling Location	: Boiler D	Sample Code	: NIL/ST/12/19/048

Sr. No.	Parameters	Method	Unit	MDL*	Results	Consent Limits
1	Stack Temperature	IS 11255 (Part 3)	°C	---	112	---
2	Stack Gas Velocity	IS 11255 (Part 3)	m/sec	---	5.07	---
3	Volumetric Flow Rate	IS 11255 (Part 3)	Nm^3/hr	---	36953	---
4	Sulphur Dioxide	IS 11255 (Part 2)	mg/Nm^3	3	BDL	---
			ppm	---	BDL	---
			kg/day	---	BDL	---
5	Oxides of Nitrogen	IS 11255 (Part 7)	mg/Nm^3	3	7.3	---
			ppm	---	3.9	50
			kg/day	---	6.47	---
6	Carbon Monoxide	USEPA – 10A	mg/Nm^3	4	8.6	---
			ppm	---	7.5	---
			kg/day	---	7.63	---

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Verified by:

Surekha Jamdar
Dy. Technical Manager

Issued by:

Shraddha Kere
Technical Manager

End of Report

Netel (India) Limited

WATER MONITORING REPORT

Name of Organization	: M/s. Deepak Fertilisers And Petrochemicals Corporation Limited.
Customer Address	: Taloja Plant Plot K-1, MIDC Industrial Area, P.O. Taloja Dist. Raigac 410208 Maharashtra
Customer Reference	: Work Order no. 4800055893, Dated 24.07.2019

Date of Sampling	Sample Received Date	Analysis Start Date	Analysis Complete Date	Report on Date
25.10.2019	26.10.2019	26.10.2019	29.10.2019	30.10.2019

Sample Type	: Waste Water	Sampling done by	: Netel (India) Limited
ULR Number	: TC670919000005964P	Container / Qtn.	: Plastic can (2 lit)
Sampling Location	: Treated Effluent (ETP)	Sample Code	: NIL/W/10/19/295

Sr No.	Test Parameter	Method	Unit	MDL*	Result	MPCB Limits
1	pH	IS 3025 (Part 11)	–	0.5 - 13.5	**7.49**	6.0 - 8.5
2	Total Dissolved Solids	IS 3025 (Part 16)	mg/lit	5	**1462**	2100
3	Total Suspended Solids	IS 3025 (Part 17)	mg/lit	5	**21**	100
4	COD	IS 3025 (Part 58)	mg/lit	10	**51**	250
5	BOD	IS 3025 (Part 44)	mg/lit	4	**19**	100
6	Residual Free Chlorine	IS 3025 (Part 26)	mg/lit	0.1	**BDL**	1
7	Fluoride	APHA 4500-F-D	mg/lit	0.02	**0.10**	1.5
8	Nitrate Nitrogen	IS 3025 (Part 34)	mg/lit	0.05	**15.6**	20
9	Phosphate	APHA 4500-P-C	mg/lit	1	**3.9**	5
10	Free Ammonical Nitrogen	IS 3025 (Part 34)	mg/lit	0.5	**0.79**	4
11	Ammonical Nitrogen	IS 3025 (Part 34)	mg/lit	0.1	**39.7**	50
12	Arsenic	APHA 3114-C	mg/lit	0.005	**BDL**	0.2
13	Cyanide	APHA 4500-CN-E	mg/lit	0.01	**BDL**	0.2
14	Vanadium	APHA 3111-B	mg/lit	0.2	**BDL**	0.2
15	Total Chromium (as Cr)	APHA 3111-B	mg/lit	0.01	**BDL**	2
16	Hexavalent Chromium (Cr^{6+})	APHA 3500-Cr-B	mg/lit	0.1	**BDL**	0.1
17	Oil & Grease	APHA 5520-B	mg/lit	0.2	**BDL**	10

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Verified by:

Surekha Jamdar
Dy. Technical Manager

Issued by:

Shraddha Kere
Technical Manager

End of Report

WATER MONITORING REPORT

Name of Organization	: M/s. Deepak Fertilisers And Petrochemicals Corporation Limited.
Customer Address	: Taloja Plant Plot K-1, MIDC Industrial Area, P.O. Taloja Dist. Raigad 410208 Maharashtra
Customer Reference	: Work Order no. 4800055893, Dated 24.07.2019

Date of Sampling	Sample Received Date	Analysis Start Date	Analysis Complete Date	Report on Date
26.11.2019	28.11.2019	28.11.2019	02.12.2019	02.12.2019

Sample Type	: Waste Water	Sampling done by	: Netel (India) Limited
ULR Number	: TC670919000006427P	Container / Qtn.	: Plastic can (2 lit)
Sampling Location	: Treated Effluent (ETP)	Sample Code	: NIL/W/11/19/239

