-

ESSENCE - International Journal for Environmental Rehabilitation and Conservation

Volume V: No. 2 2014 [121 – 125] [ISSN 0975 - 6272]

[www.essence-journal.com]

Proceedings of National Conference

"Environmental Conservation and Clean India Programme" December 2014, India

Industrial pollution: geographical analysis – Saharanpur city

Jyoti Singh and Ashu Singh

Received: October 04, 2014 | **Accepted**: December 09, 2014 | **Online**: December 31, 2014

"It isn't pollution that's harming the environment. It's the impurities in our air and water that are doing it." – Dan Ouayle

Industries are the major source of pollution. Besides desired production, there are numerous undesired outputs from the factories like industrial wastes, polluted water, toxic gases, chemicals precipitates, aerosols, ashes and smokes etc. which pollute air, water, land, soils etc. and thus degrade the environment. The industrial development, directed to accelerate the pace of economic growth, though may be economically significant but the after effects are certainly undesirable. The adverse effects of industrialization may change the overall character of natural system and the chain effects some times become suicidal for human society. Majority of the impacts of industrialization are related to pollution and environmental degradation.

For correspondence:

S.V. Jain College, Saharanpur, India

Study Area

Following work is based on Saharanpur city lying in the heart of lthe district located on 29° 58' north latitude and 77.55° east longitude at mean sea level 283 meter. The city experiences healthy climate and all facilities which are essential for the boom of industrial centre. It is one of the important towns of western U.P. and has earned nation wids as well as International reputation for it's industries like wood carving, I.T.C., Star Paper Mills etc. Due to the rapid industrial growth, growth of population along with growth of pollution makes necessary to study the relationship between industries and environment.

Industrial pollution

The city being an administrative and industrial centre is able to attract manufacturing activities on a large scale. As such is not free from the menace caused as a consequence of industrial emissions. The state pollution control board (SPCB) is monitoring establishments in the city of I.T.C. and Star Paper Mills. At present city Saharanpur has 1505 industrial units out of which 1320 units are of small scale and 185

units are of large scale. Some of the major industries established in Saharanpur are before independence like Star Paper Mill, I.T.C. and Wood Carving industry. In Saharanpur found industries develop in an unplanned manner and are found all over the city. Resulting in following pollutions:

a) **Land pollution**: It is caused by the solid waste given out by the industries. The waste thrown by the wood carving industries becomes a breeding place for mosquitoes & flies. The solid waste & liquid waste thrown by chemical and food industries in agricultural land causes the loss of fertility of that land.

Industrial wastes include huge amount of abandoned items which create several environmental problems. For example, huge quantities of bagase produced in sugar mills which are heaped in the vicinity of sugar mills.

b) A**ir pollution**: The sugar mill, chemical factories, I.T.C. & Paper Mill creates maximum air pollution. The Govt. labour colony located adjacent to sugar & textile mill is highly effected by the air pollution released by this mill.

Air Pollution due to I.T.C.:- In the process of cigarette making some of the very harmful gases are released in the atmosphere like SO_2, NO_x & CO_2 also including the dust of the tobacco. However to prevent these gases and suspended particular in the atmosphere chimneys are installed which release these gases in higher layer of atmosphere.

Air Pollution due to Paper Mill: The main effect of the air pollution by paper mill is in the form of 'Burada'. It is in the powder form and passes out in a large amount, directly into the atmosphere which causes diseases related with lungs problem.

