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BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL
PRINCIPAL BENCH, FARIDKOT HOUSE, NEW DELHI
ORIGINAL APPLICATION NO. 357 of 2026

IN THE MATTER OF:

Dwarka Expressway Gurugram Development Association

….APPLICANT

VERSUS

Municipal Corporation of Gurugram (MCG) and others

…..RESPONDENTS

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Written Submission / Rejoinder on behalf of the Applicant

The present Application, filed by residents of the Dwarka Expressway area, seeks to stop a C&D waste dump yard in the middle of a residential sector

1. The present Original Application has been filed by the Dwarka Expressway Gurugram Development Association (DXP-GDA), which espouses the cause of the residents of the group housing societies and villages along the Dwarka Expressway, Gurugram. The Application challenges the C&D Waste Collection Centre being set up by the Respondent No. 1 in the immediate vicinity of these housing societies and villages. This Hon'ble Tribunal was pleased to issue notice on 29.05.2026.

2. In response, the Respondent No. 1 has filed a Short Reply dated 09.09.2026 and the Respondent No. 3, Central Pollution Control Board ("CPCB"), has filed its Reply dated 09.09.2026. The other answering Respondents were also directed to file their replies, however, they have not filed their replies yet. Thus, the present Written Submission-cum-Rejoinder is filed in response to both the replies filed by the Respondent No. 1 as well as the Respondent No. 3.

Thousands of families live within 20 to 30 metres of the site

3. The site is not on the outskirts of the city. It lies in Sector 106, which earmarks as a **residential sector** housing the society **"Godrej Meridien"** Respondent No. 9, having about **1,100 flats** and approximately 3000 numbers of persons. the DDJAY society **"Plaza 106"** having about 380 no of flats and approximately 1000 numbers of persons and **village Babupur** with 668 numbers of persons as per the Census of 2011 (*which is now more than 15 years old*). These are the people who will live with the dust, the noise and the contamination of the soil and water if the site is made operational.



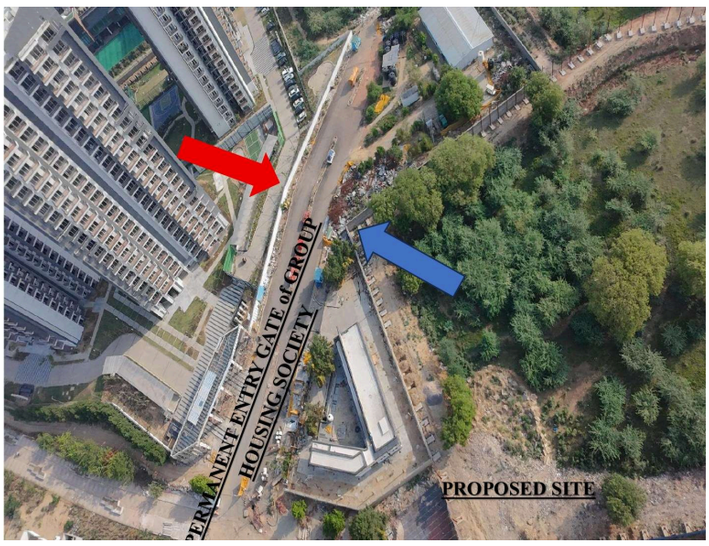


Image 1: Aerial photograph of the site. RED arrow: boundary wall of the group housing society Godrej Meridien (about 1,100 flats). BLUE arrow: boundary wall of the site (page 150).



Image 2: Aerial photograph of the site. RED arrow: boundary wall of the DDJAY society Plaza 106. BLUE arrow: boundary wall of the site (page 151).

4. The Respondent No. 1's own photograph filed with its reply (Annexure R1/1, page 350) confirms this. It shows the residential towers rising immediately behind the sheet fencing of the site.

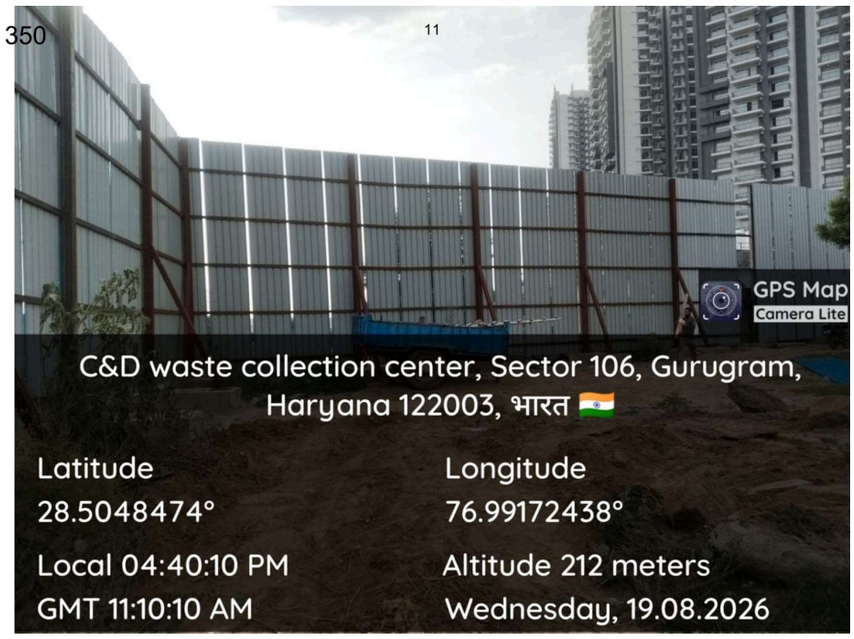


Image 3: Photograph filed by the Respondent No. 1 itself (Annexure R1/1, page 350), dated 19.08.2026, showing residential towers directly behind the fencing of the site.

The site shares its boundary wall with an approved nursery school

5. On 10.02.2020, the Haryana Real Estate Regulatory Authority, Gurugram approved a **nursery school** as part of the site plan of the Respondent No. 9's project "Godrej Meridien". The approved school plot **shares a boundary wall with the site** [**Annexure R-6 (pages 153-154 of the OA 357/2026**]. This approval was granted almost six years before the Respondent No. 1 first recorded, in its Memo dated 30.12.2025 (**Annexure R-4**), its plan to set up the facility at village Babupur.

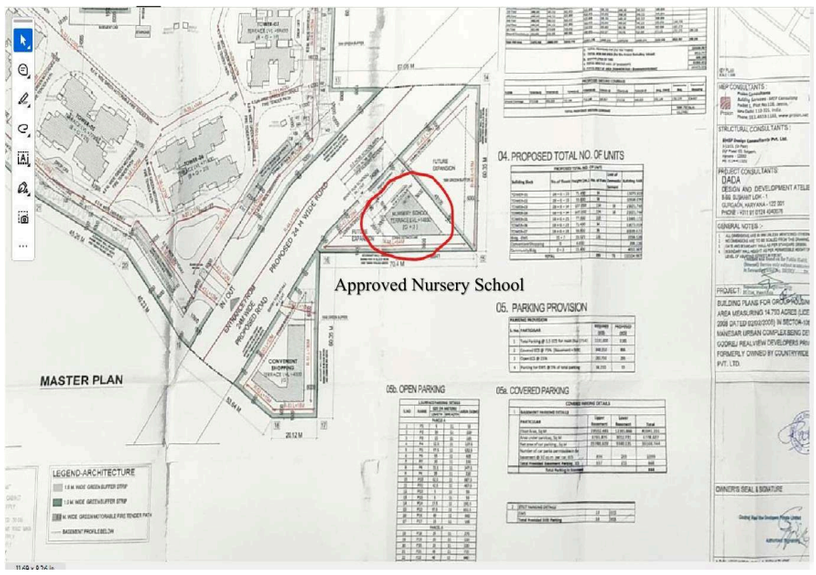


Image 4: Relevant portion of the site plan of the Respondent No. 9 approved by HRERA, Gurugram, showing the approved nursery school (marked by RED circle) (page 154).

