

BEFORE THE NATIONAL GREEN TRIBUNAL

(PRINCIPAL BENCH), NEW DELHI

M.A No. 561 /2013

M.A No. 205/2013

IN

Application No. 56(T_{HC}) of 2013

And

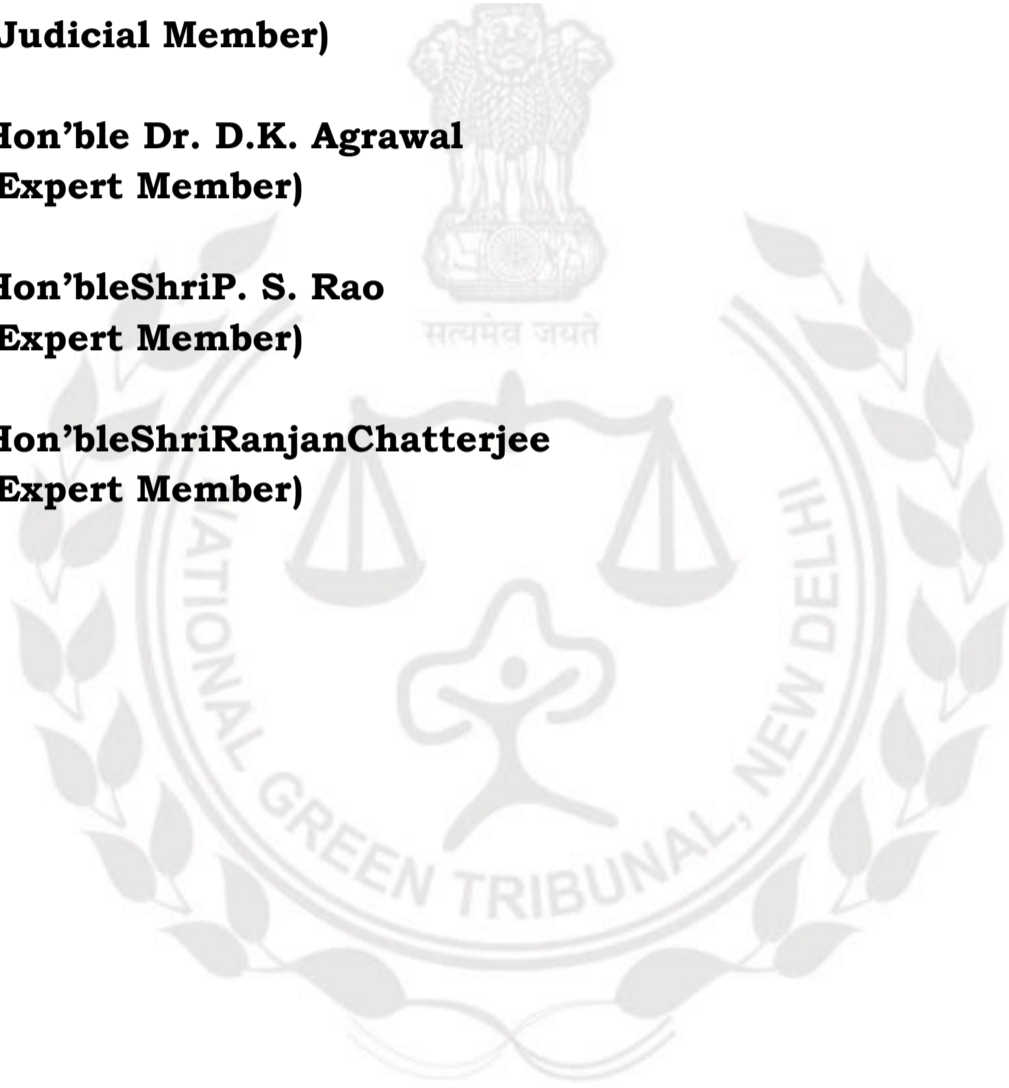
Application No. 57(T_{HC}) of 2013

12TH DECEMBER, 2013

NGT

CORAM:

- 1. Hon'bleShri Justice Swatanter Kumar
(Chairperson)**
- 2. Hon'bleShriJusticeU.D. Salvi
(Judicial Member)**
- 3. Hon'ble Dr. D.K. Agrawal
(Expert Member)**
- 4. Hon'bleShriP. S. Rao
(Expert Member)**
- 5. Hon'bleShriRanjanChatterjee
(Expert Member)**



NGT

Application No. 56(T_{HC}) of 2013

**Satish Kumar
V/s
Union of India &Ors.**

B E T W E E N:

1. Satish Kumar,
Son of Late Shri Ram Pat,
R/o House No. 320,
Village and Post Mundka,
New Delhi

....Applicant

A N D

1. Union of India
Through its Secretary,
Ministry of Environment & Forests,
ParyavaranBhavan
CGO Complex, Lodhi Road
New Delhi – 110 003.
2. Govt. of NCT of Delhi
Through the Secretary.
3. The SDM
Punjabi Bagh
New Delhi.
4. The Commissioner
Delhi Police.
5. The SHO
PS :Nangloi
New Delhi.
6. Delhi Pollution Control Committee
Through the Chairman
4th Floor, ISBT Building
Kashmiri Gate, Delhi.

