

Ref No. EPC/ MoEF & CC/112/2021-22(1)

Date: 29.11.2021

To  
The Director (S)  
Ministry of Environment, Forest & Climate Change  
Government of India, Eastern Regional Office  
A/3, Chandrasekharapur, Bhubaneswar – 751 023

Through E-mail to – [roez.bsr-mef@nic.in](mailto:roez.bsr-mef@nic.in)

**Sub: Half yearly compliance report for the period April 2021 to September 2021.**

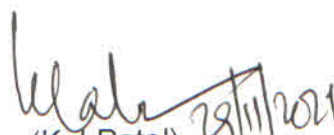
**Ref: Environmental Clearance no. J-11011/34/97-IA II dated 31<sup>st</sup> July'1998, Letter No. J-11011/34/97-IA II [I] dated 2<sup>nd</sup> Mar'2000, Letter No. J-11011/34/1997-IA II [I] dated 3<sup>rd</sup> April'2017 and File No. 106-12/EPE dated 11.5.2020.**

Dear Sir,

Please find the Half-yearly compliance report for the period from April 2021 to September 2021 enclosed herewith.

Thanking you,

Yours faithfully,  
For and On behalf of Indian Farmers Fertiliser Cooperative Ltd.

  
(K J Patel)  
Unit Head

Encl: As above

Cc: Member Secretary,  
State Pollution Control Board, Odisha  
Bhubaneswar – Hard copy & soft copy  
through E-mail to [paribesh1@dataone.in](mailto:paribesh1@dataone.in)

: for kind information please.

### HALF-YEARLY COMPLIANCE REPORT

Name of the Project : Indian Farmers Fertiliser Cooperative Limited, Paradeep Unit

Clearance Letter/s No. and Date : J-11011/34/97-IA II dated 31<sup>st</sup> July'1998,  
J-11011/34/97-IA II [I] dated 2<sup>nd</sup> Mar'2000 &  
J-11011/34/1997-IA II [I] dated 3<sup>rd</sup> April'2017.

Period of Compliance Report : April 2021 to September 2021

#### **Specific Conditions:**

Sr No.	Conditions	Compliance Status
i	<p>The gaseous emissions (SO<sub>2</sub>, Nox, Acid Mist, Fluorine, Ammonia and HC) and particulate matter from various process units / storage should conform to the standard prescribed by the concerned authorities from time to time. As reflected in EMP the company should provide the following pollution control measures</p> <p>Tail gas alkali scrubbing system for control of SO<sub>2</sub> emission during startup and upset conditions in the Sulphuric acid plant</p> <p>Fume scrubber to scrub off fluorine gases and hydrofluorosilicic acid. A fluorine recovery system should also be provided in the Phosphoric acid plant</p> <p>Dual mole scrubbing system for removal of both dust and volatiles (Ammonia, Hydrofluoric acid and Silico Tetrafluorides) in the DAP Plant</p> <p>The pollution control device should be provided with interlocking facilities with the manufacturing process</p>	<p>The gaseous emissions (SO<sub>2</sub>, NO<sub>x</sub>, Acid Mist, Fluorine &amp; Ammonia) and Particulate Matter from various process units confirm to the standards prescribed in 'Consent to operate' issued by the State Pollution Control Board, Odisha.</p> <p>IFFCO Paradeep has installed pollution control equipment like alkali scrubber for control of SO<sub>2</sub> emission during start up and shut down of Sulphuric acid plant, Fume scrubber and additional pre scrubber to scrub off fluorine gases and hydro fluosilicic acid in Phosphoric acid plant &amp; Dual mole scrubbing system for recovery of dust and volatiles in DAP/NP plant. All the above pollution control equipment are working satisfactorily. The Stack monitoring report of various stacks attached to the process plants (SAP, PAP, DAP &amp; AFBC Boiler) for the period from April 2021 to September 2021 is enclosed herewith as Annexure 1(A) to 1(D) for kind perusal.</p> <p>Also, On-line Continuous Emission Monitoring Stations (CEMS) have been installed (SO<sub>2</sub> analyser in SAP Stack, NH<sub>3</sub> analyser in DAP/NP Stacks, PM &amp; HF analysers in PAP Stack and PM, SO<sub>2</sub> &amp; NO<sub>x</sub> analyser in AFBC Boiler stack). Online real-time data from these analysers are transmitted to the RT-DAS server of SPCB, Odisha as well as CPCB, New Delhi.</p>