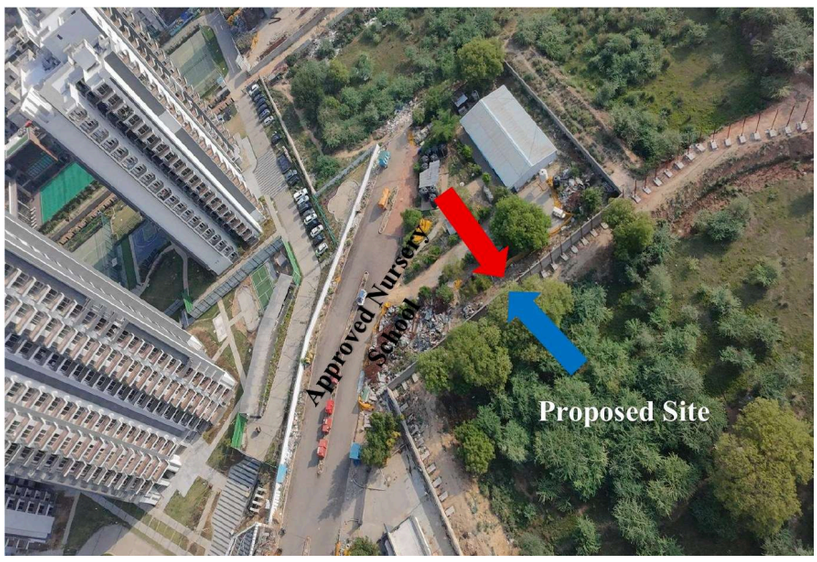


Image 5: RED arrow: boundary wall of the approved nursery school. BLUE arrow: boundary wall of the site (page 154).

6. In paragraph 14 of its reply (page 344), the Respondent No. 1 states that no school is "presently operating or even established" near the site, and that none of the photographs shows a school building. The submission is misconceived for the following reasons:

(a) The nursery school is a sanctioned part of the approved site plan. The plot is reserved for a school and the school has to be built. Whether a building stands on it today is irrelevant when choosing a site that the Respondent No. 1 intends to use for years.

(b) Rule 3(5) of the Noise Pollution (Regulation and Control) Rules, 2000 contemplates an area of not less than 100 metres around educational institutions as a silence zone (**page 173**). A facility where dumpers will tip debris throughout the day cannot share a wall with such an institution.

(c) The movement of dumpers and tractors cause noise pollution of more than the dB(A) units of Ambient Air Quality Standards in respect of Noise as provided in the Schedule to the Noise Pollution (Regulation and Control) Rules, 2000 which is: (i) 50 / 40 dB(A) during Day Time / Night Time in a Silence Zone, and (ii) 55 / 45 dB(A) during Day Time / Night Time in a residential area. **Please refer page 177 of the OA 357/2026**.

(d) The guidelines issued by the Respondent No. 3 (i.e., CPCB) provide that the key noise generating sources in C&D Waste Management activities include vehicle movement (**page 250 of the OA 357/2026**).

The below photographs have been taken to depict the noise generated from the movement of trucks / dumpers from the C&D Waste Processing Plant at Basai, Gurugram on 25 November 2026 around 10 A.M.:



Images 6: Pictures showing that the noise generated due to movement of heavy trucks / dumpers is much higher than the prescribed limits of the Air Quality Standards in respect of Noise in the Schedule to the Noise Pollution (Regulation and Control) Rules, 2000.

(e) Further, the Applicant is hereby humbly uploading on the online portal of this Hon'ble Tribunal videos measuring the noise due to movement of heavy trucks / dumpers / tractors around the C&D Waste Processing Plant at Basai, Gurugram.

(f) This Hon'ble Tribunal in *R.C. Jain v. Govt. of NCT of Delhi* (Annexure R-10) has directed that places for dumping yards shall not be chosen near hospitals and schools where people gather in large numbers.

(g) Any delay by the Respondent No. 9 in constructing the school cannot defeat the protection that the law gives to the children who will study there.

Health impact on the residents and on the children

7. Dust is the principal pollutant in any C&D waste operation. The CPCB's own "Guidelines on Environmental Management of C&D Wastes" (**Annexure R-14**) record as under:

   a) *Dust emissions arising from C & D activities are an environmental nuisance both within the site and beyond the plant site / boundary.*

   b) *Dusts from various C & D activities release wide range of particle sizes and material types and can cause both serious health problems ranging from eye irritation, nose, mouth and respiratory system.*

   c) *The larger heavier particles settle out of the air quickly and are hazard to the operators of plant and equipment and* ***those in the immediate vicinity****. The smaller particles (usually invisible) are transported further in the air and can cause* ***health hazards beyond plant premise (several kms away)****."*

8. The families living 20 to 30 metres away, and the children of the nursery school next door, are precisely "those in the immediate vicinity". They will receive the heavier particles directly, while the finer particles will spread across the whole sector. Children, the elderly and persons suffering from asthma and other respiratory illnesses will be the worst affected.

9. The air of Gurugram is already far beyond safe limits. The average AQI and the PM 2.5 reading in Sector 106 during the year ranges between 160 and 220 already.

The site is covered with trees, including mature neem trees

10. The site is not barren land. It carries a thick cover of trees, including several mature neem trees, as seen in the photographs filed with the Application (**Annexure R-13**).



Image 7: The site, showing the tree cover and the neem trees (Annexure R-13, page 206).



Image 8: The site (to the right of the blue fencing), showing the dense tree cover between the residential towers (page 152).

11. The Respondent No. 1's own photograph (Annexure R-1/1) shows trees standing **inside** the fenced site:



Image 9: Photograph filed by the Respondent No. 1 itself (Annexure R1/1, page 349), dated 19.08.2026: trees standing inside the fenced site, and an open tractor-trolley parked within it.

These trees will have to be cut to run the dump yard

12. A C&D waste dump yard needs open ground on which debris can be tipped and heaped, and on which loaded dumpers, loaders and earth-moving machines can turn and manoeuvre. That cannot be done on land covered with trees. The Respondent No. 1 has not disclosed how many trees stand on the site, or how it proposes to run a dump yard on this land without removing them.

13. In paragraph 9 of its reply (**page 343**), the Respondent No. 1 denies that any tree has been cut, but adds that if felling "is at all required in future", it will be done after obtaining permission. This statement itself shows that the Respondent No. 1 contemplates felling trees at the site.

14. The CPCB, in paragraph 13 of its reply (page 328), has confirmed the legal position as under:

> *"13. That, in context of the cutting and felling of trees, it is submitted that, preservation of trees in the State of Haryana is governed by the provisions of the Punjab Land Preservation Act, 1900; which regulates the preservation and protection of trees in certain notified areas across various Districts of Haryana including Gurugram. ...* ***Prior permission of the competent authority/Tree Committee, as applicable under the relevant Government Orders and statutory provisions, is mandatory for the felling of trees****, and compensatory plantation requirements are also prescribed in accordance with the applicable provisions."*

The felling of trees has already started

15. The denial of the Respondent No. 1 is incorrect. The felling of trees at the site has already begun:

(a) In **February 2026**, when the fencing work started, residents of the adjoining society saw the Respondent No. 8 (the contractor engaged by the Respondent No. 1) at the site with a crane, alongside freshly felled trees. A video recording of this is being uploaded on the online portal of this Hon'ble Tribunal.

(b) On **01.07.2026**, another contractor engaged by the Respondent No. 1 used a JCB machine to fell a tree at the site. A video recording of this is also uploaded on the online portal.

(c) The soil around the neem trees at the site has been dug out and removed, exposing their roots. These trees may fall in the next spell of heavy rain and strong wind without anyone having to cut them.

The photographs of the felled trees can be seen as below. The Applicant is also humbly uploading the videos in which it can be seen that the soil around the neem trees at the site was removed.



Image 10: The site in September 2025 (left) before the fencing work started at the site and in February 2026 (right) after the fencing work was undertaken partially. In September 2025, the area marked in red was covered with trees and shrubs. The same stretch, along the boundary wall, is now bare ground, and the trees in it have been removed.

16. The below images have been taken from the application Google Earth to show the presence of trees and shrubs in March 2025 before the fencing work started

at the site, and the current position where the trees and shrubs have been cut and removed by the contractors appointed by the Respondent No. 1 at the site:

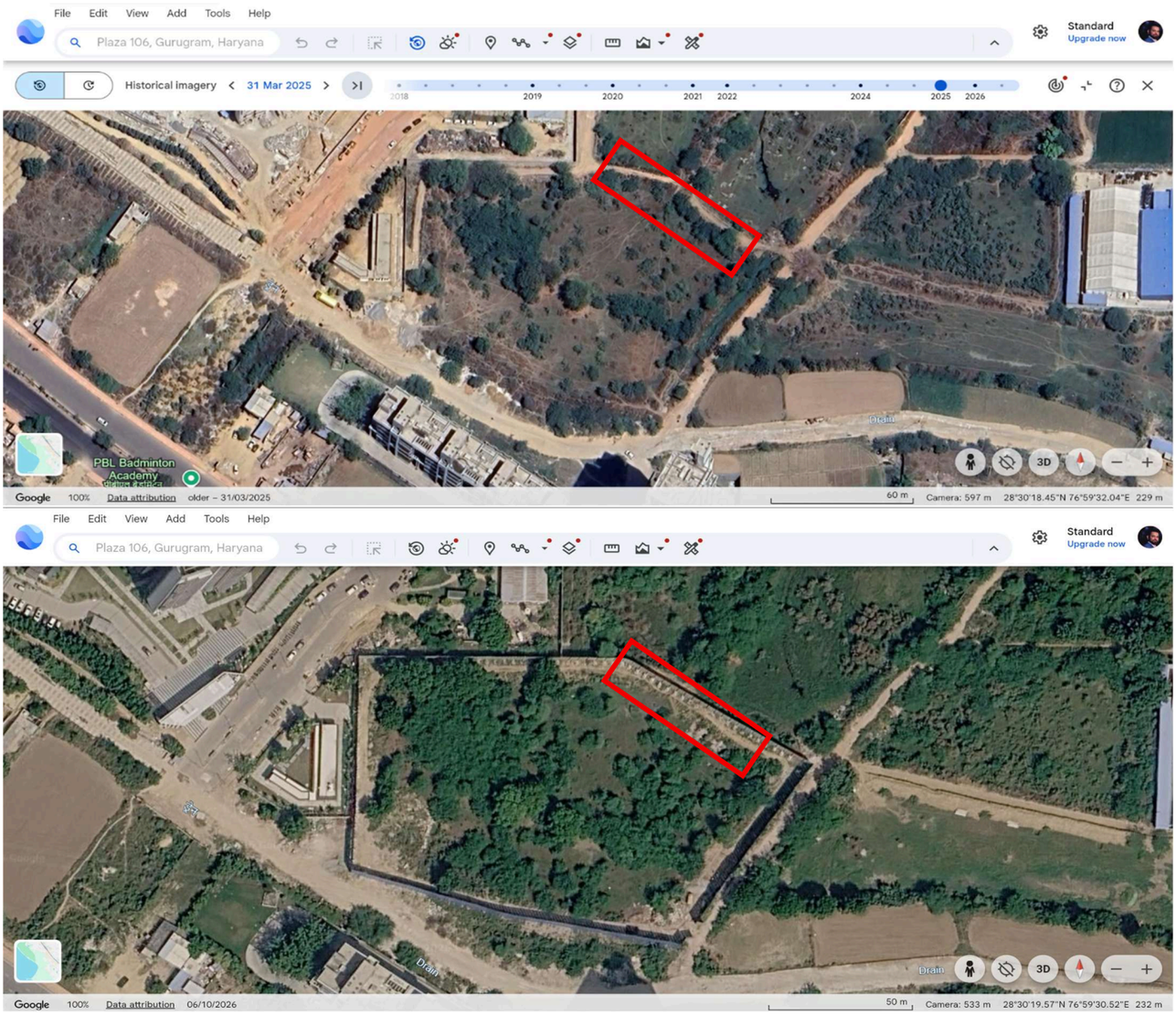


Image 11: Photos of the site taken from the application Google Earth in March 2025 (above) and as on date (below). The area highlighted in RED clearly show that the trees and shrubs present at the site in March 2025 have now been removed for the fencing work undertaken by the contractors of the Respondent No. 1

17. The residents complained to the Divisional Forest Officer, Gurugram, and a Forest Ranger visited the site with them. The Divisional Forest Officer, Gurugram, Mr. Surender Dangi, has stated to the Hindustan Times that **no permission was granted** for felling trees at the site. A copy of the news report dated 3 July 2026 is annexed herewith as **Annexure-1**. Complaints were also lodged at the local police station, but no action has been taken. Copies of the complaints are annexed herewith as **Annexure-2 (colly)**.

18. By its letter dated 11.08.2026 (**page 335**), the CPCB asked the Divisional Forest Officer, Gurugram for the factual status of the alleged cutting and for details of any permission granted. As recorded in paragraph 14 of the CPCB's reply (**page 328**), "Responses are awaited." The Respondent No. 1 has not placed on record a single permission for felling or translocating any tree at the site.

19. Haryana's forest cover is among the lowest in the country, at under 4% of its geographical area as per the India State of Forest Report, against the national average of 21.71% and the goal of 33% under the National Forest Policy, 1988. Every mature tree lost in the National Capital Region cannot be replaced for decades. Considering the above, the Hon'ble Punjab and Haryana High Court also directed a complete stay on the cutting or felling of any tree of any kind in the entire state of Haryana vide its order dated 1 April 2024 in the case of ***Sunil Kumar Sharma v. Union of India and others CM-156-CWPIL-2026 in CWP-PIL-70-2026***. Despite this, the contractor appointed by the Respondent No. 1 can be seen with a JCB machine that felled a tree on 1 July 2026.

20. In this regard, the Applicant humbly submits that since the site under consideration has hundreds of trees (**please refer Annexure R-13 of the OA 357/2026**), the Respondent No. 1 should not be allowed to further degrade the ecological balance of the state of Haryana by cutting such trees and turning the area of around 3 acres into a C&D waste dump yard.

Heavy dust will rise from the trucks and dumpers plying to and from the site

21. The site has **no paved or concreted approach road**. It can be reached only by a narrow kaccha track or by driving over the covered drain running alongside it (**Annexures R-8; pages 158-160**). The Respondent No. 1's own photographs (**pages 349–351**) show that the ground inside the site, and the track along the fencing, is bare, unpaved earth.



Image 12: The narrow kaccha approach to the site along the fencing

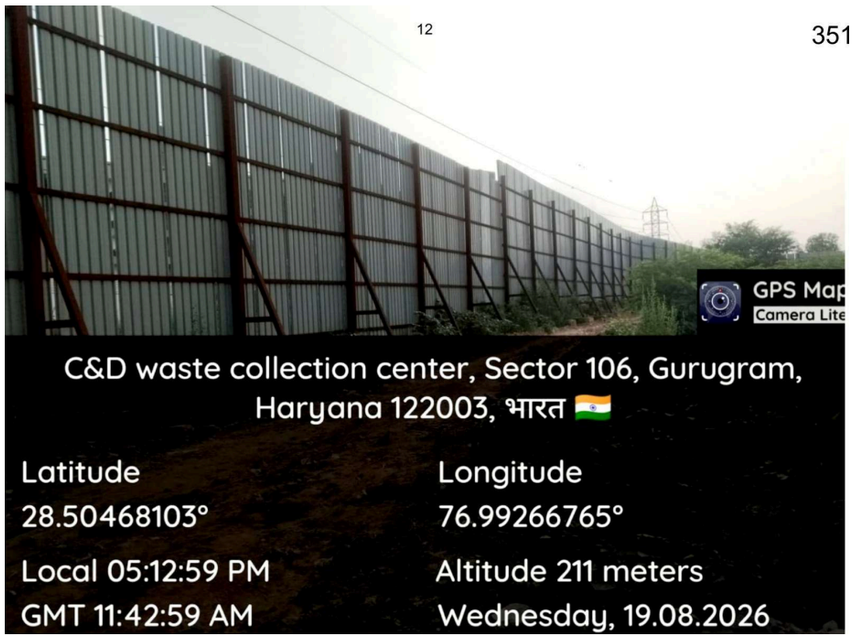


Image 12: Photograph filed by the Respondent No. 1 itself (Annexure1/1), dated 19.08.2026: bare, unpaved earth along the fencing.

If one car raises this much dust, the trucks will raise many times more

22. The photographs at Annexure R-7 (**pages 155-156**) show a single passenger car driving on the approach track to the site. Even this one light vehicle raises a thick, rolling cloud of dust which spreads across the track towards the residential towers.



Image 11: A single car on the approach track to the site raising a cloud of dust (Annexure R-7).



Image 12: The same car, with the dust spreading towards the residential towers (Annexure R-7).



Image 13: The dust cloud left behind by one passenger car (Annexure R-7).

23. A passenger car weighs about 1.5 to 2 tonnes. A dumper loaded with about 10 tonnes of debris weighs about 15 to 25 tonnes, runs on 6 to 10 heavy wheels and grinds the surface into fine dust. If one car produces the dust seen above, about 100 loaded trucks a day, each about ten times heavier, will keep the air

over Sector 106 continuously laden with dust. The kaccha track and the covered drain will also break up under this weight, producing still more loose material.

24. **The trucks will be open.** C&D waste in Gurugram is carried in open tipper trucks and open tractor-trolleys. The Respondent No. 1's own photographs (**pages 349–350**) show an open, uncovered trolley parked inside the site. Nowhere in its reply has the Respondent No. 1 said that only covered vehicles will be allowed, or how it would enforce such a condition against the many private vendors who are meant to deposit waste at the site. Uncovered loads shed dust and fragments along the entire route, and every load tipped at the site throws up a fresh cloud. This Hon'ble Tribunal has itself held in *RWA Sector Sigma 2* that "*loading and unloading of the C&D waste creates air pollution by emitting dust particles*" (**please see paragraph 42**).