AND

Application No. 57(T_{HC}) of 2013

**Mahavir Singh
V/s
Union of India &Ors.**

B E T W E E N:

1. MahavirSingh,
R/o Village Neelwal,
Post Office – Tikri-Kalan
Delhi – 110 041

.....Applicant

AND

1. Union of India
Through its Secretary,
Ministry of Environment & Forests,
ParyavaranBhavan,
CGO Complex, Lodhi Road,
New Delhi – 110 003.
2. Govt. of NCT of Delhi
Through the Secretary
Delhi Secretariat
Indraprastha Estate
New Delhi 110 002.
3. Delhi Pollution Control Committee
Through the Chairman
4th Floor, ISBT Building
Kashmiri Gate
Delhi – 110 006.
4. Govt. of NCT of Delhi
Through its Secretary
Ministry of Industries
Room No. A-710

Delhi Secretariat
New Delhi 110 002.

5. Municipal Corporation of Delhi (MCD)
Through Its Commissioner
Town Hall
Delhi – 110 006.
6. State of Haryana
Through Its Secretary
State Govt. Secretariat
Chandigarh.
7. Haryana State Pollution Control Board
Through Its Chairman
C-11, Sector – 6
Panchkula, Haryana..... Respondents

Advocates appeared:

- Appellant:** Mr. Saket Sikriwih Mr. Sudeep Dey,
Advocate
- Respondent No. 1:** Ms. Neelam Rathore, Advocate and Mr.
Vikramjeet, Advocate
- Respondent No. 2 and 4:** Mr. D. Rajeshwar Rao, Advocate
- Respondent No. 6:** Mr. Manjit Singh, Advocate
Ms. Geeta Luthra, Sr. Advocate, Mr.
Rohit Bhardwaj, Advocate and Mr.
Harish Malik, Advocate
Dr. P.k. Jain, Central Road Research
- Respondent No. 6&7
(in Application No.
57(T_{HC})/2013:** Mr. Narender Hooda, AAG and
Mr. D.P. Singh, Advocate
Mr. Aayush Chandra for DPCC
Mr. Balendu Shekhar, Advocate for
North MCD
Mr. Harish Malik, Advocate for
Interveners
Ms. Natasha Sehrawat for DPCC

Date: 12th December, 2013

J U D G M E N T

Justice U.D. Salvi (JM)

1. These Applications arise from the Writ Petitions filed in the Hon'ble High Court of Delhi, at New Delhi, bearing Writ Petition (Civil) Nos. 3013/2010 & 7302/2009 respectively.

2. Mr. Satish Kumar resident of village Mundka, New Delhi, being aggrieved by Environmental pollution caused by burning of plastic, leather, rubber, motor engine oil and such other waste materials and continuous operation of illegal industrial units dealing with such articles on agricultural lands in village Mundka, New Delhi despite his representations made to several authorities, had moved the Hon'ble High Court of Delhi in Writ Petition NO. 3013/2010 for the writ of mandamus directing the authorities concerned- Respondents therein namely: 1. Union of India, 2. Government of NCT of Delhi (Delhi Secretariat), 3. Delhi Pollution Control Committee, 4. Government of NCT of Delhi (Department of Industries), 5. Municipal Corporation of Delhi (MCD), 6. State of Haryana, 7. Haryana State Pollution Control Board; to stop the operation of illegal industrial units on the said agriculture lands and for restoration of Environment along with grant of compensation to affected residents of Village Mundka, New Delhi.

3. Writ Petition No.(Civil) 7302/2009 filed by one Mahavir Singh, resident of Village Neelwal, Tikri-Kalan, Delhi for a similar relief of curbing menace of pollution caused by the illegal and unauthorized industrial activities of shredding, cleaning, recycling,

burning of plastic, rubber articles or such other waste materials in the villages of Nangloi, Ghewara, Neelwal, Mundka, Kamruddin Nagar, Tikri-Kalan, Ranhaura etc. spread over a stretch of land along the Delhi-Haryana border.

4. Orders passed by the Hon'ble High Court of Delhi from time to time therein reveal that the authorities were awakened to take cognizance of the illegal industrial activities going on in the said villages despite the order dated 7th May, 2004 passed by the Hon'ble Supreme Court of India in the case of *M.C. Mehta Vs. Union of India & Ors*: (2004) 6 SCC 588, whereby all the industrial activities falling under category 'F' of the Master Plan of Delhi, 2001 in all residential/ non-confirming areas of Delhi were ordered to be stopped and closed down.

5. Order dated 6th January, 2010 passed by the Hon'ble High Court of Delhi reveals the resistance faced by the sealing team, which was to seal such offending industrial units, on the pretext that the Mundka area was notified as an industrial area by the Industries Department. A notification dated 17th September, 2007 of the Industries Department, which brought village Mundka in non-confirming industrial area was brought to the notice of the Hon'ble High Court. However, it was pointed out that the industrial activities carried out in the said area were highly polluting and the industry had to be closed down forthwith. The Commissioner of Industries was directed to explain whether such industrial activity was permitted and, if they are polluting, whether they had obtained permission from the Pollution Control Board.

6. On 26th May, 2010, it appears, a statement was made by the Learned Counsel for the State in the said petitions that the unauthorized industrial activities in two villages namely Ghewara&Nangloi had been stopped in terms of the order passed by the Hon'ble Apex Court and efforts would be made to take steps in that regard in respect of Village Mundka, New Delhi and there shall be compliance of the orders passed within a period of two months. In view of such statement the Learned Senior Counsel, Mr. V. K. Rao, for the petitioner in Writ Petition(Civil) No. 3013/2010 sought leave to withdraw his Writ Petition and the said Writ Petition was dismissed as withdrawn. However, Learned Senior Counsel Mr. V.K. Rao, was granted liberty to assist the Court in Writ Petition(Civil) No.7302/2009 as the reliefs sought in both the writ petitions were against the common evil.