ii	Ambient air quality Monitoring Station should be set up in the down wind direction as well as where maximum ground level concentration of SPM, SO <sub>2</sub> , Fluorine, Ammonia and HC are anticipated in consultation with the State Pollution Control Board. The monitoring stations should be selected on the basis of mathematical modelling to represent short term ground level concentration, human settlements, sensitive targets etc.	Six Ambient air monitoring stations (four in the Plant & two in nearby villages, Ramnagar and Kharinasi) for monitoring of ambient air quality have been installed in consultation with SPCB, Odisha. The ambient air quality report for the period from April 2021 to September 2021 is enclosed herewith as Annexure 2. Also, three On-line continuous ambient air quality monitoring stations (AAQMS) have been installed in three locations inside factory premises in consultation with SPCB, Odisha. On-line Ambient Air Quality Monitoring Stations are connected to the RT-DAS server of SPCB, Odisha as well as CPCB, New Delhi for real time data transmission.
iii	Dust suppression and dust extraction systems should be provided to control fugitive emission at material handling points. Fugitive emission should be regularly monitored and record maintained. Automatic monitors for detection of ammonia leak should be provided at appropriate locations in the plant.	Electrostatic precipitator (ESP) has been provided in Boiler House and Dry fog dust suppression system has been installed in Coal Handling Plant. Dust suppression system has been provided in strategic locations of material handling e.g transfer points of cross country conveyor. Ammonia leak detectors have been provided in Ammonia Storage area and ammonia handling areas at DAP/NP plant.
iv	There will be no generation of process effluent from Sulphuric acid plant, Phosphoric acid plant and DAP plants. The effluent generated from utilities, spillage, washing and domestic should be treated to conform to MINAS and recycled/ used for green belt development. No effluent shall be discharged outside the premises	Process effluent generated in SAP, DAP and PAP Plants are collected in Guard Pond which is HDPE lined. This effluent is treated in Effluent Treatment Plant of capacity 200m <sup>3</sup> /Hr. The treated effluent is recycled & reused in process. During heavy monsoon and any other exigency, arrangement has been made to discharge the treated effluent after conforming to the standard prescribed by SPCB, Odisha as per Consent to Operate (CTO) Order. The analysis report of treated effluent for the six monthly periods from April 2021 to September 2021 is enclosed herewith as Annexure-3 for kind perusal. Also, on-line Effluent Quality Monitoring Analysers (EQMS) is installed at the outlet of ETP & is connected to the server of SPCB, Odisha as well as CPCB, New Delhi for real time data transmission.
vi	Adequate number of influent and effluent quality monitoring stations should be set up in consultation with the State Pollution Control Board. Regular monitoring should be carried out for relevant parameters. Routine toxicity test of effluent with fish food organisms should also be regularly done at least once a month.	Regular monitoring of treated effluent is being carried out for relevant parameters like pH, Phosphate, Fluoride etc. Routine toxicity test of effluent with locally available small fish varieties is carried out and report of the same for the six monthly periods from April 2021 to September 2021 is enclosed herewith as Annexure 4.



vii	The hazardous solid waste (gypsum and Sulphur sludge) should be disposed off in a scientifically designed landfill site with impervious lining and leachate collection facility. The supernatant from the gypsum pond should be recycled back to the phosphoric acid plant. The design details of the landfill site and long term plan for utilization of gypsum should be firmed up and report submitted to the Ministry for review within six months	A report on design details of the landfill site and long term plan for utilization of gypsum was submitted to the Ministry. Sulphur sludge is recycled as filler in the granulation unit and excess quantity is disposed in scientifically designed landfill site with impervious lining and leachate collection facility. Phosphogypsum is stored in specially designed Gypsum pond which is HDPE lined. The supernatant from the gypsum pond is recycled back to the phosphoric acid plant for making gypsum slurry for wet disposal of phosphogypsum. Hazardous waste management is carried out as per the "Authorisation for Hazardous Waste" issued by State Pollution Control Board, Odisha.
viii	A scientific study should be commissioned to study impact on ground water or leachates from the gypsum pond area. The ground water quality should also be regularly monitored and record maintained.	The ground water quality is regularly monitored, record maintained and reported to SPCB Odisha on monthly basis. Test Wells have been provided at different locations inside Plant, especially around the gypsum pond, effluent holding ponds, Secured engineering land fill site (SELF) etc for ground water monitoring,. The report of two Test Wells located near the Gypsum Pond for the six monthly periods from April 2021 to September 2021 is enclosed herewith as Annexure 5.
ix	The dredging of Mahanadi river bed should be undertaken under the supervision of Odisha Water Resources Department	A corpus fund named as "Water Conservation Fund" has been created by Govt. of Odisha which is utilized by Water Resources Department for different projects including dredging of river bed etc. Till now IFFCO Paradeep Unit has contributed about ₹44.6 Crores to the fund, over the years.
x	Non-chromate system should be used in all the cooling towers to avoid accumulation of chromate sludge.	Non-chromate based chemical dosing system is being followed in all the cooling towers at IFFCO Paradeep Unit.
xi	No activity will be undertaken by the company in the area falling under CRZ III without the prior permission of MoEF & CC/State Govt.	No activity will be undertaken by IFFCO Paradeep Unit, in the area falling under CRZ III without the prior permission of MoEF & CC/ State Govt.