Source	H_2S	CH_3SH	$(CH_3)_2S$	Particulars	Type of control
Digester below	0.1 – 07	0.0 – 5.3	0.9 – 3.8	Negligible	Untreated
Smelt tank	-	-	-	17	Uncontrolled
Lime kiln	1	Neg.	Neg.	.7	Scrubber
Recovery Furnace	3.6	3	3	50	Scrubber & Precipator
Multiple effect evaporation	1.2	0.04	N.A.	Neg.	Untreated
Evaporators	0-0.5	0.003-0.03	Neg.	Neg.	Black liqour oxidation
Oxidation tower	N.A.	N.A.	0.1	Neg.	Black liquor oxidation
Total	6.4	8.34	6.9	75.7	

Table: Gaseous Effluents from Pulp & Paper Industry
(Pounds per ton of pulp)

SO_2 causes diseases related to eyes, throat and lungs when its concentration crosses the permissible limit of 10 PPM in the air for 8 hours of exposure. No causes respiratory problem, gum inflamation, internal bleeding, oxygen deficiency, pneumonia and lung cancer. Sudden leakages of harmful and poisonous gases from chemicals and gas plants pollute the air to such an extent that hundreds of people die within no time.

c) **Water pollution**: The industrial liquid waste from paper mill, chemical factory, sugar mill, I.T.C. & textile mill, which is untreated is drained into the Paodhoi and Dhamola river. Now it is no more a river but rather a drain.

Water Pollution due to Sugar mill: In sugar production the basic wastages are sheera, hugadi, filter soil, ashes given away from the boiler. Even though some of these wastages are reused in different plants. The main cause of pollution is the waste water which comes from these plants untreated. The following table shows the main amount of pollution:

S. No.	Parameter	Values	Standards Prescribed by U.P.P.C.B.
1.	PH	7.5	5.5 – 9.0
2.	Temperature 0°C	-	40°C
3.	Colour	Not specific	-
4.	Total Suspended solids	80.0	100
5.	Total solids	390.0	2100
6.	Biological oxygen	28.0	30
7.	Demand (at 27° C-3 days)	-	-
8.	Chemical oxygen demand	150.0	-

Total pollution = 965.5 mg/1 – 2279 mg/1
Average = 2.36 mg/1
Note: All values are in mg/1 – expect PH or stacked otherwise.
This table shows that there is high rate of solid waste in water which cause the pollution.

Various types of chemical substances cause irreparable damage to both plants and animals including man. Polluted water is the major cause for the several dangerous diseases such as cholera, T.B., Jaundice etc.

d) N**oise pollution**: The machines, vehicles and generators create high sound pollution. This is very high in the industrial area, which affects the workers most. During the peak hours the sound pollution is measured so high inside the factory. As the result many workers are suffering from hard of hearing and they speak very loud.

Besides most of industries in Saharanpur are noise polluting. The wood carving units & textile mill (on large scale) creates a lot of noise and all are almost located in the residential areas.

Noise pollution on human include speech interference, annoyance, sleep interference and related after effects and problems. An intensive study to measure the Noise Induced Hearing Loss (NIHL) among the factory workers in the textile, automobile, fertilizer and chemical industries in the city reveals the fact that one out of every four factory workers suffers from incurable NIHL and 10% of the people suffered from NIHL due to traffic noise.

Level of Noise in Day & Night	**Industrial Area**	
	Delhi Road	**Dehradun Road**
Day time noise by WHO (db)	75	75
Day time noise level in Saharanpur (db)	76.8	79.40
Night time noise by WHO (db)	65	65
Night time noise level in Saharanpur (db)	57.45	60.30

Table: Ambient Noise level in Saharanpur city

Remedies:

1. Controlled and judicious use of chemical fertilizers and pesticides, insecticides and herbicides.
2. Proper disposal of industrial and urban wastes.
3. Use of industrial effluents for irrigation purposes after proper treatment.
4. To conduct extensive survey and regular monitoring of the existing level of air pollution and to predict on the basis of existing information.
5. To make efforts to search alternative less harmful products such as solar powered etc.
6. To improve the existing devices of air pollution control and to make efforts to invent new effective devices to control air pollution.
7. solid waste dumped on roadsides should be put into use for generating power or upliftment of plots.

8. Control of water pollution requires several remedial measures involving the interest of individuals, community governments at national and international levels.
9. The industrial units must be obliged to treat industial effluents before discharging them into water bodies.
10. Intensity of noise may be reduced by several devices e.g. enclosure of machinery with sound absorbing materials.