7. Orders passed thereafter from time to time in Writ Petition(Civil) No. 7302/2009 reveal how the limbs of the state machinery were falling short in curbing the menace of environmental pollution caused by the Industrial activities due to lack of coordination between them. These orders bring to light a statement made by the Government of NCT of Delhi that 128 *bighas* of agricultural land in village Mundkawere clandestinely and unauthorisedly converted to industrial land asa consequence of which ecology was disturbed, and the proceedings under Section 81 of the Delhi Land Reforms Act, 1954 for taking over possession of the structures in occupation of such industrial units along with the land would be initiated and brought to logical end. However, it was

brought to the notice of the Hon'ble High Court that some people continued to brazenly engage in industrial activities involving burning of plastic and rubber. Photographs revealing such activities were placed on record. Consequently, the Respondents were directed to see that no such activity was carried on.

8. Order dated 22nd February, 2011, which is reproduced here in below was passed by the Hon'ble High Court to curb the menace of causing pollution

“Having heard the Learned Counsel appearing for the parties, we are only inclined to direct that if certain person/ industrial unit owners are still obstinate and are carrying out the industrial activities which cause pollution, it becomes obligation on the part of the Government of NCT of Delhi or appropriate authority to proceed against them under the appropriate enactment by not only launching criminal prosecution but by also taking such action as is permissible in law so that the structures may be sealed or even brought down/ demolished /repossessed. When we say so, we only mean that the State has the statutory power to stop the activity and if structure is used for a different purpose other than the purpose that was given permission or if a structure is erected without the permission, appropriate action is warranted.

Let appropriate action be initiated within a period of eight weeks after taking recourse to requisite survey of the area in question.”

The Hon'ble High Court of Delhi, however, continued to monitor the situation till passing of the order dated 6th February, 2013 transferring the Petitions to the National Green Tribunal with a hope that the executive action would fructify in positive results.

9. The Record reveals that by the order of the Hon'ble Supreme Court of India a monitoring committee comprising of Chief Secretary, Government of NCT, Delhi, Vice-Chairman, DDA,

Commissioner of Police, Delhi, Commissioner, Municipal Corporation, Delhi for stoppage of illegal industrial activities was constituted; and in its meeting held on 8th December, 2010 the following action plan was chalked out:

A. Action on industries operating in non-conforming areas and following Master Plan was to be taken under the Delhi Development Act by DDA in developed areas of NCT and in other areas.

B. Municipal Corporation of Delhi (MCD) was also to take action as per the Delhi Municipal Corporation Act.

C. Delhi Pollution Control Committee was to take action against the polluting industries as per the provisions of the Environmental Laws.

E. Commissioner of Industries was to submit a report in the Hon'ble Supreme Court detailing the decisions taken in the meeting and was to seek directions, if any, from the Hon'ble Apex Court on future course of action after consulting the Law Department vide copy of the minutes of the meeting at annexure K(2)- status report of SDM, Punjabi Bagh, dated February, 2011 in Writ Petition No. 7302/2009.

10. However, it appears that despite the actions initiated by the public authorities against offending industrial units, the menace of burning plastic, rubber and leather leading to serious environmental hazard persisted in some measure.

11. Upon transferring of these petitions to us the proceedings were renumbered as OA Nos. 56 & 57 of 2013 and notices were issued to the parties at oral request of the Learned Counsel appearing for the Applicant in Application No. 56 of 2013. The Municipal Corporation of Delhi(North)was directed to be impleaded as Respondent in the said Application vide order dated 3rd April, 2013.

12. We noticed from the submissions made on behalf of the Applicant that despite the order of the Hon'ble Supreme Court dated 6thJanuary, 2010,some units still carried on the activities of burning of plastic and leather. Directions were therefore issued to the Police Commissioner, NCT, Delhi that no leather and plastic burning was to be allowed in the area of Mundka and Tikri-Kalan. The status report in respect of the action taken was also called for.

13. On 29th April, 2013, an association of about six hundred dealers of PVC and plastic waste registered as "PVC Plastic Waste Dealers Association" under the societies Registration Act, 1860 was ordered to be joined as a party Respondent in Application No. 57 of 2013 -vide order passed in M.A. No. 205/2013. Status report placed before us on 21st May, 2013 clearly revealed that plastic and other waste was being taken to the places at Mundka and Nangloivillages. The photographs placed on record showed burning of plastic as well as marks of its burning left on the ground. We noticed failure of the Police despite directions of the Hon'ble High Court of Delhi to ensure surveillance or vigil over the area by installing pickets or by other means in order to stall the transportation of waste material. We recorded our displeasure in respect of conduct of the police

officer who had gone with the other members of the committee to the spot of burning but had not even bothered to collect soil samples from where burnt marks were noticed for further forensic investigation in order to ascertain whether burning there was of plastics and/or of any other materials. We reiterated the order of the Hon'ble High Court of Delhi as well as the interim order passed by us and further directed the police to ensure that no plastic was burnt in that area and no plastic waste was carried out from that area- vide order dated. Later on, however, the soil samples from the aforesaid location where burnt marks were noticed were collected and duly sent to Forensic Science Laboratory for further forensic investigation.

14. Learned Counsel appearing for the Applicant brought to our notice that new technology is available for use of plastic waste in road construction. At the oral request we directed the Central Road Research Institute, New Delhi and Central Institute of Plastic Engineering and Technology, Chennai to be impleaded as party Respondents in order to get from them an authoritative comment on the use of plastic waste in road construction. This matter was then posted for final hearing on 10th July, 2013.