**General Conditions:**

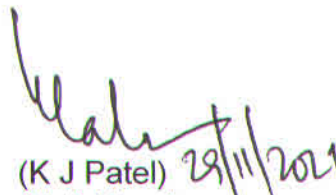
Sr No.	Conditions	Compliance Status
i	The project authorities must strictly adhere to the stipulations made by the Odisha Pollution Control Board and State Government	IFFCO Paradeep Unit obtains Consent to Operate from SPCB Odisha from time to time and adhere to the stipulations made there in. Present Consent to Operate issued by SPCB Odisha in the name of IFFCO Paradeep is valid up to 31.3.2024.
ii	No further expansion or modifications in the Plant should be carried out without prior approval of the Ministry of Environment and Forests.	Noted, any expansion/modification shall be carried out with approval from MoEF & CC / as per Rules.
iii	At no time, the emissions should go beyond the prescribed standards. In the event of failure of any pollution control system adopted by the units, the respective unit should be immediately put out of operation and should not be restarted until the control measures are rectified to achieve the desired efficiency.	Pollution control Systems are working smoothly and emissions are maintained well below the prescribed standard. In the event of any problem with the pollution control system, operation of specific plant is stopped and restarted after rectification of the problem.
iv	Guard Pond (s) of sufficient holding capacity should be provided to cope up with the effluents discharge during the process disturbance. The contributing units should be immediately shutdown and should not be restarted without bringing the system back to normalcy.	Two Guard Ponds of 60,000m <sup>3</sup> & 20,000m <sup>3</sup> capacities with impervious HDPE lining system have been constructed to store the effluent. Adequate preventive measures are taken to address the process disturbances efficiently and quickly.
v	The hazardous wastes should be handled as per Hazardous Waste (Management and Handling) Rules, 1989 of the Environment (Protection) Act, 1986.	Hazardous waste management is carried out as per the "Hazardous Waste Authorisation" issued by State Pollution Control Board, Odisha and as per Environment (Protection) Act, 1986.
vi	The project authorities must comply with the provisions of Manufacture, Storage and Import of Hazardous Chemical Rules, 1989 (as amended on 3 <sup>rd</sup> October 1994). The company must finalise the onsite plan and submit the same to the Ministry before commissioning of the project taking into account the MSI Rules and its amendments.	The provisions of Manufacture, Storage and Import of Hazardous Chemical Rules, 1989 (as amended on 3 <sup>rd</sup> October 1994) is compiled by IFFCO Paradeep Unit. Also, Onsite Emergency Plan has been prepared and accepted by the Directorate of Factories and Boilers, Govt. of Odisha.
vii	Suitable alarm system and standard procedure for transmitting the information on the occurrence of an accident to the proper focal point should be established. Steps should also be taken to ensure access to information on weather conditions prevailing at that time and weather forecast. Wind socks at appropriate locations should be provided.	Alarm system and standard procedures at the time of any incident is practiced as per laid down procedures of Onsite and Offsite Emergency Plans. A weather monitoring station has been installed in plant premises to monitor Temperature, Pressure, and Relative Humidity, Wind speed, Wind direction and rainfall. Wind socks have been provided at appropriate locations inside Plant premises and township area.



viii	Graphs/nomograms indicating special distribution of concentrations of toxic gas during day and night under different stability classes and wind conditions should be prepared and displayed at appropriate locations so as to help the designated Emergency Officer/Team to organize rescue operations in case of accidental release of toxic gases/vapours.	Dispersion models for Ammonia and Chlorine, Dos and Don'ts, MSDS of toxic chemicals and other relevant information are displayed in both English and vernacular languages in appropriate locations. Assembly points are defined. Also safety mock drills on different scenarios including release of toxic gases are carried out at regular intervals.
ix	Necessary approval from the Chief Inspectorate of Explosives, Nagpur should be taken from safety angle with regard to fire and explosion hazards.	Approval from Chief Inspectorate of Explosives has been obtained as per requirement and was submitted to the Ministry.
x	Greenbelt of adequate width and density should be provided to mitigate the effects of fugitive emission all around the plant. A minimum of 25% of the total land acquired should be developed as green belt in consultation with local DFO. A detailed green belt plan should be submitted to the Ministry for review within three months.	Greenbelt has been developed. About 29% of the total land owned by the industry is covered with greenbelt. Further plantation activity is being continued with plantation of around 40,000 saplings per year.
xi	Adequate provisions for infrastructure facilities such as water supply, fuel, sanitation etc. should be ensured for construction workers during the construction phase so as to avoid felling of trees and pollution of water and the surroundings.	Adequate care was taken during construction phase. Also, utmost care is taken by IFFCO Paradeep Unit for protection of flora and fauna in the surrounding.
xii	Occupational Health Surveillance of the workers should be done on a regular basis and records maintained.	Health checkup of workers is carried out at regular intervals as per Factory Act 1948 & Odisha Factory Rules and record maintained.
xiii	The project proponent shall also comply with all the environmental protection measures and safeguards recommended in the EIA and risk analysis report.	The environmental protection measures and safeguards are strictly complied. Utmost priority is being given by IFFCO Paradeep Unit to maintain clean and green surrounding.
xiv	The project proponent should have a scheme for social upliftment in the nearby village with reference to contribution in road construction, education of children, festivals, health centers, sanitation facilities, drinking water supply, community awareness and employment to local people whenever and wherever possible both for technical and non-technical jobs.	IFFCO Paradeep Unit is contributing towards various social welfare measures in nearby villages and localities under CSR activities. Those measures include road construction, education of children, festivals, health centers, sanitation facilities, and drinking water supply and community awareness.
xv	The project authorities will set up separate environmental management cell for effective implementation of all the above stipulations under control of Sr Executive.	Separate environmental management cell has been set up for effective implementation of Environmental Management System. A Senior Executive in the rank of General Manager heads the cell.