Sr. No.	Test Parameter	Method	Unit	MDL*	Result	MPCB Limits
1	pH	IS 3025 (Part 11)	–	0.5 - 13.5	**7.12**	6.0 - 8.5
2	Total Dissolved Solids	IS 3025 (Part 16)	mg/lit	5	**1840**	2100
3	Total Suspended Solids	IS 3025 (Part 17)	mg/lit	5	**27**	100
4	COD	IS 3025 (Part 58)	mg/lit	10	**52**	250
5	BOD	IS 3025 (Part 44)	mg/lit	4	**28**	100
6	Residual Free Chlorine	IS 3025 (Part 26)	mg/lit	0.1	**BDL**	1
7	Fluoride	APHA 4500-F-D	mg/lit	0.02	**0.90**	1.5
8	Nitrate Nitrogen	IS 3025 (Part 34)	mg/lit	0.05	**14.9**	20
9	Phosphate	APHA 4500-P-C	mg/lit	1	**3.7**	5
10	Free Ammonical Nitrogen	IS 3025 (Part 34)	mg/lit	0.5	**0.12**	4
11	Ammonical Nitrogen	IS 3025 (Part 34)	mg/lit	0.1	**36.4**	50
12	Arsenic	APHA 3114-C	mg/lit	0.005	**BDL**	0.2
13	Cyanide	APHA 4500-CN-E	mg/lit	0.01	**BDL**	0.2
14	Vanadium	APHA 3111-B	mg/lit	0.2	**BDL**	0.2
15	Total Chromium (as Cr)	APHA 3111-B	mg/lit	0.01	**BDL**	2
16	Hexavalent Chromium (Cr^{6+})	APHA 3500-Cr-B	mg/lit	0.1	**BDL**	0.1
17	Oil & Grease	APHA 5520-B	mg/lit	0.2	**BDL**	10

Note :

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Verified by:

Surekha Jamdar
Dy. Technical Manager

Issued by:

Shraddha Kere
Technical Manager

End of Report

Netel (India) Limited

WATER MONITORING REPORT

Name of Organization	: M/s. Deepak Fertilisers And Petrochemicals Corporation Limited.
Customer Address	: Taloja Plant Plot K-1, MIDC Industrial Area, P.O. Taloja Dist. Raigad 410208 Maharashtra
Customer Reference	: Work Order no. 4800055893, Dated 24.07.2019

Date of Sampling	Sample Received Date	Analysis Start Date	Analysis Complete Date	Report on Date
31.12.2019	02.01.2020	02.01.2020	04.01.2020	06.01.2020

Sample Type	: Water	Sampling done by	: Netel (India) Limited
ULR Number	: TC670919000007181P	Container / Qtn.	: Plastic can (2 lit)
Sampling Location	: Treated Effluent (ETP)	Sample Code	: NIL/W/12/19/257

Sr. No.	Test Parameter	Method	Unit	MDL*	Result	Consent Limits
1	pH	IS 3025 (Part 11)	–	0.5 - 13.5	**6.92**	6.0 - 8.5
2	Total Dissolved Solids	IS 3025 (Part 16)	mg/lit	5	**1460**	2100
3	Total Suspended Solids	IS 3025 (Part 17)	mg/lit	5	**61**	100
4	COD	IS 3025 (Part 58)	mg/lit	10	**35**	250
5	BOD	IS 3025 (Part 44)	mg/lit	4	**10**	100
6	Residual Free Chlorine	IS 3025 (Part 26)	mg/lit	0.1	**BDL**	1
7	Fluoride	APHA 4500-F-D	mg/lit	0.02	**0.30**	1.5
8	Nitrate	IS 3025 (Part 34)	mg/lit	0.05	**17.9**	20
9	Phosphate	APHA 4500-P-C	mg/lit	1	**4.7**	5
10	Free Ammonical Nitrogen	IS 3025 (Part 34)	mg/lit	0.5	**BDL**	4
11	Ammonical Nitrogen	IS 3025 (Part 34)	mg/lit	0.1	**29.4**	50
12	Arsenic	APHA 3114-C	mg/lit	0.005	**BDL**	0.2
13	Cyanide	APHA 4500-CN-E	mg/lit	0.01	**BDL**	0.2
14	Vanadium	APHA 3111-B	mg/lit	0.2	**BDL**	0.2
15	Total Chromium (as Cr)	APHA 3111-B	mg/lit	0.01	**BDL**	2
16	Hexavalent Chromium (Cr^{6+})	APHA 3500-Cr-B	mg/lit	0.1	**BDL**	0.1
17	Oil & Grease	APHA 5520-B	mg/lit	0.2	**BDL**	10

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Verified by:

Surekha Jamdar
Dy. Technical Manager

Issued by:

Shraddha Kere
Technical Manager

End of Report

A Neterwala Group Company

W-408, Rabale MIDC,
TTC Industrial Area,
NAVI MUMBAI - 400 701.
INDIA.

Tel. : + 91 022 2760 7102 / 2760 7103
Fax : + 91 022 2760 7100

E-mail : sales@netel-india.com
Website : www.netel-india.com
CIN : U74999MH2003PLC142228

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TÜVRheinland CERTIFIED
www.tuv.com ID 9105082996

Regd. office : Liberty Building, 3rd Floor, Sir Vithaldas Thackersey Marg, (New Marine Lines), Mumbai - 400 020. Tel. : 22066231 / 61

Netel (India) Limited

WATER MONITORING REPORT

Name of Organization	: M/s. Deepak Fertilisers And Petrochemicals Corporation Limited.
Customer Address	: Taloja Plant Plot K-1, MIDC Industrial Area, P.O. Taloja Dist. Raigad 410208 Maharashtra
Customer Reference	: Work Order no. 4800055893, Dated 24.07.2019