15. The Applicant in (M. A. No. 205/2013) moved an Application (M.A. No. 561/2013) for seeking directions allowing the members of PVC and Plastic Waste Dealers Association, newly impleaded party respondent to continue their activities on 29th June, 2013. On 10th July, 2013, these petitions along with M. A. No. 56/2013 were finally heard.

16. None of the parties disputed the environmental damage caused by unregulated crude burning of plastic, rubber and such other articles akin to plastics due to release of obnoxious gases namely Dioxin and Furan, which are carcinogenic in nature,therefrom. Newly added party PVC and Plastic Waste Dealers Association (for short referred to as “PWD Association”),however, distanced itself from the burning activities except to the extent of their involvement in the business of segregating plastic waste in Village Mundka and surrounding areas. They contended that about fifty thousand people were engaged in the activity of segregation of plastic waste directly or indirectly and made their living therefrom, and the plastic waste so segregated by them was sent for recycling.

17. According to the PWD Association, they are dealers in plastic waste who were situated in the PVC market at Jwalapuri and who were required to be shifted therefrom on account of the fire which gutted the market in 1995 and settled at Tikri-kalan, 5km away from village Mundka; and despite the acquisition of land at Tikri-kalan, they were not allotted and put in possession of the alternative premises and were left in limbo without any site for settlement of their business; and the circumstantial compulsions have led them to carry on their activities from the places presently occupied by them. They further disputed that the photographs on record showed burning of plastics by any one of their members at the sites in their occupation and held by them for the purpose of carrying on their business as aforesaid.

18. Learned Counsel appearing for the PWD Association submitted that these petitions have been filed with malafide intentions to wreak vengeance and there is nothing specific in the report of analysis of the samples to connect their members with the menace of burning of plastic as the samples were collected by the committee from khasra No. 126/15 and 126/16 at village Mundka belonging to one Mr. Harpal and Mr. Balbir. She further submitted that the members of the PWD Association are merely engaged in the activity of segregation of plastic for the purposes of recycling as the plastic is non-biodegradable and can be reused, and their activity does not in any manner cause any harm to the environment.

19. The Report/Test Certificate of the analysis of the samples collected from the places at village Mundka dated 24th June, 2013 unerringly points out that the samples submitted for analysis in sealed condition upon the chemical analysis gave the following results:

Sample 1: Mixture of soil and ash of partially burnt remains- such as waste plastic products of PVC wire, electrical/electronic components made out of phenol formaldehyde, polyethylene terephthalate (PET) and polybutylene terephthalate (PBT) Glass waste and carbide bits, glass wool and fabrics coated with silicone elastomers, nitrile rubber pieces etc.

Sample 2: Mixture of soil and ash of partially burnt remains- such as waste plastic products of PVC wire, electrical/electronic components made out of phenol formaldehyde, polyethylene

terephthalate(PET) and polybutylene terephthalate(PBT) Glass waste and carbide bits, glass wool and fabrics coated with silicone elastomers, nitrile rubber pieces etc.

Sample 3: Black ash and few copper wire pieces containing chlorine indicates that the source of burnt ash maybe from halogen containing polymer.

Sample Marked "RKD": Mixture of soil and ash of partially burnt remains such as waste plastic products of PVC wire, electrical/electronic components made out of phenol formaldehyde, polyethylene terephthalate(PET) and polybutylene terephthalate(PBT) Glass waste and carbide bits, glass wool and fabrics coated with silicone elastomers, nitrile rubber pieces etc.

The Report thus provides unquestionable evidence of the fact of burning of plastic waste and the related scraps at the locations from where the samples were collected.

20. Admittedly, the members of PWD Association were dealing with the plastic scrap at village Mundka and as such were having the custody of plastic scrap for the purposes of segregation and its eventual transportation to the recyclers. It is not their case that they handed over any plastic scrap to any third party other than the recyclers of plastic or that plastic waste was pilfered or otherwise dealt with or disposed of. According to them none of the plastic waste remained at this site and all was transported to the recyclers.

21. PWD Association placed onrecord purchase and sale invoices of some of its members pursuant to the liberty granted to do so at the time of reserving the judgment. According to the PWD Association all that was brought in for segregation was sold off to the recyclers. A quest in that regard led to the revelation of the following data:

M/s	Plastic purchased (kg)	Plastic sold (kg)
Md. Ibrahim Mumtaj	92823	90608
Ahmed and Co.		
Natraj Plastic	9950	9950
Shankar Lal and Bros.	56820	94319
Dharam Pal Plastics		56820
Irfan and Sons	13047	58675
New Hariom plastics	54125	14155
Nagpal& Sons	106570	67010
Kunal Plastic	17400	17275
Raju Plastic	20088	18890
Total:	370823	427702

However, it needs to be noticed that the record pertains to transactions of nine firms during the period between August and December 2012, and the purchase bills include items like scrap steel, old paper etc. Furthermore, there is no tally between the quantities of plastic scrap purchased and sold even to the extent that quantity of plastic scrap sold was much higher than what had been purchased by some firms. What happened to the non marketable plastic waste after segregation cannot be understood. This picture portrayed by the record produced by the PWD

Association completely belies the myth of its contention and reveals completely unregulated activity involving plastic waste.

22. Photographs on record reveal bags containing plastic waste lying heaped with patches of blackend soil in the vicinity. These revelations if read with Section 114 of the Indian Evidence Act point out the involvement of plastic waste dealers in the burning of plastic. There is nothing on record to impute malafides to the locals as attributed by PWD Association. There could not have been burning of plastic/rubber waste on such scale as noticed from the photographs unless the same was imported within the limits of Villages of Mundka and Nangloi. Going by their words, regard being had to the course of natural events, human conduct, and public and private business, none other person can be held responsible for burning of the plastic in or about the village Mundka except the dealers handling the plastic waste.