xvi	The project authorities will provide adequate funds both recurring and nonrecurring to implement the conditions stipulated by the Ministry of Environment and Forests as well as the State Government along with the implementation schedule for all the conditions stipulated herein. The funds so provided should not be diverted for any other purpose.	Adequate resources are allocated from time to time to implement the conditions stipulated by the Ministry of Environment and Forests as well as the State Government. Sufficient funds is provided by the Management for Environment Protection Measures.
xvii	The stipulated conditions will be monitored by the Regional Office of this Ministry at Bhubaneswar / Central Pollution Control Board/ State Pollution Control Board. A six monthly compliance status report and the monitored data along with statistical interpretation should be submitted to them regularly.	Half yearly compliance report is submitted to the Regional Office of this Ministry at Bhubaneswar on regular basis.

Paradeep  
29.11.2021

  
(K J Patel) 29/11/2021  
(Unit Head)

# **INDIAN FARMERS FERTILISER CO-OPERATIVE LIMITED, PARADEEP UNIT**

## **STACK ANALYSIS REPORT OF DI-AMMONIUM PHOSPHATE PLANT (TRAIN A, B & C) FOR THE PERIOD OF APRIL 2021 TO SEPTEMBER 2021**

	Train - A						Train - B						Train - C					
	Particulate Matter (mg/Nm <sup>3</sup> )			Fluoride (mg/Nm <sup>3</sup> )			Particulate Matter (mg/Nm <sup>3</sup> )			Fluoride (mg/Nm <sup>3</sup> )			Particulate Matter (mg/Nm <sup>3</sup> )			Fluoride (mg/Nm <sup>3</sup> )		
<b>SPCB Standard</b>	<b>100.00</b>			<b>25.00</b>			<b>100.00</b>			<b>25.00</b>			<b>100.00</b>			<b>25.00</b>		
MONTH	MIN	MAX	AVG	MIN	MAX	AVG	MIN	MAX	AVG	MIN	MAX	AVG	MIN	MAX	AVG	MIN	MAX	AVG
Apr-21	75.0	82.0	79.0	8.2	9.0	8.6	72.0	88.0	80.0	8.0	8.8	8.3	76.0	84.0	81.0	8.4	9.2	8.8
May-21	75.0	84.0	80.0	7.8	8.2	8.0	70.0	87.0	80.0	7.8	8.5	8.2	80.0	88.0	83.0	8.2	8.8	8.5
Jun-21	73.0	84.0	79.0	7.9	8.5	8.2	78.0	88.0	83.0	7.8	8.7	8.2	75.0	85.0	81.0	8.0	8.7	8.4
Jul-21	75.0	83.0	79.0	8.3	9.0	8.6	73.0	87.0	81.0	8.0	8.8	8.3	76.0	85.0	82.0	8.3	8.7	8.5
Aug-21	68.0	84.0	77.0	7.8	8.4	8.2	72.0	80.0	76.0	8.2	8.8	8.4	75.0	87.0	81.0	8.4	9.0	8.8
Sep-21	72.0	88.0	81.0	7.9	8.7	8.3	75.0	85.0	80.0	8.4	9.1	8.8	68.0	81.0	75.0	7.5	8.8	8.1
<b>Half Yearly Status</b>	<b>68.0</b>	<b>88.0</b>	<b>79.2</b>	<b>7.8</b>	<b>9.0</b>	<b>8.3</b>	<b>70.0</b>	<b>88.0</b>	<b>80.0</b>	<b>7.8</b>	<b>9.1</b>	<b>8.4</b>	<b>68.0</b>	<b>88.0</b>	<b>80.5</b>	<b>7.5</b>	<b>9.2</b>	<b>8.5</b>



## ANNEXURE - 1(B)

**INDIAN FARMERS FERTILISER CO-OPERATIVE LIMITED, PARADEEP UNIT****STACK ANALYSIS REPORT OF PHOSPHORIC ACID PLANT  
FOR THE PERIOD OF APRIL 2021 TO SEPTEMBER 2021**

	Particulate Matter (mg/Nm <sup>3</sup> )			Fluoride (mg/Nm <sup>3</sup> )		
<b>SPCB Standard</b>	<b>100.00</b>			<b>25.00</b>		
MONTH	MIN	MAX	AVG	MIN	MAX	AVG
Apr-21	68.0	78.0	73.0	12.4	13.1	12.8
May-21	55.0	69.0	62.0	12.8	13.5	13.1
Jun-21	58.0	72.0	65.0	12.4	13.4	12.9
Jul-21	67.0	75.0	72.0	12.8	13.4	13.1
Aug-21	58.0	70.0	65.0	12.5	12.9	12.7
Sep-21	54.0	70.0	64.0	11.7	12.5	12.1
<b>Half Yearly Status</b>	<b>54.0</b>	<b>78.0</b>	<b>66.8</b>	<b>11.7</b>	<b>13.5</b>	<b>12.8</b>

