Journal of Engineering Research and Application Volume 1, December 2022,
http://dx.doi.org/10.55953/JERA.2022.2102 pp. 12-18

Effects of Air Pollutions on Surface Water Contamination

Md Shareeb [1*], Srijan Saroj [1], Surya Pratap Singh [1], Sandeep Yadav [1]
Mekharaj Kunwar Chhetri [1], Anuj Kumar Sharma [1]
Greater Noida Institute of Technology , Greater Noida , UP
Dr. A.P.J Abdul Kalam Technical University , Lucknow , UP
mdshareeb973@gmail.com

Abstract
The observe objectives to become aware of the important thing reasserts of air pollution withinside the greater noida location in numerous aspects, especially in phrases of calculating the Air Quality Index. CO, NO2, SO2, PM2.5, PM10, O3, NH3, and Pb are the fundamental air pollution taken into consideration withinside the improvement of the Air Quality Index. The AQI can be used to decide the extent of publicity someone is uncovered to on a day-by-day basis, in addition to what treatment plans may be utilised to relieve the publicity to greater Noida air pollutants. The facts gathered on contaminants and the ensuing Air Quality Index show that citizens withinside the Greater Noida location are uncovered to good sized ranges of air pollutants, which is likewise applicable to indoor air pleasant. We know that Pollution is a defined as the Air purifiers which could efficaciously decorate air pleasant may be useful on this situation. The AQI can be used to decide the extent of publicity someone is uncovered to on a day-by-day basis, in addition to what treatment plans may be utilised to relieve the publicity to indoor air pollutants. We know that if the particle size is less than 10 mm size it may be more harmful effect of human being. They can get deep into your lungs & blood streams. In our study to check the water quality test of local canal it is a part of ganga river we have selected One point (greater Noida knowledge park |||) of this canal and test the water or to compare the standard parameter.

Keywords:
Pollution • water pollution • Concentration • Chemical parameter • physical parameter • Human health.

Introduction

Air pollution, in simple terms can be elaborated as the entry of foul substance and bio-particles in the air surrounding us (usually troposphere). It is the problem on global level and is the 5th most reason for human deaths overall in the world. Human deaths are occurring more by air pollution related problems than other, major reasons of deaths. Pollution is the introduction of harmful materials into the enviroment, these harmful materials are called pollution. The process in which the people from rustic area shift to the town in search of a brighter future , thus rusting in a drustic increment in population of people living in the cities is called urbanization. Understanding the present scenario and utilizing the lasted available resources and technology we can actually grasp the grip of air pollution and so indoor air pollution. Indoor air pollution also points towards the air contamination level within and around buildings and structures. Nonetheless increasing air pollution can lower the common air pollutants on personal level and reduce the indoor health concern's risk. In India, around 2.4 crore people are in touch with asthma including 13% children. The exposure towards urban air, polluted air and the smoke of tobacco like-wisely increases the chances of pulmonary diseases (chronic) Within a period of years passed, it could not be wrong to say that the increasing number of breathing diseases can be contributed due to increasing pollution in environment.

Research Methodology

Data collection method

There are some steps to follows to attain the objective of our study:

a) In order to Examine,current location of collected from greater noida knowledge park III.
b) Water sample collect from the yamuna river for testing.
c)
d) Water is puts on the private area where as the contact with the enviroment during the period of march 2022 to may 2022 and Proper sampling procedure was followed while collecting the samples.
e) Air quality index is note everyday from stating time to ending time means that working on trending.
f) To analyse the work done in respective fields and need of new technology to fight indoor air pollution

AQI OF KNOWLEDGE PARK III , UPPCB FROM 19 APRIL TO 26 APRIL

TABLE 1:- AQI

POLLUTANT	AVERAGE	MINIMUM	MAXIMUM
PM 2.5	246	92	414
PM 10	361	177	467
NO2	74	24	199
NH3	6	5	7
SO2	42	19	67
OZONE	12	3	42

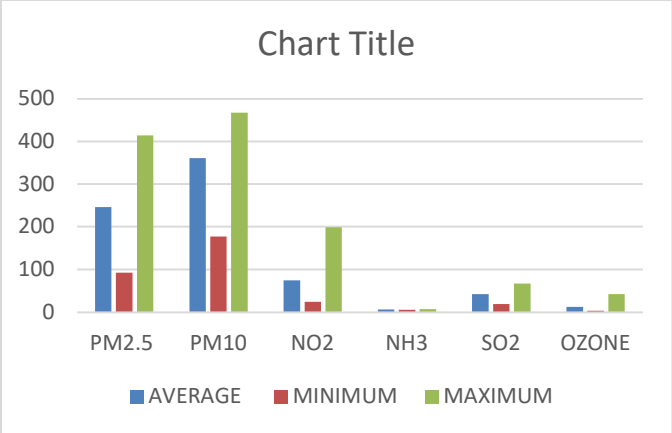


TABLE 2:- AQI

POLLUTANT	AVERAGE	MINIMUM	MAXIMUM
PM 2.5	175	63	353
PM 10	340	220	423
NO2	48	21	84
NH3	6	4	8
SO2	34	26	41
C0	6	3	57
OZONE	18	7	205