23. A glance at the Status Report dated 29th April, 2013 and the annexures thereto filed by the Additional Commissioner of Police, West District, New Delhi brings to light fact of storage of huge quantity of plastic waste material in both agricultural and residential lands in or around village Mundka for the purposes of its segregation. A diagrammatical projection of the activities carried on at the said places gives a bird eye view of how the segregated waste is responsible for causing environmental pollution as under:

Plastic items which are recovered from computer electronic/electrical and medical waste are burnt in open spaces to extract different types of materials like copper, mercury, silver and Iron with consequent release of obnoxious gases in the atmosphere.

Plastic waste is also cut and ground with heavy cutters and grinding machines and then washed with chemicals using ground water. These activities generate huge dust, plastic particles, noise and unwholesome drainage of chemicals with resultant pollution of ground water. Soil also gets polluted as a result of such activities. There is a third category of plastic waste which is of no commercial use that being non-recyclable and this finds way to bricklins and boilers for being used as a fuel. Resultantly, the environment gets polluted with obnoxious gases released from burning of such material. Photographs annexed to the report on record bear testimony to such harmful activities carried on at the village Mundka.

24. Status Report dated 18th May, 2013 filed by the Learned Court commissioner, Mr. Sudeep Dey, Advocate along with the photographs annexed thereto, corroborates the grievances made by the applicants and brings to light un-regulated activities of the plastic waste dealers. Large amount of black smoke billowing out of the fire seen in the photographs bears out the fact that substantial quantity of waste was being burnt at the places seen in the photographs. It certainly does not look like traditional burning of soil done by the farmers. Nobody is expected to indulge in such activities unless he has specific intention of destroying/disposing of the waste material. The only plausible reason for such menace to persist is unregulated activity of segregation and burning of plastic waste in and around the villages Nangloi and Mundka.

25. In the instant case the members of the PWD Association by their own showing are dealing with the plastic waste, and in the process are admittedly handling the work of segregation of plastic. Annexure 'F' to the Application - M. A. No. 561/2013 reveals how the recycling of plastic is carried out in 5 steps: (1) plastic collection, (ii) manual sorting, (iii) chipping, (iv) washing, (v) pelleting. It further reveals that manual sorting involves work of

segregation of the plastic scrap into PET (polyethylene terephthalate), HDPE (high-density polyethylene and other (which include the variety of co-polymer and PVC) from other than scrap materials like rock, Nail, metals etc. All these find its reflection in the result of analysis noted herein above and tend to suggest that even the work of segregation of plastic waste, which is part of the process of recycling of plastic waste, is being carried out recklessly by burning the plastic in open in order to access the metals.

26. Plastic is a synthetic material made from a wide range of organic polymers such as polyethylene, polyvinylchloride (PVC), nylon etc. Legally speaking, its definition is coined at Rule 3(l) of the Plastic Waste (Management and Handling) Rules, 2011 as follows:

“Plastic” means material which contains as an essential ingredient a high polymer and which at some stage in its processing into finished products can be shaped by flow.

Going further through the Rules there is definition of Plastic Waste at Rule 3(m) as follows:

“Plastic Waste” means any plastic product such as carry bags, pouches or multilayered plastic or sachet etc. Which have been discarded after use or after their intended life is over.

27. Plastic is environmentally quite stable and as its description would suggest it is adaptable to change or variety in environment and as such is virtually non-biodegradable. This quality of plastic-durability and light weight coupled with its comparatively cheap production cost makes it a favorite choice of many for bottling and

packing purposes. Most of such plastic materials are discarded after single use and become garbage. Studies have shown the following principle types of plastics found in the waste:-

Plastic made of:	Used in:
1. Polyethylene (PE)	Trash bags, storage bags, shopping bags
2. Polyvinyl chloride (PVC)	used in bottles, packaging and containers.
3. Polyethylene tetrathalate (PETE)	used in beverage battles and similar containers.
4. Polystyrene (PS)	light spongy material used for product trays and hot beverage cups, for meat, eggs etc.
5. Polypropylene (PP)	hot straws, yogurt containers, margarine tubs and special bags

Manufacturing of plastic involves various chemical processes and utilization of variety of chemical compounds and additives including phenols, amines and esters, antioxidants, UV and light stability improvers, antistatic agents, and heat stabilizers, which impart the finished product specific characteristics for its indented

use. Consequently, these additives along with the polymeric material have potential to be released into the environment as a result of chemical reactions in the process of its degradation and the degraded products on release cause significant health and environmental concerns.

28. Extent of environmental havoc caused by non-biodegradable and durable nature of the plastic in the environment has been brought to the notice of the world through a Report published in (Barnes et al., 2009). It focuses the attention of the environmentally conscious public to one of the discovery of the Great Pacific Garbage (GPG) patch made by Charles Moore in late 1990. GPG is a layer of rubbish floating on Pacific Ocean between California and Hawaii over an estimated area of about 3.4 million sq. kms the size of Europe. It consists of plastic waste almost everything from large abandoned fishing nets, plastic bottles to tiny particles of plastic. Though, the monitoring of plastic waste and research into its impact are still in its infancy, the implications of it are certainly worrying. Studies have shown that the very non-biodegradable nature of the plastics clogs the natural cycles- both physico chemical as well as biological, if recklessly littered and are injurious to the animals which devour it.