Date of Sampling	Sample Received Date	Analysis Start Date	Analysis Complete Date	Report on Date
20.01.2020	20.01.2020	21.01.2020	24.01.2020	24.01.2020

Sample Type	: Water	Sampling done by	: Netel (India) Limited
ULR Number	: TC670920000000325P	Container / Qtn.	: Plastic can (2 lit)
Sampling Location	: Treated Effluent (ETP)	Sample Code	: NIL/W/01/20/181

Sr. No.	Test Parameter	Method	Unit	MDL*	Result	Consent Limits
1	pH	IS 3025 (Part 11)	–	0.5 - 13.5	**7.34**	6.0 - 8.5
2	Total Dissolved Solids	IS 3025 (Part 16)	mg/lit	5	**1215**	2100
3	Total Suspended Solids	IS 3025 (Part 17)	mg/lit	5	**30**	100
4	COD	IS 3025 (Part 58)	mg/lit	10	**31**	250
5	BOD	IS 3025 (Part 44)	mg/lit	4	**14**	100
6	Residual Free Chlorine	IS 3025 (Part 26)	mg/lit	0.1	**BDL**	1
7	Fluoride	APHA 4500-F-D	mg/lit	0.02	**0.9**	1.5
8	Nitrate	IS 3025 (Part 34)	mg/lit	0.05	**8.7**	20
9	Phosphate	APHA 4500-P-C	mg/lit	1	**3.2**	5
10	Free Ammonical Nitrogen	IS 3025 (Part 34)	mg/lit	0.5	**0.9**	4
11	Ammonical Nitrogen	IS 3025 (Part 34)	mg/lit	0.1	**42.0**	50
12	Arsenic	APHA 3114-C	mg/lit	0.005	**BDL**	0.2
13	Cyanide	APHA 4500-CN-E	mg/lit	0.01	**BDL**	0.2
14	Vanadium	APHA 3111-B	mg/lit	0.2	**BDL**	0.2
15	Total Chromium (as Cr)	APHA 3111-B	mg/lit	0.01	**BDL**	2
16	Hexavalent Chromium (Cr^{6+})	APHA 3500-Cr-B	mg/lit	0.1	**BDL**	0.1
17	Oil & Grease	APHA 5520-B	mg/lit	0.2	**BDL**	10

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Verified by:

Surekha Jamdar
Dy. Technical Manager

Issued by:

Shraddha Kere
Technical Manager

End of Report

A Neterwala Group Company

W-408, Rabale MIDC,
TTC Industrial Area,
NAVI MUMBAI - 400 701.
INDIA.

Tel. : + 91 022 2760 7102 / 2760 7103
Fax : + 91 022 2760 7100

E-mail : sales@netel-india.com
Website : www.netel-india.com
CIN : U74999MH2003PLC142228

ISO 9001:2015
TÜVRheinland CERTIFIED
www.tuv.com ID 9105082996

Regd. office : Liberty Building, 3rd Floor, Sir Vithaldas Thackersey Marg, (New Marine Lines), Mumbai - 400 020. Tel. : 22066231 / 61

Netel (India) Limited

NOISE LEVEL MONITORING REPORT

Name of Organization	: M/s. Deepak Fertilisers And Petrochemicals Corporation Limited.
Address	: Taloja Plant Plot K-1, MIDC Industrial Area, P.O. Taloja Dist. Raigad 410208 Maharashtra
Customers Reference	: Work Order no. 4800055893, Dated 24.07.2019

Instrument Model	: Lutron SL-4033-SD (Class 1)	Instrument Serial No.	: Q640792
Date of Sampling	: 03.10.2019	Date of Calibration	: 17.09.2019
Date of Reporting	: 06.10.2019	Next Calibration Due	: 16.09.2020

Sr. No.	Location	Leq (dBA)			
		Day	MPCB Limit	Night	MPCB Limit
1	Main Gate	73.4	75	69.4	70
2	NPK Gate No. 4	61.9	75	55.4	70
3	NPK Raw Material Storage Area	65.2	75	58.7	70
4	NPK Production Unit	62.2	75	53.6	70
5	Near IPA Gate	69.9	75	69.4	70
6	Near CFB Cooling Tower	72.1	75	67.8	70
7	Ammonia Unloading	73.3	75	69.5	70
8	K-6 Plot (Near Main Gate)	69.9	75	68.6	70

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Verified by:

Surekha Jamdar
Dy. Technical Manager

Issued by:

Siddhi Kere
Technical Manager

End of Report

NOISE LEVEL MONITORING REPORT

Name of Organization	: M/s. Deepak Fertilisers And Petrochemicals Corporation Limited.
Address	: Taloja Plant Plot K-1, MIDC Industrial Area, P.O. Taloja Dist. Raigad 410208 Maharashtra
Customers Reference	: Work Order no. 4800055893, Dated 24.07.2019

Instrument Model	: Lutron SL-4033-SD (Class 1)	**Instrument Serial No.**	: Q640792
Date of Sampling	: 22.11.2019	**Date of Calibration**	: 17.09.2019
Date of Reporting	: 26.11.2019	**Next Calibration Due**	: 16.09.2020