## ANNEXURE - 1 (C)

**INDIAN FARMERS FERTILISER CO-OPERATIVE LIMITED, PARADEEP UNIT****STACK ANALYSIS REPORT OF SULPHURIC ACID PLANT  
FOR THE PERIOD OF APRIL 2021 TO SEPTEMBER 2021**

	TRAIN - I						TRAIN - II					
	ACID MIST (mg/Nm <sup>3</sup> )			SO <sub>2</sub> (Kg/MT of acid produced)			ACID MIST (mg/Nm <sup>3</sup> )			SO <sub>2</sub> (Kg/MT of acid produced)		
<b>SPCB Standard</b>	<b>50.00</b>			<b>2.00</b>			<b>50.00</b>			<b>2.00</b>		
MONTH	MIN	MAX	AVG	MIN	MAX	AVG	MIN	MAX	AVG	MIN	MAX	AVG
Apr-21	Shutdown						19.6	29.8	24.7	0.76	1.34	1.09
May-21	28.9	32.5	30.9	1.13	1.33	1.22	30.9	33.7	32.2	1.23	1.37	1.32
Jun-21	29.8	32.5	31.1	1.26	1.37	1.32	30.8	32.9	31.6	1.26	1.42	1.34
Jul-21	29.7	31.7	30.9	1.16	1.28	1.24	31.4	32.8	32.1	1.27	1.34	1.30
Aug-21	28.9	32.8	31.1	1.11	1.30	1.19	30.8	32.9	31.7	1.19	1.37	1.31
Sep-21	29.8	33.5	31.3	1.21	1.43	1.30	30.8	33.7	32.2	1.34	1.46	1.39
<b>Half Yearly Status</b>	<b>28.9</b>	<b>33.5</b>	<b>31.1</b>	<b>1.11</b>	<b>1.43</b>	<b>1.25</b>	<b>19.6</b>	<b>33.7</b>	<b>30.8</b>	<b>0.76</b>	<b>1.46</b>	<b>1.29</b>



**STACK ANALYSIS REPORT OF AFBC BOILER  
FOR THE PERIOD OF APRIL 2021 TO SEPTEMBER 2021**

	TRAIN - I									TRAIN - II								
	Particulate Matter (mg/Nm <sup>3</sup> )			SO <sub>2</sub> (mg/Nm <sup>3</sup> )			NO <sub>2</sub> (mg/Nm <sup>3</sup> )			Particulate Matter (mg/Nm <sup>3</sup> )			SO <sub>2</sub> (mg/Nm <sup>3</sup> )			NO <sub>2</sub> (mg/Nm <sup>3</sup> )		
<b>SPCB Standard</b>	<b>100.00</b>			<b>600.00</b>			<b>600.00</b>			<b>100.00</b>			<b>600.00</b>			<b>600.00</b>		
MONTH	MIN	MAX	AVG	MIN	MAX	AVG	MIN	MAX	AVG	MIN	MAX	AVG	MIN	MAX	AVG	MIN	MAX	AVG
Apr-21	68.0	80.0	73.0	530.0	570.0	544.0	295.0	328.0	311.0	70.0	85.0	77.0	540.0	560.0	548.0	284.0	314.0	297.0
May-21	63.0	74.0	68.0	520.0	554.0	535.0	280.0	315.0	302.0	70.0	78.0	74.0	520.0	542.0	531.0	295.0	325.0	310.0
Jun-21	52.0	77.0	67.0	524.0	548.0	536.0	290.0	320.0	305.0	58.0	70.0	65.0	500.0	540.0	518.0	304.0	316.0	310.0
Jul-21	62.0	72.0	67.0	528.0	560.0	541.0	290.0	320.0	307.0	60.0	75.0	67.0	510.0	545.0	531.0	308.0	328.0	319.0
Aug-21	48.0	64.0	57.0	525.0	564.0	543.0	310.0	335.0	323.0	67.0	70.0	69.0	528.0	536.0	532.0	318.0	324.0	321.0
Sep-21	52.0	64.0	58.0	520.0	547.0	536.0	320.0	367.0	341.0	55.0	69.0	62.0	530.0	564.0	545.0	340.0	372.0	355.0
<b>Half Yearly Status</b>	48.0	80.0	<b>65.0</b>	520.0	570.0	<b>539.2</b>	280.0	367.0	<b>314.8</b>	55.0	85.0	<b>69.0</b>	500.0	564.0	<b>534.2</b>	284.0	372.0	<b>318.7</b>

**INDIAN FARMERS FERTILISER COOPERATIVE LIMITED, PARADEEP UNIT**  
**AMBIENT AIR QUALITY MONITORING REPORT FOR THE PERIOD OF APRIL 2021 TO SEPTEMBER 2021**