29. Plastic Waste is readily combustible and as such readily offers a temptation to dispose it off by burning if it cannot be effectively handled and recycled or the metal used in making of the plastic article cannot be accessed easily. More often, therefore, the plastic waste is burnt under open and uncontrolled fire conditions at low

temperature, which generates black plumes of smoke containing toxic volatilization products including greenhouse gases such as methane and carbon oxides. By-products of plastic combustion are airborne particulate emission (soot) and solid residue ash (black carbonaceous colour). Several studies have demonstrated that soot and solid residue ash possess a high potential of causing significant health and environmental concerns. Soot so generated is accompanied with volatile organic compounds (VOCs), semi-VOCs, smoke (particulate matter), particulate bound heavy metals including lead, cadmium, chromium and copper, polycyclic aromatic hydrocarbons (PAHs), polychlorinated (PCDFs) and dioxins, which have the ability to travel thousands of kilometres, depending on prevailing atmospheric conditions before it drops back to earth and thus enters into the food chain. Composition of by-products of plastic combustion with respect to its type and concentration depends on the combustion temperature and the flame residence time. A study of the combustion of polyethylene (both low and high density polyethylene) at different operating conditions detected more than 230 VOCs and semi- VOCs, especially olefins, paraffin, aldehydes and light hydrocarbons including benzo(a)pyrene and 1, 3, 5 trimethylbenzene.

30. Toxicity of combustion products generated from burning of plastics has been evaluated by various researchers under experimental conditions. Significant amount of pollutants of environmental and health concern including carcinogens such as PAHs, nitro- PAHs and dioxins have been identified in the airborne

particulate emissions. Further, these particulates have been found to be highly mutagenic. PAHs in the range of 8-340 ppm have been observed in the soot which is significant enough to cause cancer. Di-(2- ethylehexyl) phthalate (DEHP), one of the compounds among the plasticizers used in plastic manufacturing, has been described by US Environmental Protection Agency (USEPA) as a probable human carcinogen, a potential endocrine disruptor and is believed to be harmful by inhalation, generating possible health risks and irreversible effects. Researchers have also found high concentration of persistent free radicals (unstable and highly reactive molecules) both in soot and the solid residual ash which are considered to be very important in the creation of adverse health effects especially to human lungs.

31. The emissions of greatest concern during open burning of plastics are dioxins and furans, which even in small quantities are a health concern, being associated with endocrine disruption, heart disease, cognitive and motor disabilities, as well as being a known human carcinogen. Humans can be exposed to dioxins through plants, or through meat, as they concentrate in animal fat (scientific Journal: C2P2, 2010). This suggests that the unregulated burning of plastics in open on or in agricultural land as in the present case is great environmental concern as dioxin generated through it is likely to enter the food chain and passed on to human population. Thus, it has potential to impact wide population through food chain as well as directly through inhalation of smoke.

32. On one hand the plastic waste, if recklessly littered, handled, recycled, or disposed off inflicts perennial injury to the environment as aforesaid in as much as the remains of injurious polymers continue to linger behind in the soil as in the present case. On the other hand the very virtues of plastic including its recyclable nature makes it a very pliable material which can be widely put to use in making a variety of articles ranging from household articles to sophisticated machineries in present times. Are we therefore to oust such material from use which on littering or unregulated disposal turns its virtue into vice? Technological advances have answers to this pertinent question, which would enable sustainable development as envisaged in Section 20 of the National Green Tribunal Act, (NGT Act) 2010. Firstly, we have to discipline ourselves to remain in tune with nature's cycles and secondly, the wisdom lies in turning its vices into virtues – waste into utility.

33. Plastic waste can be disposed off either by anyone or more of the three ways: recycling, burial, incineration. **Recycling:** it begins with the exercise of collecting a mix of plastics and thereafter its sorting into the plastics of six types. Sorted out is thereafter converted into flakes or pellets. Sorting of plastic is, therefore, labourintensive and, hence, expensive. Thus, the cost and accuracy of sorting are crucial elements in recycling of plastics and consequent making of plastics having different performances characteristics processed into a final product. **Burial:** this can be achieved by employing plastic waste for land filling however this has

its limitations as the plastics being virtually non- biodegradable (Scientific estimations give life span of plastic material between 100 to 1000 years in land fills) retain their volume and eventually consume a disproportionate amount of land fill space. Some additives such as plasticizers known as phthalates used in plastics are hazardous substances and as such provoke concern as they are likely to migrate from the plastics into the leachate. **Incineration:** at temperatures exceeding 1000°C in an enclosed space there is complete breakdown of plastics including obnoxious by-products of its combustion namely, dioxins and furans. Employing this technology the developed countries have put to use municipal solid waste for production of electricity by burning garbage in waste-to-energy facility. What remains as a residue in sorting of plastic waste can be conveniently disposed off in high temperature incinerators.

34. Central Institute of Plastic Engineering and Technology, Chennai has placed before us its view point in the form of Status Report on use of plastic waste in road construction. Likewise, study material which figured in Indian Roads Congress-July, 2013 on the use of waste plastic in hot bituminous mixes has been made available to us. Use of Plastic in road construction, it reveals, has been successfully done in India at several places since 2002. Laboratory as well as field performance studies/investigation carried out in India identify following advantages in using waste plastic in bituminous mixes.

- Higher resistance to deformation.

- Higher resistance to water induced damages.
- Increased durability and improved fatigue life.
- Improved stability and strength.
- Saving of bitumen.
- Natural Disposal of plastic waste in environment friendly manner.

A reference to such beneficent ways of disposal of plastic waste as aforesaid is found in Rule 6 (h) of the Plastic Waste (Management and Handling) Rules, 2011.