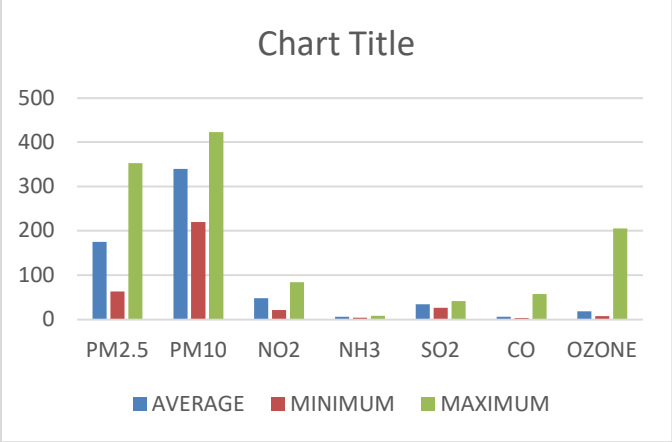


TABLE 3:- AQI

POLLUTANT	AVERAGE	MINIMUM	MAXIMUM
PM 2.5	169	60	308
PM 10	362	202	500
NO2	60	21	98
NH3	5	5	6
SO2	32	24	43
CO	38	10	60
OZONE	48	8	63

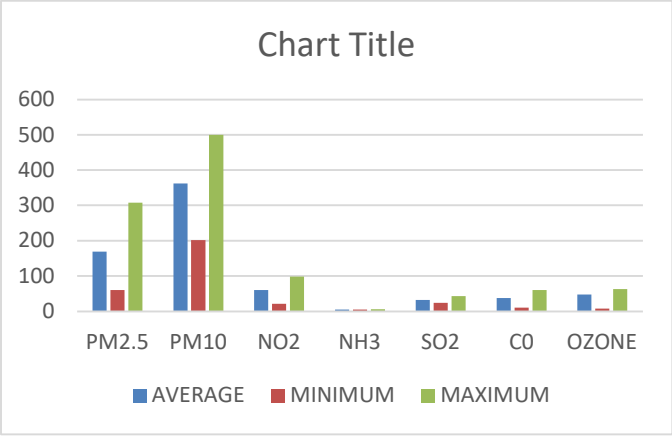


TABLE 4:- AQI

POLLUTANT	AVERAGE	MINIMUM	MAXIMUM
PM 2.5	134	27	317
PM 10	262	107	456
NO2	35	14	63
NH3	5	4	7
SO2	40	21	49
CO	37	12	51
OZONE	154	8	222

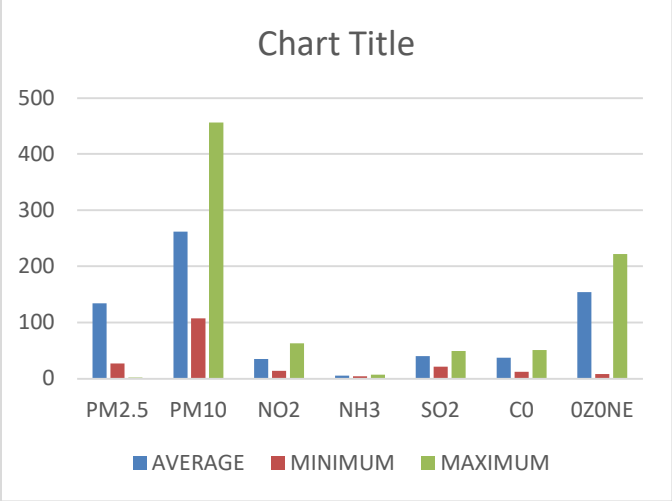


TABLE 5:- AQI

POLLUTANT	AVERAGE	MINIMUM	MAXIMUM
PM 2.5	112	43	223
PM 10	155	143	312
NO2	81	191	108
NH3	5	4	6
SO2	30	20	51
CO	36	15	52
OZONE	128	8	166