Sr. No.	Location	Leq (dBA)			
		Day	MPCB Limit	Night	MPCB Limit
1	Main Gate	**72.9**	75	**69.0**	70
2	NPK Gate No. 4	**60.0**	75	**54.8**	70
3	NPK Raw Material Storage Area	**66.5**	75	**68.7**	70
4	NPK Production Unit	**64.1**	75	**61.7**	70
5	Near IPA Gate	**71.8**	75	**69.8**	70
6	Near CFB Cooling Tower	**69.9**	75	**69.4**	70
7	Ammonia Unloading	**72.1**	75	**68.6**	70
8	K-6 Plot (Near Main Gate)	**71.3**	75	**69.7**	70

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Verified by:

Surekha Jamdar
Dy. Technical Manager

Issued by:

Shraddha Kere
Technical Manager

End of Report

Netel (India) Limited

NOISE LEVEL MONITORING REPORT

Name of Organization	: M/s. Deepak Fertilisers And Petrochemicals Corporation Limited.
Address	: Taloja Plant Plot K-1, MIDC Industrial Area, P.O. Taloja Dist. Raigad 410208 Maharashtra
Customers Reference	: Work Order no. 4800055893, Dated 24.07.2019

Instrument Model	: Lutron SL-4033-SD (Class I)	**Instrument Serial No.**	: [illegible]
Date of Sampling	: 20.12.2019	**Date of Calibration**	: 17.09.2019
Date of Reporting	: 24.12.2019	**Next Calibration Due**	: 16.09.2020

Sr. No.	Location	Leq (dBA)			
		Day	MPCB Limit	Night	MPCB Limit
1	Main Gate	**74.4**	75	**63.7**	70
2	NPK Gate No. 4	**59.4**	75	**58.0**	70
3	NPK Raw Material Storage Area	**67.8**	75	**65.3**	70
4	NPK Production Unit	**64.1**	75	**62.8**	70
5	Near IPA Gate	**73.2**	75	**69.6**	70
6	Near CFB Cooling Tower	**69.2**	75	**66.7**	70
7	Ammonia Unloading	**72.8**	75	**62.3**	70
8	K-6 Plot (Near Main Gate)	**72.0**	75	**69.8**	70

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Verified by:

Surekha Jamdar
Dy. Technical Manager

Issued by:

Shraddha Kere
Technical Manager

End of Report

Netel (India) Limited

NOISE LEVEL MONITORING REPORT

Name of Organization	: M/s Reliance Industries Limited
Address	: Nagothane, Taluka Roha, District Raigad - 402 125
Customers Reference	: Work Order No. NN0/230030690, Dated 25.05.2017

Instrument Model : Lutron SL-4033-SD (Class 1)	Instrument Serial No. : Q640792
Date of Sampling : 21.01.2020	Date of Calibration : 27.09.2019
Date of Reporting : 24.01.2020	Next Calibration Due : 28.09.2020

Sr. No.	Location	Leq (dBA)			
		Day	MPCB Limit	Night	MPCB Limit
1	Main Gate	69.1	75	65.0	70
2	NPK Gate No. 4	56.7	75	56.8	70
3	NPK Raw Material Storage Area	71.3	75	68.4	70
4	NPK Production Unit	58.6	75	56.3	70
5	Near IPA Gate	64.2	75	64.4	70
6	Near CFB Cooling Tower	71.8	75	69.4	70
7	Ammonia Unloading	61.9	75	60.2	70
8	K-6 Plot (Near Main Gate)	72.5	75	67.8	70

Note :

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Verified by:

Surekha Jamdar
Dy. Technical Manager

Issued by:

Shraddha Kere
Technical Manager

End of Report

DEEPAK FERTILISERS
AND PETROCHEMICALS
CORPORATION LIMITED

Deepak Fertilizers and Petrochemicals Corporation Ltd, Taloja
CSR Report 2019-20 Yearly (Up to March 2020)

VISION

To act as an effective catalyst in Deepak Fertilisers And Petrochemicals Corporation Limited (DFPCL) geographies of operations in creating a self-reliant and respectable society with secure and sustained means to livelihood, through employable skills and resource support and additionally to promote and support the rich cultural heritage of India.

MISSION

The mission for the identified society at large, in geographies of DFPCL's operations and influence, shall be:

- To identify the potential of and gaps in the economic and social support systems, so as to help develop a sustained, self-reliant society with special emphasis on the youth, women & marginal farmers
- To undertake vocational skill and soft skill development initiatives enabling sustained and respectable employment opportunities for leading a self-reliant life
- To facilitate income generation programs of individuals / groups through alignment of skill development with self-employment opportunities
- To provide marketing and financial support to help enhance sustained income generation initiatives
- To generate community development activities and promote self-help groups so as to improve the living conditions of people through peoples' initiatives
- To initiate activities and develop government / institutional linkages in community preventive / corrective health facilities where needed
- To undertake farmer skill building, soil / nutrient / agri-inputs / produce enhancement initiatives
- To support performing arts among local communities for promotion of talent & cultural richness of the society
- To provide a much-needed crisis support for unexpected calamities and disasters
- To co-ordinate / conduct any other CSR initiatives which are consistent with the provisions of Section 135 of the Companies Act, 2013 or other provisions as may be prescribed by the government from time to time.

Introduction:

As a true corporate citizen, DFPCL is 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** at Taloja and Pune in Maharashtra.