	PM <sub>2.5</sub> (µg/m <sup>3</sup> )			PM <sub>10</sub> (µg/m <sup>3</sup> )			SO <sub>2</sub> (µg/m <sup>3</sup> )			NO <sub>2</sub> (µg/m <sup>3</sup> )			NH <sub>3</sub> (µg/m <sup>3</sup> )		
MONTH	MIN	MAX	AVG	MIN	MAX	AVG	MIN	MAX	AVG	MIN	MAX	AVG	MIN	MAX	AVG
	<b>Location 1: Top of Sewage Treatment Plant Building</b>														
Apr-21	27.0	42.0	34.5	45.0	60.0	52.6	12.0	15.0	13.3	15.0	18.0	16.4	20.0	28.0	24.5
May-21	35.0	43.0	31.5	44.0	64.0	54.4	8.0	12.0	10.3	10.0	15.0	12.8	18.0	28.0	22.8
Jun-21	35.0	40.0	33.9	45.0	64.0	52.9	8.0	13.0	10.5	10.0	16.0	12.5	18.0	24.0	20.5
Jul-21	20.0	45.0	30.8	40.0	65.0	50.0	8.0	13.0	10.5	10.0	16.0	12.5	18.0	24.0	21.0
Aug-21	24.0	38.0	30.1	43.0	60.0	51.0	8.0	12.0	9.9	9.0	17.0	12.9	18.0	24.0	20.9
Sep-21	24.0	40.0	33.9	45.0	64.0	52.9	8.0	12.0	10.4	7.0	15.0	12.0	17.0	25.0	20.6
Half Yearly Status	<b>20.0</b>	<b>45.0</b>	<b>32.5</b>	<b>40.0</b>	<b>65.0</b>	<b>52.3</b>	<b>8.0</b>	<b>15.0</b>	<b>10.8</b>	<b>7.0</b>	<b>18.0</b>	<b>13.2</b>	<b>17.0</b>	<b>28.0</b>	<b>21.7</b>
	<b>Location 2: Near ETP</b>														
Apr-21	34.0	54.0	39.4	49.0	70.0	55.9	14.0	20.0	16.6	13.0	18.0	15.3	48.0	62.0	54.0
May-21	32.0	52.0	39.0	50.0	80.0	58.6	12.0	18.0	15.5	11.0	17.0	13.9	49.0	65.0	57.8
Jun-21	34.0	54.0	38.4	50.0	72.0	56.9	10.0	18.0	13.9	12.0	19.0	16.0	37.0	59.0	45.4
Jul-21	34.0	50.0	39.6	50.0	70.0	59.0	10.0	16.0	13.3	10.0	18.0	13.6	32.0	52.0	41.3
Aug-21	34.0	50.0	39.1	52.0	74.0	58.4	12.0	18.0	14.4	14.0	19.0	16.4	45.0	60.0	51.5
Sep-21	34.0	54.0	38.4	50.0	72.0	56.9	13.0	18.0	14.9	12.0	17.0	14.8	45.0	54.0	49.1
Half Yearly Status	<b>32.0</b>	<b>54.0</b>	<b>39.0</b>	<b>49.0</b>	<b>80.0</b>	<b>57.6</b>	<b>10.0</b>	<b>20.0</b>	<b>14.8</b>	<b>10.0</b>	<b>19.0</b>	<b>15.0</b>	<b>32.0</b>	<b>65.0</b>	<b>49.9</b>
	<b>Location 3: Swarnajayanti Sabhagriha (Near Gate No. 1)</b>														
Apr-21	30.0	45.0	38.3	47.0	64.0	53.5	14.0	18.0	15.9	15.0	20.0	17.4	23.0	30.0	26.4
May-21	28.0	44.0	34.4	46.0	70.0	54.9	9.0	14.0	12.0	11.0	18.0	14.5	24.0	32.0	29.0
Jun-21	28.0	44.0	35.3	48.0	66.0	54.3	8.0	12.0	9.5	12.0	18.0	13.9	16.0	22.0	18.3
Jul-21	28.0	46.0	34.8	45.0	68.0	52.9	9.0	18.0	11.3	11.0	15.0	12.6	20.0	28.0	22.9
Aug-21	28.0	40.0	34.4	40.0	64.0	51.9	9.0	14.0	11.4	12.0	18.0	14.9	20.0	27.0	23.3
Sep-21	28.0	44.0	35.3	48.0	66.0	54.3	10.0	14.0	11.8	10.0	18.0	13.5	16.0	24.0	20.4
Half Yearly Status	<b>28.0</b>	<b>46.0</b>	<b>35.4</b>	<b>40.0</b>	<b>70.0</b>	<b>53.6</b>	<b>8.0</b>	<b>18.0</b>	<b>12.0</b>	<b>10.0</b>	<b>20.0</b>	<b>14.5</b>	<b>16.0</b>	<b>32.0</b>	<b>23.4</b>