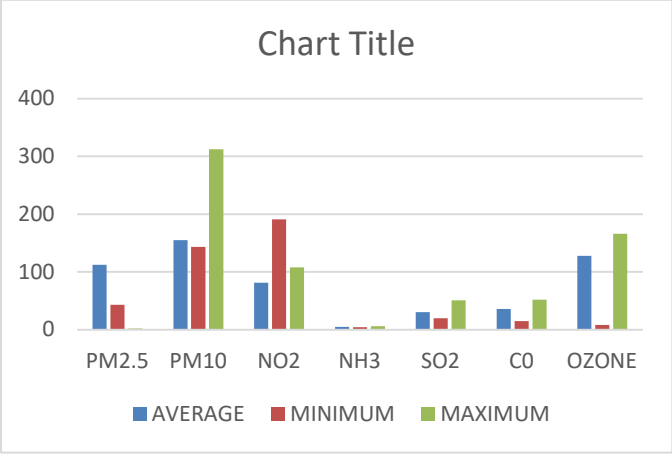


TABLE 6:- AQI

P0LLUTANT	AVERAGE	MINIMUM	MAXIMUM
PM 2.5	198	58	398
PM 10	310	212	422
NO2	73	107	21
NH3	4	3	5
SO2	52	32	62
CO	71	10	72
OZONE	116	7	120

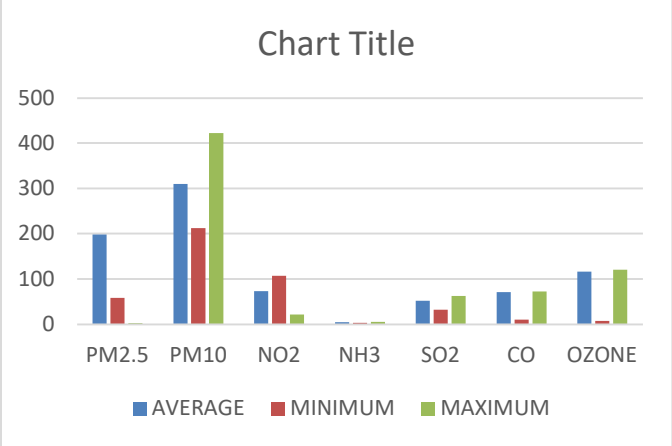


TABLE 7:- AQI

POLLUTANT	AVERAGE	MINIMUM	MAXIMUM
PM 2.5	132	51	262
PM 10	230	146	323
NO2	37	23	59
NH3	5	4	6
SO2	43	32	58
CO	40	30	58
OZ0NE	121	22	150

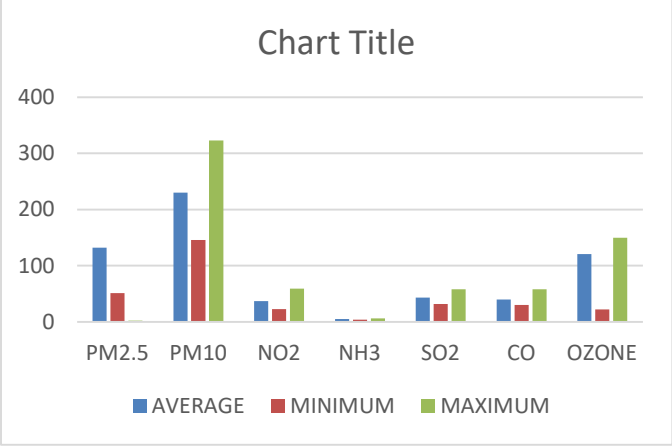
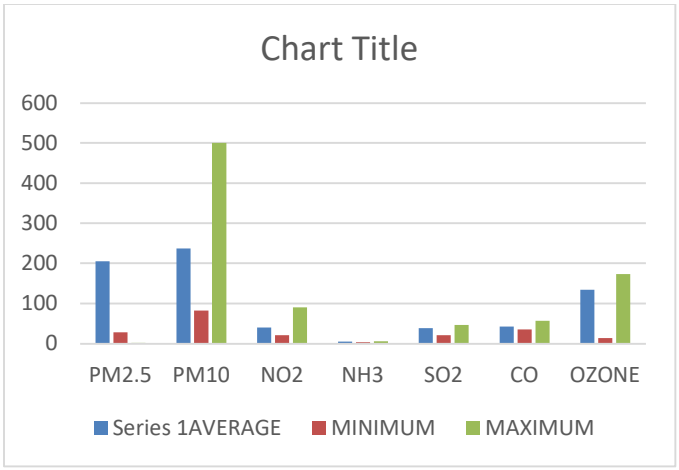


TABLE 8:- AQI

POLLUTANT	AVERAGE	MINIMUM	MAXIMUM
PM 2.5	205	28	441
PM 10	237	82	500
NO2	40	21	90
NH3	5	3	6
SO2	38	21	46
CO	42	35	57
OZONE	134	14	173



Air Quality Index Levels of Health Concern	Numerical Value	Meaning
Good	0-50	Air quality is considered satisfactory, and air pollution poses little or no risk.
Moderate	51-100	Air quality is acceptable; however, for some pollutants there may be a moderate health concern for a very small number of people who are unusually sensitive to air pollution.
Unhealthy for Sensitive Groups	101-150	Members of sensitive groups may experience health effects. The general public is not likely to be affected.
Unhealthy	151-200	Everyone may begin to experience health effects; members of sensitive groups may experience more serious health effects.
Very Unhealthy	201-300	Health alert: everyone may experience more serious health effects.
Hazardous	> 300	Health warnings of emergency conditions. The entire population is more likely to be affected.