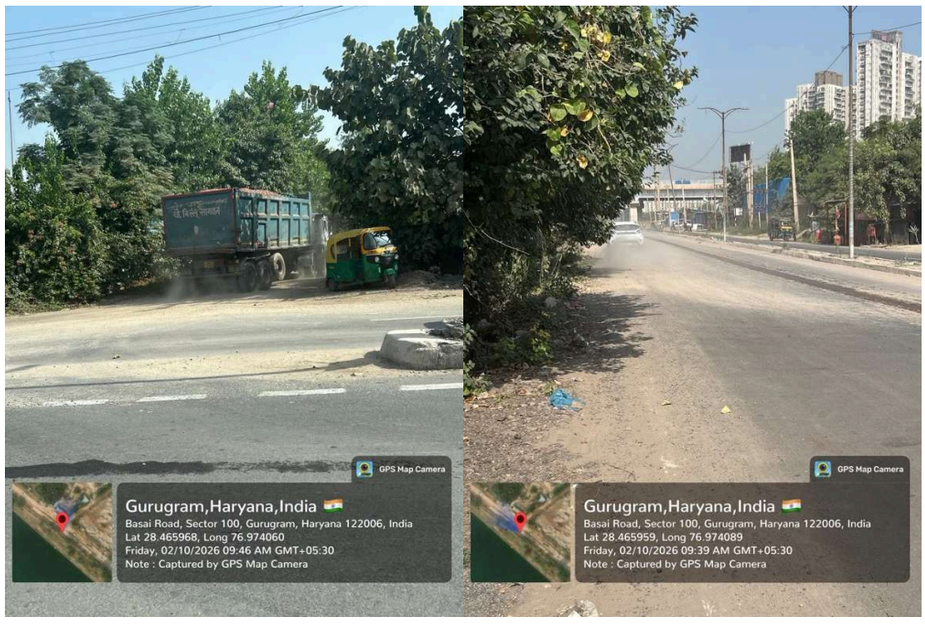


*Image 14: Basai Road, Sector 100, Gurugram, on 02.10.2026, between 9:39 and 9:46 AM. A loaded and **uncovered** dumper on the unpaved roadside and passing vehicles throw up the construction debris before it enters the processing site.*

25. The CPCB Guidelines (**Annexure R-14, page 255**) prescribe the following measures for the dust caused by vehicle movement:

> ***"b. Dust abatement – due to vehicle movement***
>
> *Transport movement: Dust abatement due to transport activities arising due to vehicles movement (operation of vehicles within, entering or leaving the site) can also include the following:*

Type text he

i. Monitor movement of vehicles (incoming / outgoing) carrying C & D wastes or processed C & D waste products only

ii. ***Transportation of C & D wastes should be done in covered vehicles to prevent fugitive dust emission.***

...

vi. Smooth movement of incoming & out going vehicles / trucks

vii. ***Roads within premise tarred***

viii. Weigh bridge (to be operational)

ix. Dust suppression systems in place (fugitive emissions): Dust from roads, regular water sprinkling on haul road will suppress the dust."

26. None of these measures exists at the site. There is no paved approach road, no tarred road within the premises, no weighbridge and no condition requiring covered vehicles. The only measure the Respondent No. 1 offers is water sprinkling through smog guns (paragraph 18, page 346), which, as shown below, will itself generate leachate. In paragraph 15 of its reply (page 345), the Respondent No. 1 complains that the Applicant has not identified any specific provision of the CPCB Guidelines that is violated. The provisions that have been violated are set out above.

27. That the Respondent No. 1 in paragraph 10 of its reply (**internal page 4 of the reply**) has submitted before this Hon'ble Tribunal that the siting criteria provided under Rule 7 (1) of the C&D Waste Management Rules, 2016 read with the Schedule I do not apply to the site under consideration at Sector 106, Gurugram. This is since the Rule 7 (1) read with Schedule I is applicable only to a storage facility '*with'* processing / recycling. It is humbly submitted that such an interpretation of the Respondent No. 1 would render the objective of the C&D Waste Management Rules, 2016 of scientific disposal of C&D waste as completely redundant and ineffective.

28. For example, point 8 of Schedule I of the C&D Waste Management Rules, 2016 provide that the approach road to a C&D waste management site should be concreted or paved such that generation of dust particles due to vehicular movement could be avoided. If the arguments of the Respondent No. 1 is accepted that such a condition is not applicable to C&D waste storage sites merely since no processing / recycling of C&D waste is being undertaken at such site, then it would result in setting up of C&D waste storage sites without approach roads or with dusty / kaccha approach roads which result in

generation of dust particles that are harmful for people working within the site as well as people living several kilometers away from the C&D waste storage site.

29. Reliance in this respect is placed on the decision of the Hon'ble Supreme Court in the case of ***M.C. Mehta Vs. Union of India (UOI) and Ors. [IA Nos. 487, 491, 494, 489 and 495/2017 in Writ Petition (Civil) No. 13029/1985 judgment dated 13 April 2017]*** in which the Hon'ble Supreme Court observed that where the issue concerns the question of public health, then the applicable rules and notifications should be interpreted in a purposive manner, and a literal interpretation has to be rejected. A copy of the judgment of the Hon'ble Supreme Court in the case of ***M.C. Mehta (supra)*** is annexed herewith an **Annexure – 3**.

30. Further, the Applicant humbly draws the kind attention of this Hon'ble Tribunal to page 254 of the Original Application No. 357 of 2026 filed by it. On this page, the Respondent No. 3 (i.e., CPCB) has provided for "*Guidelines on Environmental Management of C&D Wastes – Dust Management*". Under this, the CPCB has clearly stated that incoming / outgoing vehicles are major dust generating sources in C&D operations. Further, the CPCB has warned that due to the dust generation, (i) the larger heavier particles settle out of the air quickly and are **hazard to the operators of the plant and equipment and those in the immediate vicinity**, and (ii) the smaller particles (usually invisible) are transported further in the air and **can cause health hazards beyond the plant premise (several kilometers away)**.

31. Thus, if the argument of the Respondent No. 1 is accepted, then it would mean that the Respondent No. 1 can continue to generate huge amounts of dust particles in the air through its trucks / dumpers / vehicles carrying several tonnes of C&D waste for storage at the site under consideration **even though such generation of dust results in health hazards beyond the premise of the C&D waste storage site to thousands of families residing in the immediate vicinity of the site under consideration**.

32. Further, it would not matter that the site under consideration does not have an approach road. Instead, the only way a vehicle / dumper / truck carrying several tonnes of C&D waste can enter the site under consideration would be either by: (i) using a kaccha rasta which is quite narrow for large vehicles, or

(ii) using a drain which is covered and which generates huge amounts of dust outside the premises of the site under consideration even when a small vehicle is driven on it.

33. In the present case, the Applicant has already submitted that the site under consideration at Sector 106, Gurugram does not have an approach '*road*'. Instead, as stated above, there are only two ways of approaching the site under consideration i.e., either by way of a kaccha rasta or a covered and dusty drain. The situation of the covered drain is already deplorable due to plying of light vehicles such as cars – it has developed several potholes which result in accumulation of water as evident from the photograph below. The situation of the drain is only going to worsen if trucks / dumpers / tractors carrying tonnes of C&D waste are allowed to ply on it day in and day out, every single day.



Image 15: Condition of the covered drain outside the site under consideration

The Respondent No. 1 has not obtained any authorization for setting up the C&D waste dump yard at the site under consideration

34. In the present case, the Respondent No. 1 issued an e-tender 2025_HRY_461913_1 for fencing of 6 meters height at the C and D Waste Processing Facility / designated C and D waste dump yard at village Babupur, Sector 106, Haryana. The regional officer of the Respondent No. 4 i.e., Ms. Akanksha Tanwar gave a statement in the national newspaper "Hindustan Times" that the department was not even aware of the C and D Waste Processing Facility / designated C & D waste dump yard. Further, the Respondent No. 1 has itself accepted in the reply filed by it before this Hon'ble Tribunal that it has not obtained the authorization from the Respondent No. 4 since such an authorization is not required for the site under consideration at Sector 106, Gurugram since it is merely a storage site for the C&D waste. A copy of the e-tender as well as the Letter of Acceptance by the Respondent No. 8 is annexed herewith as **Annexure – 4**.

35. Even if for the sake of argument, it is ignored that the tender issued by the Respondent No. 1 is for a C&D waste processing facility, and the Respondent No. 1 is actually setting up a C&D waste storage dump yard at Sector 106, Gurugram, even then it was required to obtain a prior approval from the Respondent No. 4 for setting up of such storage site. This aspect was specifically dealt with by this Hon'ble Tribunal in the case of ***Sanyogita Singh v. State of Uttar Pradesh and others O.A. No. 404/2022.*** In this case, this Hon'ble Tribunal held that any construction for setting up of a temporary C&D waste collection facility without the prior approval obtained under Rule 7 of the C&D Waste Management Rules, 2016 is illegal. Thus, the setting up of the C&D waste storage facility at Sector 106, Gurugram by the Respondent No. 1 is illegal. A copy of the judgment of this Hon'ble Tribunal is annexed herewith as **Annexure – 5**.