MONTH	PM <sub>2.5</sub> (µg/m3)			PM <sub>10</sub> (µg/m3)			SO <sub>2</sub> (µg/m3)			NO <sub>2</sub> (µg/m3)			NH <sub>3</sub> (µg/m3)		
	Location 4: Near Ammonia storage tank														
Apr-21	32.0	52.0	38.0	45.0	64.0	53.1	10.0	15.0	12.0	11.0	19.0	14.5	32.0	42.0	36.9
May-21	30.0	46.0	36.1	48.0	76.0	56.6	9.0	13.0	11.3	9.0	12.0	10.6	28.0	42.0	35.8
Jun-21	30.0	50.0	36.3	46.0	68.0	54.9	9.0	13.0	11.0	7.0	11.0	9.1	24.0	32.0	26.8
Jul-21	30.0	46.0	38.8	48.0	64.0	54.1	8.0	12.0	9.4	7.0	12.0	9.5	20.0	32.0	26.6
Aug-21	26.0	43.0	34.8	45.0	67.0	54.1	10.0	15.0	13.1	12.0	16.0	14.1	26.0	35.0	30.1
Sep-21	30.0	50.0	36.0	46.0	68.0	54.9	12.0	16.0	13.9	9.0	16.0	11.6	24.0	34.0	29.8
Half Yearly Status	26.0	52.0	36.7	45.0	76.0	54.6	8.0	16.0	11.8	7.0	19.0	11.6	20.0	42.0	31.0
	Location 5: RAMNAGAR Village														
Apr-21	30.0	30.0	30.0	52.0	52.0	52.0	10.0	10.0	10.0	12.0	12.0	12.0	16.0	16.0	16.0
May-21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Jun-21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Jul-21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aug-21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sep-21	28.0	28.0	28.0	47.0	47.0	47.0	9.0	9.0	9.0	14.0	14.0	14.0	16.0	16.0	16.0
Half Yearly Status	28.0	30.0	29.0	47.0	52.0	49.5	9.0	10.0	9.5	12.0	14.0	13.0	16.0	16.0	16.0
	Location 6: KHARINASI Village														
Apr-21	26.0	26.0	26.0	48.0	48.0	48.0	8.0	8.0	8.0	10.0	10.0	10.0	15.0	15.0	15.0
May-21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Jun-21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Jul-21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aug-21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sep-21	26.0	26.0	26.0	43.0	43.0	43.0	8.0	8.0	8.0	13.0	13.0	13.0	14.0	14.0	14.0
Half Yearly Status	26.0	26.0	26.0	43.0	48.0	45.5	8.0	8.0	8.0	10.0	13.0	11.5	14.0	15.0	14.5

Note: - Ambient Air Monitoring was not done at Ramnagar & Kharinasi village due to COVID 19

## INDIAN FARMERS FERTILISER CO-OPERATIVE LIMITED, PARADEEP UNIT

### ANALYSIS REPORT OF TREATED TRADE EFFLUENT FOR THE PERIOD OF APRIL 2021 TO SEPTEMBER 2021

	pH			SS in mg/l			TDS in mg/l			COD in mg/l			Oil & Grease in mg/l			Fluoride as F in mg/l			Phosphate as P in mg/l		
<b>SPCB Standard</b>	<b>6.5 to 8.5</b>			<b>100.00</b>			<b>2100.00</b>			<b>250.00</b>			<b>10.00</b>			<b>2.00</b>			<b>5.00</b>		
MONTH	MIN	MAX	AVG	MIN	MAX	AVG	MIN	MAX	AVG	MIN	MAX	AVG	MIN	MAX	AVG	MIN	MAX	AVG	MIN	MAX	AVG
Apr-21	7.50	7.70	7.60	20.0	24.0	22.0	1620	1720	1670	32.0	36.0	34.0	4.8	6.1	5.6	1.7	1.8	1.7	3.4	3.7	3.5
May-21	7.50	7.80	7.62	20.0	28.0	24.0	1650	1780	1710	32.0	38.0	34.0	6.0	6.7	6.4	1.5	1.8	1.6	4.0	4.6	4.3
Jun-21	7.50	7.90	7.70	18.0	24.0	21.0	1580	1720	1650	25.0	30.0	28.0	4.5	5.8	5.1	1.4	1.7	1.6	3.3	4.0	3.7
Jul-21	7.60	7.80	7.70	24.0	32.0	28.0	1720	1840	1785	32.0	38.0	35.0	6.0	6.7	6.4	1.6	1.8	1.7	4.2	4.7	4.4
Aug-21	7.50	7.80	7.66	18.0	26.0	22.0	1620	1740	1686	30.0	36.0	33.0	5.2	6.1	5.7	1.2	1.7	1.5	3.5	4.5	4.0
Sep-21	7.60	7.80	7.70	20.0	25.0	23.0	1580	1720	1655	30.0	35.0	33.0	4.9	5.7	5.4	1.4	1.7	1.5	3.7	4.3	4.0
<b>Overall Status</b>	<b>7.50</b>	<b>7.90</b>	<b>7.66</b>	<b>18.0</b>	<b>32.0</b>	<b>23.3</b>	<b>1580</b>	<b>1840</b>	<b>1693</b>	<b>25.0</b>	<b>38.0</b>	<b>32.8</b>	<b>4.5</b>	<b>6.7</b>	<b>5.8</b>	<b>1.2</b>	<b>1.8</b>	<b>1.6</b>	<b>3.3</b>	<b>4.7</b>	<b>4.0</b>