35. From the aforesaid discussion it can be seen that the plastic and the waste generated from its use need not be baneful for the environment and eventually the mankind if it is properly handled and disposed off under regulatory regime. The Plastic Waste (Management and Handling) Rules, 2011 were framed in exercise of the power conferred under Section 3, 6, and 25 of the Environment (Protection) Act, 1986, to provide for such regulatory regime in order to achieve the goal of sustainable development as envisaged under the NGT Act, 2010. The Rule 9(b) thus framed requires registration of any person recycling or proposing to recycle any plastic waste with the State Pollution Control Board or Pollution Control Committee in respect of the Union Territory.

36. Pertinently, the standards for the plastic waste management and the responsibilities in that regard have been spelt out in rule 6 of the said rules as follows:

(a) Recycling, recovery or disposal of plastic waste shall be carried out as per the rules, regulations and standards stipulated by the Central Government from time to time;

(b) Recycling of plastics shall be carried out in accordance with the Indian Standard: IS 14534:1998 titled as Guidelines for Recycling of Plastics, as amended from time to time;

(c)The municipal authority shall be responsible for setting-up, operationalisation and co-ordination of the waste management system and for performing the associated functions, namely:- (i) to ensure safe collection, storage, segregation, transportation, processing and disposal of plastic waste; (ii) to ensure that no damage is caused to the environment during this process; (iii) to ensure settling up of collection centers for plastic waste involving manufacturers; (iv) to ensure its channelization to recyclers; (v) to create awareness among all stakeholders about their responsibilities; (vi) to engage agencies or groups working in waste management including waste pickers, and groups working in waste management including waste pickers, and (vii) to ensure that open burning of plastic waste is not permitted;

(d) For setting-up plastic waste collection centers, the municipal authority may ask the manufactures, either collectively or individually in line with the principle of Extended Producer's Responsibility (EPR) to provide the required finance to establish such collection centre;

(e) Recyclers shall ensure that recycling facilities are in accordance with the Indian Standard: IS 14534:1998 title as Guidelines for Recycling of plastic and in compliance with the rules under the Environment (Protection) Act, 1986, as amended from time-to-time;

(f) The concerned municipal authority shall ensure that the residues generated from recycling processes are disposed of in compliance with Scheduled II(Management of Municipal Solid Wastes) and Schedule III(Specifications for Landfill Sites) of the Municipal Solid Wastes (Management and Handling)Rules, 2000 made under the Environment (Protection) Act, 1986 as amended from time-to-time;

(g)The municipal authority shall incorporate the said rules in the Municipal bye-laws of all the Urban Local Bodies;

(h)The municipal authority shall encourage the use of plastic waste by adopting suitable technology such as in road construction, co-adopting suitable technology such as in road construction, co-incineration etc. The municipal authority or the operator intending to use such technology shall ensure the compliance with the prescribed standards including pollution norms prescribed by the competent authority in this regards.

37. Plastic Waste(Management and Handling)Rules, 2011 make it abundantly clear that any activity involving manufacturer and recycling has to be a regulated affair. It is more so, because the process involved, if un-regulated, would affect the air, water and

soil, all three which go to make the environment as envisaged under Section 2(a) of the Environment (Protection) Act, 1986.

38. As observed herein before the activities undertaken by PWD Association and its members cannot be said to be an innocent mercantile affairs simpliciter. It involves collection, storage, segregation, transportation, processing and disposal of plastic waste and it is incumbent upon the dealers of plastic waste not to compromise the safety of environment for any reason whatsoever. While undertaking any of the said activities, none of the members of PWD Association have come out with the case that the business they carried out was duly registered as required under the Plastic Waste (Management and Handling) Rules, 2011. Even the recyclers to whom the plastic waste is being handed over are also required to be duly registered with Pollution Control Committee under Rule 9 of the Plastic Waste (Management and Handling) Rules, 2011. Handing over of the plastic waste to un-registered recyclers as such is unwarranted by the Law.

39. Rule 6 of the Plastic Waste (Management and Handling) Rules, 2011 carves out a special role for the Municipal Authority in setting up, operationalize and coordinate the waste management system and in performing the associated functions. It also casts responsibility on the Municipal Authority for setting up a collection system for plastic waste. The Municipal Authority is expected to work out the modalities of a mechanism for collection of plastic waste through manufacturers within its limits or through its own agency. The Municipal Authority has to ensure that the

residues generated from the recycling processes are disposed of in accordance with law and is required to incorporate specific rules in their bylaws for plastic waste management.

40. Writ Petition (civil) No. 3013/2010 was dismissed as withdrawn by the Petitioner as the grievances raised therein were identical to those involved in the Writ Petition (civil) No. 7302/2009, more particularly, both the petitions concerned environmental pollution caused due to burning of plastic and rubber, and enforcement of rights relating to environment. Pertinently, Learned Senior Counsel, Mr. V. K. Rao appearing for the Petitioner Mr. Satish Kumar in Writ Petition (civil) No. 3013/2010 was granted liberty to assist the court in Writ Petition (Civil) No. 7302/2009. It therefore does not lie in the mouth of the PWD Association to say that the Petitioner in the Writ Petition (civil) No. 3013/2010 has no *locus-standi* to file the status report in the present case. Nevertheless, Mr. Satish Kumar, resident of Village Mundka, continues to be affected by the ill effects of pollution caused at Village Mundka and as such is a person aggrieved within the meaning of Section 18(2)(e) of the NGT Act.