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

DFPCL has 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 and urban area of Pune**:

Sr.No.	Block	Revenue Village	Hamlet
1	Panvel	Ambe	
2	Panvel	Ambivali	
3	Panvel	Shirwali	
4	Panvel	Chinchvali -T	
5	Panvel	Wavanja	

6	Panvel	Nitlas	
7	Panvel	Devichapada	
8	Panvel	Pale Kh	
	Panvel		Dongryachapada
9	Panvel	Chindran	
10	Panvel	Tondre	
11	Panvel	Khairne	
12	Panvel	Mahalungi	
13	Panvel	Kanpoli	
14	Panvel	Nere	
	Panvel		Nerepada
	Panvel		Bhokarpada
	Panvel		Sangtoli
15	Panvel	Owe	
	Panvel		Owe Camp
	Panvel		Peth
16	Panvel	Shivkar	
	Panvel		Mohopada
17	Ambarnath	Brudul	
18	Panvel	Cherwali	
19	Panvel	Waje	
20	Ambarnath	Shelarpada (Ambrnath)	
	Ambarnath		Mhatrepada
21	Ambarnath	Chirad	
22	Ambarnath	Chinchvali (Ambrnath)	
23	Panvel	Pale BK	
	Panvel		Walvali
	Panvel		Kolwadi
24	Panvel	Khanav	
25	Ambarnath	Kumbarli	
26	Panvel	Talojamajkur	
	Panvel		Dharna
	Panvel		Pethali
27	Panvel	Turbhe	
28	Panvel	Siddhikarvale	
29	Panvel	Morbe	
30	Ambarnath	Karvale KH	
31	Panvel	Wagani (TT)	
32	Panvel	Karmbeli	
	Panvel		Bhalyachiwadi
	Panvel		Yelmar
33	Panvel	Khairwadi	
	Panvel		Fanswadi
	Panvel		Garmal

34	Panvel	Modhar	
	Panvel		Kuttarpada
35	Panvel	Hedutne	
36	Panvel	Gadeswar	
	Panvel		Rithghar
37	Panvel	Dhundre	
38	Panvel	Dhamni	
	Panvel		Housechiwadi
39	Panvel	Deharang	
40	Panvel	Kondap	
41	Panvel	Poyanje	
42	Panvel	Wardoli	
43	Ambarnath	Nariwali	
44	Ambarnath	Narhhean	
45	Ambarnath	Usatne	
46	Ambarnath	Dombiwali	
47	Panvel	Vihighar	

Nearly 17081 families served in urban, rural and tribal areas through various initiatives by the end of financial year 2019-20.

Sr. No	Name of Project	Major Activity	No. of Families Benefited
1	Wadi & Health	Wadi, Veg., WRD	0558
3	Dairy Development	Livestock & Artificial Insemination	0481
4	Arogyam	Health Camps, Eye Camp, Cataract Operation, Mobile Clinic	09398
	Community Development and Social Welfare	Watershed, Development, Disaster Relief, Drinking Water, Scheme	2394
5	Vocational Skill Development	Vocational Courses and Placement	298
6	LEED	Entrepreneurship Development, Yellow Ribbon NGO Fair, Muskaan, Income Generation Program	3100
7	Gyanam	Scholl Infrastructure and human Resource	464
	I-REACH	Art & Culture	388
	Total		**17081**

DFPCL is implementing need-based activities in more than 50 hamlets and villages of New Panvel and urban area of Pune. **Under CSR initiatives projects and activities are being implemented**:

Wadi Development

- Horticulture Plantation (Mango)
- Promotion of Vegetables crops
- Promotion of Floriculture
- Health
- Farmers Capacity Building

Dairy Development

- Cattle Induction
- Door-step health services for cattle
- Artificial Insemination
- Fodder Development
- Vaccination
- Farmers Capacity Building

Vocational Training

- Diploma in opthomatry
- Tailoring

Health and Education

- Mobile Clinic
- Health check-up camp
- Eye camp
- Kitchen Garden

Wadi Project

The overall objective of the project is to improve the standard and quality of living of the poor rural families through a holistic and enabling project approach. This can be achieved by helping the tribal and other families to develop productive assets such as a 'Wadi' (integrated farming system comprising of horticulture, agriculture) to enable them to earn substantial and sustainable livelihood over a long-term period. Simultaneously, there is need for a thrust to tackle the root causes of poor health and improve the quality of living, particularly of women.

Mango Fruiting

The proposed project thus primarily aims at the following:

- To provide secondary sustainable source of income
- To increase the asset base of the tribals & other

• To empower of women through economic and social development
• To improve the health status of the community
• To improve environment through carbon fixation


Vegetable Cultivation

Project Activities:

Under wadi livelihood project each participant family takes up intensive land development and plantation work on half acre (0.2 ha) of wasteland or marginal land, to convert this into a productive forestry plantation and orchard (WADI).