## INDIAN FARMERS FERTILISER CO-OPERATIVE LIMITED, PARADEEP UNIT

### ANALYSIS REPORT OF TOXICITY TEST WITH TREATED EFFLUENT OF STP & STORM WATER DRAIN OUTLET FOR THE PERIOD OF APRIL 2021 TO SEPTEMBER 2021

S. NO.	MONTH	DATE	SAMPLE LOCATION	SPECIFIED NORM.	OBSERVATION	REMARKS
1	APRIL	6.4.2021	Treated effluent of STP	Min. 90% survival of fish after 96 hrs	100% survival of fish observed	Conforms the specified norm
2	APRIL	20.4.2021	Storm water Drain Outlet	Min. 90% survival of fish after 96 hrs	100% survival of fish observed	Conforms the specified norm
3	MAY	4.5.2021	Treated effluent of STP	Min. 90% survival of fish after 96 hrs	100% survival of fish observed	Conforms the specified norm
4	MAY	18.5.2021	Storm water Drain Outlet	Min. 90% survival of fish after 96 hrs	100% survival of fish observed	Conforms the specified norm
5	JUNE	2.6.2021	Treated effluent of STP	Min. 90% survival of fish after 96 hrs	100% survival of fish observed	Conforms the specified norm
6	JUNE	16.6.2021	Storm water Drain Outlet	Min. 90% survival of fish after 96 hrs	100% survival of fish observed	Conforms the specified norm
7	JULY	6.7.2021	Treated effluent of STP	Min. 90% survival of fish after 96 hrs	100% survival of fish observed	Conforms the specified norm
8	JULY	20.7.2021	Storm water Drain Outlet	Min. 90% survival of fish after 96 hrs	100% survival of fish observed	Conforms the specified norm
9	AUGUST	4.8.2021	Treated effluent of STP	Min. 90% survival of fish after 96 hrs	100% survival of fish observed	Conforms the specified norm
10	AUGUST	19.8.2021	Storm water Drain Outlet	Min. 90% survival of fish after 96 hrs	100% survival of fish observed	Conforms the specified norm
11	SEPTEMBER	7.9.2021	Treated effluent of STP	Min. 90% survival of fish after 96 hrs	100% survival of fish observed	Conforms the specified norm
12	SEPTEMBER	21.9.2021	Storm water Drain Outlet	Min. 90% survival of fish after 96 hrs	100% survival of fish observed	Conforms the specified norm

Note: Treated effluent of ETP is being reused in process for rock grinding in ball mill of PAP Plant.

## INDIAN FARMERS FERTILISER CO-OPERATIVE LIMITED, PARADEEP UNIT

### ANALYSIS REPORT OF LEACHETS FROM TESTWELLS AROUND GYPSUM POND FOR THE PERIOD OF MARCH 2021 TO SEPTEMBER 2021

	pH			Phosphate as P (mg/l)			Fluoride (mg/l)		
	MIN	MAX	AVG	MIN	MAX	AVG	MIN	MAX	AVG
MONTH	DESCRIPTION: Test Well no.5 (at the South west side of Gypsum pond) )								
Apr-21	7.30	7.80	7.58	0.60	0.70	0.65	0.60	0.90	0.75
May-21	7.30	7.80	7.53	0.50	0.90	0.65	0.50	1.20	0.78
Jun-21	6.80	7.60	7.18	0.60	0.90	0.75	0.60	1.00	0.78
Jul-21	7.50	7.80	7.63	0.30	0.70	0.50	0.40	0.70	0.58
Aug-21	7.20	7.50	7.40	0.30	0.60	0.45	0.30	0.70	0.53
Sep-21	7.30	7.80	7.58	0.60	0.70	0.65	0.40	0.90	0.65
<b>Half Yearly Status</b>	<b>6.8</b>	<b>7.8</b>	<b>7.5</b>	<b>0.3</b>	<b>0.9</b>	<b>0.6</b>	<b>0.3</b>	<b>1.2</b>	<b>0.7</b>
	DESCRIPTION: Test Well no.6 (at the east side of Gypsum pond)								
	MIN	MAX	AVG	MIN	MAX	AVG	MIN	MAX	AVG
Apr-21	7.20	7.40	7.30	0.50	0.80	0.60	0.40	0.70	0.55
May-21	7.50	7.90	7.73	0.50	0.70	0.63	0.60	0.90	0.75
Jun-21	7.20	7.50	7.40	0.50	0.80	0.65	0.60	0.80	0.70
Jul-21	7.20	7.70	7.45	0.30	0.60	0.48	0.50	0.90	0.75
Aug-21	7.10	7.80	7.48	0.40	0.70	0.58	0.50	0.80	0.60
Sep-21	7.20	7.40	7.30	0.50	0.80	0.60	0.30	0.80	0.60
<b>Half Yearly Status</b>	<b>7.1</b>	<b>7.9</b>	<b>7.4</b>	<b>0.3</b>	<b>0.8</b>	<b>0.6</b>	<b>0.3</b>	<b>0.9</b>	<b>0.7</b>