C&D waste is not inert: the hazardous material in it will seep into the groundwater

36. In paragraphs 13 and 18 of its reply (**internal pages 5 and 7**), the Respondent No. 1 asserts that C&D waste is "inert material" and that it cannot generate leachate because it does not involve municipal solid waste, organic waste or hazardous waste. This assertion is contrary to the Rules, to the CPCB's own Guidelines and to basic science.



37. The 2025 Rules themselves define the waste (**Annexure R-2, page 64**) as under:

> *"(g) "construction and demolition waste" means the waste generated due to construction, demolition, remodeling, renovation, repair, and maintenance activities, and comprises of soil, sand and gravel, bricks and masonry, concrete,* ***metal, wood, plastic, ceramic and such other items****;"*

38. The CPCB Guidelines (**Annexure R-14, page 269**) expressly recognise that C&D waste contains hazardous streams:

> *"i) Hazardous wastes / toxic wastes streams: Hazardous wastes / toxic wastes streams should be kept separately from other wastes to avoid further contamination, their disposal to be done in consultation with SPCBs/PCCs under HW Management Rules 2016.* ***Examples of C & D waste that are classified as hazardous include lead, tars, adhesives, sealants, asbestos.*** *..."*

39. The 2016 Rules [**Rule 6(3c), page 32**] likewise require the local authority to "seek assistance from concerned authorities for safe disposal of construction and demolition waste contaminated with industrial hazardous or toxic material or nuclear waste if any". The law itself, therefore, does not treat C&D waste as inert.

40. The site is meant to receive debris from demolished and renovated houses across the city, brought in by small generators and private vendors who do not segregate their waste. Such debris contains every material that went into a house: lead-based paints, asbestos-cement roofing sheets, PVC pipes and electrical wiring, treated timber, gypsum and plaster, tile adhesives, bitumen and waterproofing chemicals, and discarded paint and chemical containers. The Respondent No. 1 has disclosed no system for screening or segregating hazardous material at the gate. The Times of India report on the Basai plant (**Annexure R-16, pages 294-296**) shows how mixed and plastic waste ends up being dumped at C&D sites.

41. The site has no impermeable base, no lining, no leachate collection and no storm water drains. The Respondent No. 1's own photographs (**pages 349–351**) show that the C&D waste will lie on bare earth. Every monsoon shower, and the regular water sprinkling that the Respondent No. 1 itself proposes (**paragraph 18, page 346; and the statement of its Additional**

Commissioner at page 163), will percolate through the heaps and carry **lead, chromium, arsenic, cadmium and other heavy metals, and sulphates**, into the soil and down to the groundwater of the area. The surface run-off will reach the adjoining drain, which merges with the Sahibi River (**Annexure R-17, pages 297-299**).

42. Further, it is humbly submitted that a 3-judge bench of the Hon'ble Supreme Court upheld the directions of this Hon'ble Tribunal in the case of ***Mantri Techzone Private Limited v. Forward Foundation and Others (Civil Appeal Number 5016 of 2016)*** that buffer zones should be maintained on all drains whether primary, secondary or teritary. The Hon'ble Supreme Court gave this judgment while upholding the directions issued by this Hon'ble Tribunal in respect of buffer zones around drains. In the present case, the Respondent No. 1 has not maintained any buffer zone to the drain as visible from the photographs submitted by the Applicant at pages 298-299 of the Original Application filed by the Applicant. A copy of the judgment of the Hon'ble Supreme Court is annexed herewith as **Annexure – 6**.

43. Studies on the leachate generated from C&D waste confirm the presence of such heavy metals and their risks to human health, particularly to children. The Respondent No. 1 has also erroneously stated that the C&D waste would not result in generation of leachate since the site under consideration would not involve municipal solid waste, organic waste, hazardous waste or any similar material from which leachate could ordinarily be generated. However, the Applicant humbly submits that there have been experiments undertaken about the type of leachate that is generated from C&D waste wherein it was found that the disposal of C&D waste in landfills has been widely recognized as a source of leachate containing toxic contaminants which post significant environmental risks and risks to human health.

44. The experiments were undertaken by the: (i) National Library for Medicine, National Center for Biotechnology Information of the Government of the United States of America, and (ii) Department of Civil Engineering, University Institute of Technology, Rajiv Gandhi Technological University, Bhopal, India. These experiments were then recorded through articles that are available in the public domain – a simple reading of such articles show that the seepage of leachate from C&D waste contains significant amounts of

heavy metals such as arsenic, iron, lead, zinc, and cadmium, along with various other toxic substances. These pollutants pose severe risks to human health. These metals are also likely to contaminate agricultural land and groundwater, potentially leading to serious health issues for humans and ecological imbalances in the environment.

45. Exposure to heavy metals through drinking contaminated water can result in kidney failure, damage to reproductive organs, and brain disorders. It has also been observed that the effects are more severe on children. Moreover, arsenic (As) is widely considered the most dangerous due to its potent carcinogenic effects. Children are particularly vulnerable to lead poisoning, which can affect their growth, development, and cognitive function. Thus, the contention of the Respondent No. 1 that no leachate could be generated from the accumulation of C&D waste at the site is contrary to basic science. A copy of the articles published in relation to the nature of leachate from C&D waste is annexed herewith as **Annexure – 7 (colly)**.

46. Similarly, the Respondent No. 1 is required to maintain a buffer zone of no development as per point 6 of Schedule I to the C&D Waste Management Rules, 2016. If its arguments are accepted and it is held that such a condition is not applicable to the site under consideration, then the Respondent No. 1 would be allowed to set up a C&D waste storage facility without maintaining any buffer zone from the drain. Such an interpretation of the Respondent No. 1 is directly in the teeth of the judgment of the Hon'ble Supreme Court in the case of ***Mantri Techzone (supra)***.

Storage site at Basai shows what will happen: the site will turn into another mountain of debris, because it is only a storage site and not a processing site

47. The Respondent No. 1 already has a site at Basai (Sector 101), where it set up its only C&D waste processing plant in 2017, with a stated capacity of 1,200 tonnes per day. The Respondent No. 1's own figures show that even this plant cannot keep up with the waste of the city:

(a) As per its Action Plan (**Annexure R-4**), the city generates **1,500 tonnes per day** of C&D waste against processing of **1,200 tonnes per day**, a **gap of 300 tonnes every day**. That is about **1,09,500 tonnes a year** left unprocessed.

(b) In paragraph 12 of its reply (**page 343**), the Respondent No. 1 admits that the Basai facility "is short of space and cannot store the increasing C&D Waste being generated on daily basis".

48. The result is plain to see. The unprocessed waste at Basai has piled up into a **mountain of debris** visible from far away, approached by a dusty kaccha road on which every leaf is coated brown with dust. Mixed and plastic waste has also been dumped at the fringe of the Basai wetland near the plant. Photographs of the Basai plant can be seen below:



Image 16: The mountain of debris as can be seen from a distance at the Basai C&D Waste Processing Plant, Gurugram

49. The same will happen at Babupur, only worse. The Babupur site is **only a storage and dumping site. It has no crusher, no screening and no processing of any kind.** Waste brought to it has to be carried again to Basai, and Basai, on the Respondent No. 1's own admission, has neither the capacity to process it nor the space to store it. Waste collected at Babupur will therefore have nowhere to go and will get its own mountain of debris, this time within 20 to 30 metres of thousands of homes and across the wall from a school.

50. The above is not merely an apprehension of the Applicant, but the track record of the performance of the Respondent No. 1 regarding the civic issues in Gurugram. In this very case, the Respondent No. 1 in paragraph 20 (**internal**

page 7) asserted that it has ensured regular inspection of the site under consideration and immediate lifting of accumulated waste, whenever noticed. The reply was filed before this Hon'ble Tribunal on 9 September 2026 and the following photographs were taken on 12 September 2026 which show huge amounts of C&D waste lying just outside the site under consideration. This waste has been lying there for months at a stretch and the Respondent No. 1 has not been able to clear it, despite its "regular inspections of the site under consideration". This also castes serious doubts over whether the Respondent No. 1 would be able to "*suitably cover*" the site under considerations as claimed by it in paragraph 19 of its reply (internal page 7).