Objectives are highlighted below:

- Mobilisation of community through project promotional meetings and exposure.
- Selection of beneficiaries and land
- Plantation of fruit and forestry trees.
- Development of eroded wasteland through soil and water conservation.
- Water resource development and water conveyance
- Cultivation of suitable improved intercrops both for food and for cash incomes wherever possible during the initial stage
- Capacity building of staff and beneficiaries
- Development of Model Plots: The objective of these demonstration / model plots will be to create awareness in farmers about cost effective farming techniques, new introduction of crops, diversified farming techniques etc.
- Community Health Activities:
  - Eye Check-up Camps and Cataract Operation
  - Seasonal and perennial Kitchen Garden
  - General Health Check-up camps for Women and children
- Women Empowerment:
  - Training to existing women's groups
  - Wadi on women's name
  - Exposure

Major Achievements:

Sr.No.	Major Activity	Target	Achievement	Remarks
1	Wadi Plantation Batch-VII: Selection, Layout, Pit digging, Pit Filling with Basal Dose and Plantation of Wadi and Documentation	80	80	Plantation of 2480 Mango Grafts-(Variety-Keshar) Survival 93.25 % as on March 20
2	Support for Farm Implements Batch-VII	80	80	Set of one Spade, Pickaxe and Secateurs per farmer
3	Live Fencing to Wadi (Bamboo)	80	80	Plantation of Forestry Plants done (Bamboo) -4000 nos.
4	Plant Protection (B-I to B-VII)	556	556	Done support for pesticide (Bordopest, Carbendazim and Insecticide)
5	Support for Nutrient management (B-I to B-VII)	556	556	Provided NPK and Micronutrient
6	Support for WRD and Conveyance	80	80	Support for tank, pipe, Motor and engine to ensure protective irrigation to Wadi
7	Soil and Water Conservation-B-VII	80	72	SWC work is not required to 8 wadi

8	Support of Vegetable Seed (Nos. of Farmers)	240	240	vegetable cultivation done on ~80-acre area. Farmer getting additional income of Rs.15000-25000 per farmer.
13	Trial Plot (Exotic/ new vegetables)	6	6	Zukeni, Paddy, Okera, Sweet Corn, Marigold, Sweet Corn.
14	Vegetable Nursery in tray	03	04	7100 no's of seedling are prepared, Sell out 3900 no's seedling and getting additional income of Rs.9300.00.
15	Mango Graft Nursery	5	02	Intended mango graft make available at local level.
16	Jasmin Nursery	01	01	2700 plants are ready
Capacity Building				
1	Farmers internal exposure	4	4	
2	Exposure of staff and Volunteers	2	2	Conducted exposure visit for staff at Nasik exhibition and Sinner taluka to update the knowledge.
4	Kishan Melava	2	2	162 Participants
5	Village Meeting	150	150	



Case Study

Project: Wadi Project | **Year of Participation: 2014**

Name of Aspirant: Ms. Budhi Ambho, Mr. Ambho Kamlya Bhagat

Village: Shirvali Taluka Panvel District Raigad

Family Profile: Ambho and Bhudi have two sons and a daughter. The elder son is working on a temporary basis and their 17 years old daughter is helping her parents in their farm work. The third child is physically challenged.

Land: 1 Acre

Wadi Yield Year	No. of fruit tree	Home consumption quantity in kg.	Sold quantity in kg.	Total harvested quantity in kg.	Total Income
2018-19	22	33	214	247	Rs. 27,325

Dairy Development Project

Dairy is an important subsidiary source of income for small/marginal and agricultural labourers in rural area. The manure from animals provides good source of organic matter to improve soil fertility and crop yield. The surplus fodder and agricultural by products are gainfully utilized for feeding the animals. Since agriculture is mostly seasonal, there is possibility of finding employment throughout year for many women through dairy farming. Thus, dairy also provides employment throughout the year. The main beneficiaries of project are small/marginal farmers and landless labours. The aspirant can earn a gross surplus of about 35000 per year from a unit

Major Achievements:

Sr. No.	Major Activity	Target	Achievement	Remarks
1	Training of aspirant's new batches	03	03	Total 13 aspirants attended Training with exposure
2	Livestock Training (CLDP)	02	02	Two training were conducted at Khanav and Kumbharli village. 21 women and 70 men dairy entrepreneur participated in this training.
3	Doorstep Visit of expert for Monitoring & treatment of critical cows/Calves	04	03	Visit of Dr. D. S. Chature No. of cows & Calves Treated: 146 (Empty Cow-106, Treatment of Cow & Calves-26, Empty Calves-14 Total: 146)
4	External Exposure Visit	01	01	The intention was learning by seeing we have conducted 01 exposure at Dairy Exhibition on 16 Dec 2019 at Katraj, Pune. In which 26 aspirants were participated. (M- 24& F-2)
5	Internal Exposure Visit	02	02	27 dairy aspirants were participated in the exposure. It was intended to create awareness about adoption of best dairy management practices. (M- 21+ F-6= 27)
6	Purchase of Cows	15	15	Support given to 15 aspirants for livelihood development thorough cow induction activity under dairy development project. Apart from this we have provided health services, Insurance and required medicines at initial period.
7	Vaccination FMD	600	600	Prevention is better than cure, so we have done vaccination for FMD to 600 milking animals as a preventive measure. (Cows-88+Calves-124+Other-388,Total=600)
8	Vaccination Theileriosis	200	110	Done vaccination to 110 cattle's as a preventive measure (Cows-45 + Calves-65); Balance are in progress.
9	Female Calves Growth Monitoring	04	04	We are closely monitoring growth of female calves and as per observation, continuous efforts are being made for better growth of calves. (Excellent-46, Good-34, AV-55, Poor-61, Total=196) Created Asset of Rs.23.03 lakh.
10	Artificial Insemination	750	758	Provided doorstep artificial insemination service in 54 villages of Panvel, Amarnath & kalyan taluka.