41. As regards their contention that they are helpless dealers of plastic waste forced to settle on the land occupied by them on account of lack of allotment of alternative premises as promised, it needs only to be observed that such contention does not give right to anyone of such dealers to indulge in any illegality leading to environmental damage. The issue raised on this count is misplaced as the only concern of this Tribunal is to deal with the issue relating

to environmental protection and enforcement of any legal right relating to environment and to give relief and compensation to person and property and for matters connected therewith or incidental thereto.

42. Lastly, it will have to be noted that the Applicants have merely quoted the ill effects of unregulated handling of plastic waste or its burning in the open space without giving specific instances which can give dimensions of the damage caused to the individuals and to the environment in particular. However, the fact remains that there has been pollution caused due to unregulated handling of plastic waste and its burning in the said villages/areas and it has damaged the environment. Certainly the plastic waste dealers are the source of this pollution and as a polluter they are required to bear the burden of restoring the environment.

43. To quantify the damage caused due to unregulated handling of plastic waste and its burning in the said villages it is necessary to have before us the following particulars.

1. The extent of area in use and occupation of each plastic waste dealer.
2. Amount of plastic waste handled by each of the plastic waste dealer over the years since the occupation of the area for their business.
3. Amount of plastic waste not fit for recycling.

4. Any other data relevant for the purposes of the quantification of the damages caused.

44. Before passing final orders we must also give thought to the spread of environmental damage caused on account of unregulated activity of plastic waste handling and disposal. While, considering this aspect it needs to be understood what is environment, both legally and scientifically.

Section 2(a) of the Environment (protection) Act, 1986 defines environment as under:

- (a) “environment” includes water, air and land and the inter-relationship which exists among and between water, air and land, and human beings, other living creatures, plants, micro-organism and property;

Word ‘environment’ originates in the French *environ* and *environner* meaning ‘around’ ‘round about’ and ‘to surround’ ‘to encompass’. Thus we can conclude from this etymology that environment means the things or event that surrounds something else. If that something else is an individual organism, than the environment means and includes factors that surround and interact with it and may include predators, foods, chemical elements, soil, atmosphere etc. Environment thus includes natural factors which do not have any political or artificial boundaries. Ecologist Frank B. Golley in his book *titled “A Primer for Environmental Literacy”* (Golley, 1998) through a “holocoenotic diagram” redrawn from that of the original sketch drawn by

Dwight Billing in 1952 took holistic approach to the environment in the sense that he recognized the environment as a whole influencing the organism and none of them being independent of each other. According to him the environment is like a tightly woven spider's web with the organism at its center and 14 others environmental factors namely wind, temperature, solar radiation, time, atmosphere, fire, water, landform, gravity, parent material, soil, other plants, animals, and microorganism at the periphery of the web affecting each other. A smallest variation in any one of them affects others. It is scientifically observed as aforesaid that the pollutants generated at one place are carried away over a distance of more than 1000 kms by natural forces. Orders passed in the present case, therefore, need to have all India applicability.

45. Keeping in view the factual and legal aspects of the case in hand there is a need to totally ban unregulated handling and disposal of plastic waste and to issue incidental directions for its regulation and restoration of environment in some measure, if not fully. However, it is made clear, that the order passed by us shall not in any manner whatsoever be construed in derogation of the directions passed by the Hon'ble Supreme Court of India from time to time, but shall always be supplementary thereto.

Hence the order.

a. All the plastic waste/scrap dealers and/or recyclers including the member of the PWD Association Respondent herein shall be

restrained from carrying on their business of segregation of plastic waste and its eventual transfer to recyclers or disposal contrary to and without registration under the provisions of Plastic Waste(Management and Handling) Rules, 2011;

b. There shall be no unregulated open burning of plastic/rubber or such other articles anywhere in India.

c. All the Municipal Authorities within the meaning of Rules 3 (j) of the Plastic Waste(Management and Handling) Rules 2011, shall strictly enforce the provisions of the said rules relating to use, collection, segregation, transportation and disposal of plastic waste, and for such purposes shall (i) set up, operationalise and coordinate the waste management systems within their limits (ii) work out and set up systems for the use of plastic waste in road construction and/or in co-incineration plans for generation of energy in accordance with law and lastly (iii) incorporate necessary provisions in their bylaws for enforcement of the said rules.

d. Government NCT of Delhi, Delhi Pollution Control Committee, Haryana State Pollution Board and the Municipal Corporation of Delhi within whose limits the villages of Nangloi, Ghewara, Neelwal, Mundka, Kamruddin Nagar, Tikri-Kalan, Ranhaula etc. fall are directed to work out a plan for restoration of lands affected by illegal and unauthorized activity of segregation and disposal of plastic waste along with the cost required to be incurred therefor in consultation with each other and to submit its report to the

Tribunal within one month of this order. Copies of this report shall be furnished to the other parties well in advance.

e. Parties hereto are at liberty to raise objections and/or make suggestions in respect of the plan for restoration of land recommended in the said report and shall file affidavits giving following particulars:

1. The extent of area in use and occupation of each plastic waste dealer.

2. Amount of plastic waste handled by each of the plastic waste dealer over the years since the occupation of the area for their business.

3. Amount of plastic waste not fit for recycling.

4. Any other relevant data for the purposes of the quantification of the damages caused along with the description of the land involved along with khasra number.

f. The Respondents are herein directed to cooperate with each other in securing compliance of these directions expeditiously.

M.A. No. 205/2013 and 561/2013 stand disposed off accordingly. Original applications shall remain pending for assessment of damages and passing of incidental orders in that regard.

....., CP
(Swatanter Kumar)

....., JM
(U.D. Salvi)

....., EM
(Dr. D.K. Agrawal)

....., EM
(P.S. Rao)

....., EM
(RanjanChatterjee)



NGT