Image 17: C&D waste lying outside the site under consideration for various months showing the track record of performance of the Respondent No. 1 in managing C&D waste

The site violates the setback distances prescribed by the CPCB for C&D waste facilities

51. The CPCB, in its "Guidelines on Environmental Management of C&D Wastes" (**Annexure R-14 to the OA**), has specifically laid down the setback distances (or buffer zone distances) to be maintained from the outer boundary

of a C&D waste facility. As per these Guidelines, a C&D waste facility should not be located within 100 metres of the bank of any watercourse, or within 50 metres of any other adjacent property. The relevant extract from page 263 of the Original Application is reproduced below:

> **CPCB, Guidelines on Environmental Management of C&D Wastes, Section IX – Guidelines on Setback distances (or buffer zone distance) (Annexure R-14, page 263 of the OA):**
>
> *"c. Separation distances are necessary in order to minimize potential environmental conflicts between non-compatible land uses particularly due to rapid urbanization ... Besides adopting noise and dust control abatement measures, the following distance restrictions be considered w.r.t. setback distances from the outer boundary of the such C & D facilities wherein it not be located within the following receptor setback distances:*
>
> *i. 200 metres from any Industrial/Commercial land use property*
>
> *ii.* ***100 m from bank or high water mark of any watercourse*** *or wetland / pond / lake*
>
> *iii. 150 metres of the right-of-way boundary of a public highway;*
>
> *iv.* ***50 metres from any other adjacent property;*** *..."*

52. The site under consideration violates both these setback distances. The site lies right along the drain which merges with the Sahibi River (Annexure R-17, pages 297–299 of the OA), as seen in the photographs. Further, the boundary wall of the DDJAY society Plaza 106 is only 20.54 metres from the site and the boundary wall of the group housing society Godrej Meridien, having about 1,100 flats, is only 30.57 metres from the site (pages 150–151 of the OA). The approved nursery school of Godrej Meridien shares its boundary wall with the site (pages 153–154 of the OA). Thus, the site is located well within the 100-metre setback from the watercourse and the 50-metre setback from adjacent properties prescribed by the CPCB itself.

This Hon'ble Tribunal has the power to direct a buffer zone around the drain

53. As submitted above, a 3-judge bench of the Hon'ble Supreme Court in *Mantri Techzone Private Limited v. Forward Foundation and Others*, (2019) 18 SCC 494 (Civil Appeal No. 5016 of 2016, decided on 05.03.2019), upheld the jurisdiction of this Hon'ble Tribunal to issue directions for the protection of water bodies. The Hon'ble Supreme Court held that this Hon'ble Tribunal can

specify buffer zones around specific lakes and water bodies even in contradiction with zoning regulations, and that it has a legal obligation to provide for preventive and restorative measures in the interest of the environment. The Hon'ble Supreme Court sustained the buffer zone directions issued by this Hon'ble Tribunal against the project proponents before it and dismissed their appeals, though it set aside the general direction that applied to all lakes and drains in Bengaluru. The relevant extracts are reproduced below:

> ***Mantri Techzone Pvt. Ltd. v. Forward Foundation & Ors.*, (2019) 18 SCC 494:**
>
> *"43. ... wherever the environment and ecology are being compromised and jeopardized, the Tribunal can apply Section 20 for taking restorative measures ...*
>
> *44. ... [the Tribunal] has a legal obligation to provide for preventive and restorative measures in the interest of the environment.*
>
> *47. Section 33 of the Act provides an overriding effect to the provisions of the Act over anything inconsistent contained in ... [the Tribunal]* ***can specify buffer zones around specific lakes & water bodies in contradiction with zoning regulations*** *..."*

54. In the present case, the Respondent No. 1 has not maintained any buffer zone between the site and the drain. It is, therefore, humbly submitted that this Hon'ble Tribunal, in exercise of its preventive jurisdiction under Sections 14, 15 and 20 of the National Green Tribunal Act, 2010, may be pleased to direct that no C&D waste shall be collected, stored or dumped within the setback distances prescribed by the CPCB from the drain and from the adjacent residential properties and the school, which would rule out the site under consideration altogether.

The proposed site under consideration also violates the Master Plan 2031AD of Gurugram

55. The C&D Waste dump yard is being set up in Sector 106 which has been earmarked as a "*residential sector on neighborhood pattern*" using the Main Code "100" in the Master Plan 2031AD of Gurugram issued by the Department of Town & Country Planning through Notification No. CCP(NCR)/FDP-2031/GGN/2012/3541 dated 15 November 2012. In the Master Plan 2031AD, the density of Sector 106 is shown as 250 persons per

hectare which is considered as high density for urban areas. The C&D waste management activities do not fall under any of the heads of "*land use*" as provided under the Appendix B of the Master Plan as provided at **page 196** of the OA 357/2026.

56. Further, the Respondent No. 5 issued a Public Notice CCP(NCR)/2026/394-II/1989 on 30 September 2026 which stated that it has now been proposed to amend the existing Zoning Regulations of Development Plans (Appendix B) and introduce a prohibited list of activities for different major land use zones under the Zoning Regulations of the Development Plans. It has also been proposed that the existing practice of having permissible activities for these land use zones as mentioned in 'Appendix B' of Explanatory Note to the Master Plans in the state of Haryana would be replaced. A copy of the Public Notice dated 30 September 2026 is annexed herewith as **Annexure – 8**.

57. In the prohibited list of activities, it has been proposed to specifically prohibit C&D Waste management sites in residential zones. This proposed amendment and introduction of the prohibited list of activities is currently under consideration before the Respondent No. 2. However, this public notice dated 30 September 2026 clearly makes it evident that the intention of the State of Haryana is to prohibit C&D waste management sites in residential areas.

58. On the last hearing date, the counsel for the Respondent No. 1 made an oral submission that there is a decision of the Hon'ble Supreme Court in which it has been held that this Hon'ble Tribunal does not have the jurisdiction to adjudicate violations of Master Plans of a state. The counsel for the Respondent No. 1 did not provide the citation of the judgment of the Hon'ble Supreme Court to the Applicant, however, seemingly, he may have relied upon the judgment of ***Raj Singh Gehlot and Ors. Vs. Amitabha Sen and Ors. Civil Appeal No. 385 of 2026 (Arising out of SLP (Civil) No. 11480 of 2020).*** A copy of the judgment in *Raj Singh Gehlot (supra)* is annexed herewith as **Annexure – 9**.

59. If that is the case, then the counsel for the Respondent No. 1 has attempted to mislead this Hon'ble Tribunal. This is since in the decision of *Raj Singh Gehlot (supra),* the question before the Hon'ble Supreme Court was whether this Hon'ble Tribunal can adjudicate violation of "building plans" in relation to construction of commercial premises by a private developer in a private

residential colony. In this case, the private developer i.e., Ambience Developers constructed a commercial premises at the alleged open and green spaces which was alleged to have violated the sanctioned layout plan of the private residential colony. On these facts, the Hon'ble Supreme Court held that the issue of environment was not a substantial question before this Hon'ble Tribunal and it could not have invoked jurisdiction (**kindly refer paragraph 105 of the judgment**).

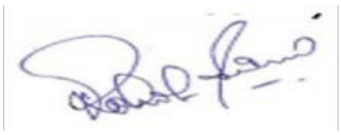
60. In fact, in the above judgment, the Hon'ble Supreme Court referred to another one of its judgments in the case of **Auroville Foundation v. Navroz Kersasp Mody (2025) 4 SCC 150.** In this case, the Hon'ble Supreme Court observed that as per Section 14 of the NGT Act, 2010, this Hon'ble Tribunal has the jurisdiction over all civil cases where the substantial question relating to environment including enforcement of legal right relating to the environment is involved, and such question arises out of the implementation of the enactments specified in Schedule I. Further, it was observed that a "substantial question relating to environment" would include the question where there is a direct violation of a specific statutory environmental obligation by a person by which the community at large other than the individual or group of individuals is affected or likely to be affected by the environmental consequences.

61. In the present case, as stated above, there are thousands of citizens of the city of Gurugram in the State of Haryana whose health would be impacted by the C&D waste management activities proposed to be undertaken by the Respondent No. 1 at the site under consideration. The site under consideration is likely to cause air pollution through dust, contamination of groundwater due to seepage of toxic chemicals into the groundwater as well as pollution of the Sahibi River due to leachate generated at the site. Thus, it is humbly submitted that this Hon'ble Tribunal is definitely cloaked with the jurisdiction to adjudicate on issue on whether such a site under consideration is permitted or prohibited under the Master Plan 2031AD of Gurugram, Haryana. From a mere a cursory look at the Master Plan 2031AD of Gurugram, Haryana, it becomes evident that the Respondent No. 1 cannot be allowed to set up and operate a C&D waste storage facility at the site under consideration.