11	Pregnancy Diagnosis (up to Dec End)	763	763	We are doing regular and timely pregnancy diagnosis. (CPD-309; Empty-75; Repeat-291 & Pending-88=763) Conception Rate-45.77%
12	Calving		310	New 310 cow were born during this year. Which will lead to increase in asset base of livestock (Male-136, Female-174)
13	Perennial Fodder Plot	10	06	Due to water scarcity in summer season in the area unable to achieve target. Apart from this less acceptance for Azzola.
14	Calf rally	1	1	To increase Healthy competition between aspirants we have organized calf rally on 23.1.20 at Pale village. In which 34 aspirants participated with their 53 female calves. We have provided prizes for 03 best calves in each age group.
15	Calf Grower Feed	75	40	Balance distribution is under progress, acceptance level for the same is low.
16	Vermicompost Bed	10	10	
17	Silage Bag	10	10	
18	Maize seed Distribution	20	20	Convergence from Govt. Scheme total 320 Kg seed distributed to 20 dairy aspirants.

Total Artificial Insemination Report Since Inception:

	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Artificial Insemination	307	602	549	602	735	762
Pregnancy Diagnosis	178	367	294	367	431	532
Calving						
Male	49	57	91	135	142	
Female	56	64	141	109	137	

Output of the Dairy Project

Details	Cow Milk Summery	Calf Milk Summery	Total
Total Milk Produced	72920 Lit.	12690 Lit	85610 Lit
Milk Consumed at Home	39440 Lit	8360 Lit	47800 Lit.
Milk Consumed by Calf	250692 Lit	36760 Lit	287452 Lit
Milk Sold	363052 Lit	57810 Lit	420862 Lit
Additional Income through sale of Milk	**Rs. 84,67,260.00**	**Rs.13,05,670.00**	**Rs. 97,72,930.00**

Vocational Training:

Skill Based Vocational Training Programs prepares aspirants to work in various fields of trade. It provides equal opportunity for employment and livelihood. After completion of course, the aspirants are supported with employment to lead a sustainable livelihood. VSDHE uses various forms of formal, non-formal and informal learning which help in achieving social equality, inclusion and sustainable development. Some of the highlights of the program include:

- Life Skills and Values
- Spoken English
- Exposure visits
- One-on-One Mentoring
- Support for Placements
- Soft Skills Training Programs
- Practical Oriented Training
- Internships (based on each course)
- Pick-up and Drop Facility
- Digital Literacy and Financial Literacy
- Placement Tracking

Major Achievements:

Sr. No.	Major Activities	Plan	Achi.	Remarks
A) Tailoring Course				
1	Total Students Covered	50	61	Providing basic Tailoring Course to unemployed women and girls.
2	No. of Students Completed Course	50	37	Variance-13; due to other classes of Tailoring started and dropout-07
3	No. of Drop out Students	00	07	Dropout due to their own family problems
4	No. of Students In Course	00	17	Presently 17 students are under training.
5	Training of Sewing Machine Maintenance & Servicing	03	03	Conducted training on dated 24th Jun, 20th Aug 2019 and 24th Feb 2020 total 34 women participated in the training.
6	BSc. Optometry	07 new 7 Existing	00 7	07 variance- postponed support in next yr. due to change in policy 2018-19– 4 students 2017-18– 3 students
7	No. of Parents meeting	02	02	Conducted two meetings with students and parents for counseling Date: 22 Jan 2020 Attendance: Male:02 Female:06

Case Study - Tailoring

Name of Aspirant: Mrs. Vandana Ajay Bharsakde
Village: Pale Khurd Taluka Panvel District Raigad
Support of Course: Basic Tailoring Course
Support of Year: 2019
Family Profile: Vandana is 27 years of age and has 4 members in her family consisting of her husband and two sons. Her husband, the only earning member in the family, works at Taloja MIDC. His income is limited, and they find it difficult to subsist, due to which she aspires to financially contribute for her family's future. She was made aware of Ishanya Foundation's tailoring course which is one of its key pillars towards Women's Empowerment. She sought admission and learnt to stitch various types of blouses (simple blouse, katori blouse and fashionable blouse). Today she has started her own home enterprise and through IsFon, is able to provide a helping hand to improve the financial condition of her family.

Support Given	Average Monthly Income	Annual Income	Impact
Basic Tailoring Course	Rs. 7,800	Rs. 93,600	Children education, improved standard of living and saving money in bank for the future.

Aarogyam Project:

DFPCL is consistently working for improvement of health by providing doorstep health services through health check-up camp and as education initiative is a program that support students from standard 1 to 10 with tuition in all the subjects so that the students are encouraged to study and not give up their studies half way. Under the initiative special focus is given on difficult subjects like Mathematics, English and Science.