Determination of water quality parameter

Chloride (Cl):-Chloride in water is determined using preprogrammed method, chloride water. Chloride in the sample is titrated to the equivalance [point byargentometric titration using a silver titrant.

Hardness

Hardness of water is a measure of its capacity to precipitate soap and is caused mainly by the presence of divalent cation of calcium (ca2+) and magnesium (mg2+). Other multivalent cation also causes water hardness such as Fe3+, Sr2+, Zn2+ etc

TYPES OF HARDNESS: -

PARMANENT HARDNESS

Permanent hard water contains chlorides ansd sulfate of calcium and magnessium.

TEMPORARY HARDNESS

Temporary hard water contains only bicarbonate of magnessium and calcium. It can be removed by boiling.

TDS (Total dissolved solid)

TDS level less than 300 mg / litre is considered as excellent.
TDS level is between 300 and 600 mg / litre is good.
TDS level is between 600 and 900 mg / litre is fair.
TDS level is between 900 and 1200 mg / litre poor.
TDS level more than 1200 mg / litre is unacceptable.

PH (Potential of Hydrogen)

PH meter is an instrument used to measure acidity or alkalinity of a solution, also known as ph.

METHOD OF TEST TO PH

Take 10 ml water sample in the test bottle.
Add 3-4 drop of ph reagent -1 (PH-1) and mix well.
The colour that form is compared with the PH colour chart.

ALKALINITY

alkalinity is a refers to the measure of the capacity of water to nutrilized the acids.
It can measure the biocaronate , carbon di oxide, hydroxids ions, and carbonate naturally present in te water.

METHOD OF TEST OF ALKALINITY

Take 25 ml of water sample in the bottle.
Add 4-5 drops of total alkalinity reagent-2 and mix until an orange yellow colour develops.
Add tptal alkalinity reagent-1 , shake well after each drops until the colour change s from orange yellow to orange red.
Count the number of drops of total reagent -1 required for colour change.

Total Alkalinity = no of drops x 5 (p.p.m interms of CaCo3)

RESULT :- TOTAL HARDNESS = 70X2 = 140 ppm**,** PH = 8**,** ALKALINITY = 70X5=350 ppm

CONCLUSION

Air pollution is hazardous to both and environment. The facts set decided on from the UPPCB internet site is first pre – processed to isolate pollutant parameters NO2 , CO , SO2 , NH3 , PM2.5 , PM10.

Air pollutants forecasting is split into stages. The first step calculates the AQI for all contaminants in a given day. The 2nd segment determines the AQI threshold cost with the aid of using averaging preceding AQI results. The very last preferred AQI furnished to the general public is commonly the most of all AQI results. By evaluating the brink cost with the common of the previous months` readings, air pollutants for the times withinside the selected month may be forecasted. The outcomes appear to be promising. More study is being done to include other environmental variables.

REFERENCES

1. Adakole, JA, and Oladimeji AO. “The effects of Pollution on Phytoplankton in a stretch of River Kubanni, Zaria, Nigeria.”: Proceedings of the 15th Annual Conference of Fisheries Society of Nigeria (2006): 151-158
2. Boulton, CE. “Assessment of Elemental and Microbial Quality of Lake Efi in Bayelsa State, Central Niger Delta, Nigeria” Journal of Environmental Treatment Techniques 3 (2012): 71-75.
3. Chigor, Vincent N. “Water Quality Assessment: Surface Water Sources used for Drinking and Irrigation in Zaria” Science Business Media 184 (2012): 3389-3400.
4. DOE. “Environmental Water Quality Standard,” 1991.
5. Garg, Sak. “Water Supply Engineering” (1977).
6. Howard SN. “Studies on the Physicochemical Status of two Water Bodies at Sagar City under Anthropogenic Influences” Advances in Applied Science Research 3 (2011): 231-244.
7. Igwe, PU, Chukwudi CC, Ifenatuorah FC and Fagbeja IF. “A Review of Environmental Effects of Surface Water Pollution.” 4 (2017): 128-137**.**
8. National Air quality index UPPCB