Applicant

396

Through Counsels



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Residents flag illegal tree felling near MCG's proposed C&D site in Sec 106

Residents of Babupur village in Sector 106 raised concerns over alleged tree felling on Wednesday near the Municipal Corporation of Gurugram's (MCG) proposed construction and demolition (C&D) secondary collection point

Updated on: Jul 3, 2026, 08:01:30 IST

By Mihika Shah

Add

Residents of Babupur village in Sector 106 raised concerns over alleged tree felling on Wednesday near the Municipal Corporation of Gurugram's (MCG) proposed construction and demolition (C&D) secondary collection point.

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According to residents, on Wednesday afternoon, they saw an earthmover uprooting trees near the C&D site…

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According to residents, on Wednesday afternoon, they saw an earthmover uprooting trees near the C&D site. When confronted, the workers alleged that they were contractors deployed by the MCG.

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site. The matter is scheduled for hearing on September 10.

Yash Varmani, a resident of Sector 106, alleged that the contractor was unaware that prior permission from the divisional forest officer was required before felling trees. "They were levelling the area, and in the process, they started uprooting trees," he said.

Athak Bharadwaj, another resident who was also present at the site, said, "The MCG appears to be leaving no stone unturned in pushing this project despite the environmental implications. The Dwarka Expressway region already has limited green cover, and the loss of more trees will only worsen the situation," he added.

Surender Dangi, divisional forest officer (DFO), said the department has not given any permission for felling trees. "Even the Punjab and Haryana High Court restrained that no trees will be cut without any permission in April," he added.

"We will send our team for inspection on Friday and take action accordingly," they said.

In April, the Punjab and Haryana High Court passed an order restraining the Haryana government from felling trees without the court's permission.

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Meanwhile, a senior MCG official told HT that work on the secondary collection point is underway, and officials are ensuring no damage is caused to existing trees. "We will have the matter checked, and if any trees have been felled without due permission, appropriate action will be taken," the official said.

ABOUT THE AUTHOR

Mihika Shah

Mihika Shah is a Correspondent of the Gurugram bureau at the Hindustan Times, where she covers civic issues, residents' grievances, education and culture and art. She joined the Gurugram bureau in 2025, and has done her graduation from Delhi University followed by specialisation in Integrated Multimedia Journalism from the Asian College of

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शिकायत प्राप्ति रसीद

जिला गुरुग्राम

बुक नं0 : 02 रसीद नं0 177

कार्यालय / थाना / चौकी PS R. Park GGM

परिवाद नं0 1971-CAS दिनांक 25/7/26

शिकायतकर्ता का नाम पता एंव मो0 नं0 Suresh Kumar Vermani S/o Ved Parkash R/o T-05 0901-Godrej Meridian Sec-106 GGM-9313707412

शिकायतकर्ता का विवरण And 36 Other Residents Illegal Felling Trees

प्रतिवादी का नाम पता एंव मो0 नं0

हस्ताक्षर (प्राप्तकर्ता)

कार्यालय/थाना/चौकी के कर्मचारी का नाम व पद

जाँच अधिकारी (नाम व रैंक) HC Vikas

मो0 नं0 7015193070

402

25/07/2026

To

The Station House Officer,
P. S. Rajendra Park, Gurugram,
Haryana – 122001
Phone: +91 99999 81837

Subject: Arbitrary and brazen flouting of orders of the Hon'ble Punjab and Haryana High Court and the Hon'ble National Green Tribunal, Principal Bench by the Municipal Corporation of Gurugram and the contractors appointed by it

Respected Sir,

1. It is our painful duty to inform you that the Municipal Corporation of Gurugram and the contractors appointed by it are engaged in arbitrary and brazen flouting of orders of the Hon'ble Punjab and Haryana High Court and the Hon'ble National Green Tribunal, Principal Bench. The site at which such illegal actions have been taken by the Municipal Corporation of Gurugram and the contractors appointed by it is government land in Sector 106, village Babupur, Gurugram, Haryana.

Stay order of the Hon'ble Punjab and Haryana High Court:

2. Their actions have resulted in felling and damaging of trees despite a stay order of the Hon'ble Punjab and Haryana High Court. Through an order dated 1 April 2026, the Hon'ble Punjab and Haryana High Court has granted a stay on felling of trees and has prohibited the cutting of any trees of any age / specie in the entire state of Haryana. Please refer paragraph 4 of the Hon'ble High Court order. A copy of the order is annexed herewith as **Annexure – 1**.

Mandatory prior permission required from the Divisional Forest Officer, Gurugram for cutting of trees

3. Further, the Hon'ble National Green Tribunal, Principal Bench passed an order dated 9 September 2025 that felling of trees require a mandatory prior permission from the Divisional Forest Officer, Mr. Surendra Dangi. The order of the Hon'ble National Green Tribunal at paragraph 84 (i) states that no person shall cut any tree (not falling in the exempted category / agro forestry category as already notified or as may be notified in future by the State of Haryana) standing over his private land or private land owned by any person or public land owned by the Central of State Government, Municipal of Panchayat Authorities or Public Institution or Public Sector

Undertaking or Company except with permission of the Divisional Forest Officer of the District in which such land is situated. A copy of the order of the Hon'ble National Green Tribunal, Principal Bench is annexed herewith as **Annexure – 2**.

4. In the present case, admittedly, the Divisional Forest Officer has not granted any permission for felling of trees as per his statement in the national newspaper, Hindustan Times in an article titled "***Residents flag illegal tree felling near MCG's proposed C&D site in Sec 106***" published on 3 July 2026. Thus, the Municipal Corporation of Gurugram and the contractors appointed by it are engaged in felling of trees despite the above two orders of the Hon'ble Punjab and Haryana High Court and the Hon'ble National Green Tribunal. The residents of nearby societies and villages took video evidence of the felling of trees at the site. The video evidence is being submitted before your office through a pen drive "geonix" 8 GB bearing number *VC020B26*.

5. That whether a C&D Waste Collection facility at village Babupur, Sector 106, Gurugram can be built at the subject site or not is ***sub judice*** before the Hon'ble National Green Tribunal, Principal Bench in Original Application No. 357 of 2026. Through order dated 14 July 2026, the Hon'ble National Green Tribunal has issued a notice to the Municipal Corporation of Gurugram as well as the contractor appointed by it to file a reply. The issuance of notice by the Hon'ble National Green Tribunal is pursuant to there are *prima facie* violations of the applicable environmental norms in setting up of C&D Waste Collection facility at village Babupur, Sector 106, Gurugram. A copy of the order of the Hon'ble National Green Tribunal dated 14 July 2026 is annexed herewith as **Annexure – 3**.

6. As per the **precautionary principle** applicable under the Environment Protection Act, 1986, the Municipal Corporation of Gurugram is now liable to prove that the setting up of the C&D Waste Collection Centre at village Babupur, Sector 106, Gurugram would not violate the applicable environmental norms. Despite this, the Municipal Corporation of Gurugram and the contractors appointed by it are continuing with the setting up of the C&D Waste Collection facility. This would result in violation of the precautionary principle as well as wastage of the public money.

7. In result of the above, the undersigned concerned residents of Sector 106, Gurugram humbly pray your office to intervene due to the following reasons:

(i) There is a contempt by the Municipal Corporation of Gurugram and its contractors of the stay order dated 1 April 2026 of the Hon'ble Punjab and Haryana High Court.

(ii) There is a contempt by the Municipal Corporation of Gurugram and its contractors of the order dated 9 September 2025 by the Hon'ble National Green Tribunal, Principal Bench.

(iii) There is a violation of the precautionary principle under the Environment Protection Act, 1986 by the Municipal Corporation of Gurugram and its contractors by continuing work at the site.

With best regards,

1. T6-0002
2. T7-1802
3) T-4-2403
4) T4-3401
5. T4-1402
6. T6-0002
7. T3-2801
8 T3-2902
9 T3-601
10 T3-602
11 T2-1105
12. T1-1602

(Residents of Sector 106, Gurugram)

13. T2-1903
14 T5-1202
15-T6-1903 - A.
16-T6-1903 -
17 T4 3401
18 T5-704
20. T2-1704
21 - T1-2003
22 - T5-901
23 - T5-901
24) T-4-2404
25) T7-1605
26) T3-1402
27) T3-3802
28) T5-0902
29) T5-0902
30) T3 1402
31) T5-1904
32) T5-1904
33) T1-701
34 T2-403
35) T6-802
36) T5-1602

To,
The Station House Officer,
P.S. Rajendra Park,
Gurugram, Haryana

Subject : Violation of order of the Hon'ble National Green Tribunal by the Municipal Corporation of Gurugram resulting in contempt of court

Respected Sir,

1. That the Hon'ble National Green Tribunal ("NGT") issued an order dated 24.01.2018 in M.A. 58/2018 in OA 418/2017 stating that setting up of a C & D waste processing unit cannot be set up without obtaining prior authorisation from the Haryana State Pollution Control Board. The order of the Hon'ble NGT order is annexed as Annexure-2.