Kitchen Garden

Sr. No	Activity	Plan	Achievement	Remark
01	Health check-up camps	02	02 (271 Patients)	(271 patients screened; 60 patients refer to MGM) Patients who come from a section of the society who cannot enjoy the privilege of expensive medical services availed the benefit of these check-up camps.
02	Eye Check-up Camps	3	03 (370 patients)	Venue: Pale Kh. IsFon Office Date of Camps: 26th April 2nd Aug. and 20th Dec 2019. Total Patients Screened:702 Cataract Detected: 157 Cataract Operated: 120 patients Spectacles distributed to 329 patients.
03	School Screening Camps	03	03	• Venue: Sanjay Gandi Madhyamic High school-Kolvadi, RZP School- Valvali and Sudhagad High School and RZP school Chindren • Dates of Camps: 23d Aug, 29th Nov 2019 and 31st Jan 2020, respectively. • Total Students Screened: 984 Spectacles distributed to 13 student, 73 students were referred to LCT for further treatment and diagnosis.
04	Kitchen Garden	400	400	Vegetable seed distributed to families from project area.
05	Mahila Melava	02	01	Conducted Mahila Melava on 17th Jan 2020 at Valvali village, during the melava Mrs. Ritcha demonstrates Yoga and Mrs. Uma Joshi given informative talk on Natural therapy. Total 132 women participated.

			Second Event cancelled due to COVID-19.
	• Doorstep Health Services with free medicine • Health Awareness Referral Services	**5985**	Objective: To improvement of health by providing doorstep health services through mobile clinic. Villages Covered: 22 (More than 30000 Population)









Type of Service Provided through Mobile Clinic:

a. Mobile Medical Units will help mobilise healthcare to conduct screenings, basic diagnosis and provide awareness and medication.
b. Mobile Medical Unit shall be equipped with a doctor and a nurse who were trained to recognise symptoms of health-related ailments, conduct basic diagnosis of common diseases, prescribe medication and referrals to specialised clinics in case of further medical complications.
c. Mobile healthcare services are able to cover Two to Three villages/locations in a single day.
d. The services provided would of necessity be preventive and promotive and outpatient curative care. Where there are cases needing acute medical care on the day the Mobile clinic reaches the site, such care would be provided, and patient referral organized.

Dyanam/CDSW:

Dyanam

Sr. No.	Major Activity	Plan	Achievement	Remarks
01	Digital School	20 Class	20 Class	Work is in progress to installation of digital set at 20 classes from Chindren Devichapada and Kanpoli village of ***Taloja (Maharashtra).***
02	Infrastructure Development	02 School	02 School	• Installation of blocks at primary school from Suva village of ***Dahej (Gujrat).*** • *Donation of Steel to MADP School, Kalamboli for Construction.*
03	Support for Manpower of School	01	01	Appointed one teacher (Math & Science) to fulfill requirement of Rahiyad Secondary school of ***Dahej MIDC (Gujrat).*** (Math and science)
04	Donation for Girls Education	1.11111 (Rs.)	1.11111 (Rs.)	DFPCL contributed Rs.1,11,111/- to Kanya kelavni Nidhi launched by Dept. of Women & Child Devt. of Gujrat Govt for Girls Education ***(Dehej, Gujrat).***

Support for Disaster Management

S. N.	Activities	Plan	Achi.	Remarks
01	***Support to Flood affected families from Sangli and Kolhapur District of Maharashtra***	500 Families	500 Families	Saree:500 Towel: 500 Blanket: 500
02	***Donation to Donkey Sanctuary Welfare Association (DSWA) for:*** ➢ To provide health related support to Donkeys which leads to increase or to start income to the affected families. ➢ Provide doorstep health services to animals. ➢ Provide feed and fodder support to 5000 donkeys	5000 Donkeys	5000 Donkeys	Support Given of Rs. 5 Lakh. (500 Families)

03	***Support done for watershed work to Mardi village of Maan Block, Satara District.*** Mardi is a large village located in Man Taluka of Satara district, Maharashtra with total 1071 families residing Was facing problem of water scarcity for drinking and agriculture.	1071 families	1071 Families	Rs.10 Lakh donated for completion of watershed work.

Helmet Distribution to Taloja Police Station Employees

ISHĀNYA FOUNDATION

50 Helmets Distributed to Police officers from Taloja Police Station.

Most of the officers are traveling on motorcycle while patrolling to manage traffic and other official works with in the Taloja MIDC. Apart from this most of the officers are traveling by motorcycle to reach office. Every officers or employee need motivation to perform better or maintain consistency in the work. This activity will motivate to police officers.

Objectives:

Aims to reduce the risk of serious head and brain injuries by reducing the impact of a force or collision to the head.

Wearing a helmet while riding greatly reduces the severity of injury and potential trauma to the head, the probability of death, and overall cost of medical care. A **helmet** is designed to cushion and protect a rider's head from the collision of a crash

Kanpoli Drinking Water Scheme

ISHANYA FOUNDATION

Sr. No.	Activities	Plan	Achi.	Remarks
1	Drinking Water Scheme	01	01	• Elevated Storage Capacity: 25000 lit. with 04 distribution Points in Kanpoli village. • Families Benefited: 250 families.



Employee Engagement

ISHANYA FOUNDATION

Initiative driven by Pani Foundation:

From DFPCL K1 and K8 Taloja, 43 employees were participated in the **Mahashramdaan** event at Jawalarjun Village on 1st May 2019.

DFPCL employees done Mahashramdaan by creating ~400 running metre farm bund. For this farm bund participant created around 80 trenches having size of 2M width and 0.30-0.45m depth. These trenches will hold more than 2 lakh lit of water.