2. That the Municipal Corporation of Gurugram ("MCG") invited tenders [Tender ID 2025-HRY_461913_1] for C. and D waste processing facility / designated C and D waste dump site at Babupur. However, no prior authorization from the Haryana State Pollution Control Board ("HSPCB") is on record. In fact, regional officer of the HSPCB gave a statement in national newspaper "Hindustan Times" that the department was not even aware of the site at village Babupur, Sector 106, Gurugram. Thus, the MCG is required to show whether prior authorization from HSPCB was obtained

P.T.O

by it before issuing tender no. 2025-HRY-461913-1 (Annexure 1).

3. That if indeed such prior authorization from the HSPCB has not been obtained by the MCG, then it would result in violation of the order dated 24.01.2018 of the Hon'ble NGT and contempt of court by the MCG. The contempt of Hon'ble NGT's order is punishable by imprisonment of 3 years under section 26 of the National Green Tribunal Act, 2010.

4. Further, the evidence of tree felling by the MCG and its contractor is submitted herewith as Annexure-4. Thus, the undersigned residents of Sector 106, Godrej Meridien society and nearby sectors, humbly request your good office to stop MCG from continuing their actions of contempt of court & prevent further felling of trees. Please refer Annexure-4.

Thank you,
With kind regards,
Yours
(DXP-CDR)

T-4/2404 T-4-2403, T-5-0801 T-7-903 T3-502

Mayur T5-704

(Residents)

REPORTABLE

IN THE SUPREME COURT OF INDIA

CIVIL ORIGINAL JURISDICTION

I.A.NO. 487/2017, I.A. NO. 491/2017, I.A. NO. 494/2017,

I.A. NO. 489/2017 AND I.A. NO. 495/2017

in

Writ Petition (Civil) No.13029/1985

M.C.MEHTA ...PETITIONER

VERSUS

UNION OF INDIA & ORS ...RESPONDENTS

J U D G M E N T

Madan B. Lokur, J.

1. We had heard I.A. No. 494 of 2017 along with other I.As and had passed an order on 29th March, 2017. The operative portion of the order is as follows:

> "Accordingly, for detailed reasons that will follow, we direct that:
>
> (a) On and from 1st April, 2017 such vehicles that are not BS-IV compliant shall not be sold in India by any manufacturer or dealer, that is to say that such vehicles whether two wheeler, three wheeler, four wheeler or commercial vehicles will not be sold in India by any manufacturer or dealer on and from 1st April, 2017.
>
> (b) All the vehicle registering authorities under the Motor Vehicles Act, 1988 are prohibited for registering such vehicles

> on and from 1st April, 2017 that do not meet BS-IV emission standards, except on proof that such a vehicle has already been sold on or before 31st March, 2017."

2. We now give our reasons for the above order.

Recent history

3. Sometime in 2003 the National Auto Fuel Policy was announced by the Government of India for the implementation of Bharat Stage norms for vehicular emissions. This Policy was based on the recommendations of the Mashelkar Committee constituted in 2001. It is not necessary to detail the Policy except to say that it provides a road map for achieving vehicular emission norms over a period of time and the corresponding fuel quality upgradation requirements. A road map for vehicular emission norms for new vehicles was drawn up and those cities facing serious pollution levels were brought under a separate road map for quicker adoption of emission norms.

4. In the process of implementing the Bharat Stage vehicular emission norms, or the BS norms for short, a few communications were issued concerning the registration of motor vehicles. Our attention was first drawn to a communication dated 23rd March, 2005 issued by the Ministry of Shipping, Road Transport and Highways of the Government of India which related to the registration of motor vehicles from 1st April, 2005. This was in the context of the introduction of BS-III compliant vehicles in

the cities of Delhi, Ahmedabad, Bangalore, Mumbai, Pune and Kolkata. The communication clarified that only BS-III compliant vehicles manufactured on or after 1st April, 2005 could be registered in these cities. However, BS-I and BS-II compliant vehicles could be registered in the rest of the areas of the States and also in these cities for some time till the accumulated stock is exhausted.

5. The relevant extract of the communication dated 23rd March, 2005 stated as follows:

> "It is clarified that the gazette notifications in this regard clearly mention that these norms shall be applicable to only vehicles manufactured on or after 1st April, 2005. Bharat Stage II and Bharat Stage I compliant vehicles manufactured prior to this date would, therefore, be eligible for registration in the above named cities and rest of the areas of the States respectively for sometime after 1st April, 2005 till the accumulated stock is exhausted."

6. If we examine the text, it is not very clear how long after 1st April, 2005 would the registration of BS-I and BS-II compliant vehicles be permitted except that it would be till the accumulated stock is exhausted, that is for an indefinite period. Nothing of value can be derived from this communication but it is referred to only since learned counsel for the manufacturers and dealers of motor vehicles (for short the interveners) suggested that notifications that amend the Central Motor Vehicles Rules, 1989 and communications issued in the context of BS-IV compliant

vehicles, which are the subject matter of the present discussion, should be similarly interpreted while learned *Amicus* submitted that we should look to the purpose of the National Auto Fuel Policy as also the overall objective in introducing Bharat Stage emission norms.

7. A second communication brought to our notice was issued by the Ministry of Road Transport and Highways of the Government of India on 5th April 2010 relating to the registration of four wheeled vehicles with effect from 1st April, 2010. This communication is somewhat similar to the earlier communication of 23rd March, 2005 and drew attention to a notification dated 9th February, 2009 amending the Central Motor Vehicles Rules, 1989 (hereinafter referred to as "the Rules"). The notification laid down the Mass Emission Standards (BS-III) for two wheeler vehicles and three wheeler vehicles manufactured on and from 1st April, 2010. It also laid down the Mass Emission Standards (BS-IV) for M and N category four-wheeled vehicles manufactured on or after 1st April, 2010. The notification required that BS-III emission norms would be applicable to all vehicles manufactured on or after 1st April, 2010. However, BS-IV emission norms would be applicable in the National Capital Region and ten other mega cities, that is, Mumbai, Kolkata, Chennai, Ahmedabad, Bangalore, Hyderabad including Secunderabad, Kanpur, Pune, Surat and

Agra in respect of four-wheeled vehicles manufactured on or after 1st April, 2010 except four wheeler transport vehicles plying on Inter State Permits, National Permits or All India Tourist Permits.

8. The communication dated 5th April, 2010 clarified that BS-III compliant vehicles could be registered in the abovementioned Region and cities even after 1st April, 2010 till the accumulated stock is exhausted. To get over the uncertainty of determining the accumulated stock, the Principal Secretaries (Transport) and Transport Commissioners of the concerned States were expected to get details of BS-III compliant vehicles in the accumulated stock from the concerned dealers and manufacturers. In any event, the period for registration of such vehicles was again left indeterminate and only the accumulated stock was identified or quantified.

9. In this background, a further amendment was carried out to sub-rule (15) of Rule 115 of the Rules on 21st May, 2010 by adding a proviso to the effect that BS-IV emission norms would be applicable in the cities of Sholapur and Lucknow in respect of four wheeler vehicles manufactured on or after 1st June, 2010 except four wheeler transport vehicles plying on Inter-State Permits or National Permits or All India Tourist Permits within the jurisdiction of the said cities. Yet another amendment was carried out on 16th July, 2014 adding a proviso to sub-rule (15) of Rule 115 of the Rules to the effect that BS-IV emission norms were made applicable to

several other cities in respect of four-wheeled vehicles manufactured on or after 1st October, 2014 except four-wheeled transport vehicles plying on Inter-State Permits or National Permits or All India Tourist Permits within the jurisdiction of those cities.

10. A similar amendment was carried out on 14th July, 2015 including some other cities where BS-IV emission norms would be applicable in respect of four wheeler vehicles manufactured on or after 15th July, 2015 and finally an amendment was carried on 19th August, 2015 in respect of several other cities in respect of four-wheeled vehicles manufactured on or after 1st October, 2015 and 1st April, 2016. Eventually, by an amendment carried out on 19th August, 2015 it was mandated that BS-IV norms would come into force all over the country in respect of four-wheeled vehicles manufactured on or after 1st April, 2017.

Two and three wheeler vehicles

11. The application of BS-IV norms in respect of two wheeler and three wheeler vehicles was somewhat different. As mentioned above, BS-III emission norms were made applicable to two and three wheeler vehicles on and from 1st April, 2010.

12. Thereafter sub-rule (16) was inserted in Rule 115 of the Rules on 4th July, 2014 to the effect that new models of two wheeler vehicles manufactured on and after 1st April, 2016 shall comply with BS-IV

emission norms and existing models of two wheeler vehicles would comply with BS-IV emission norms from 1st April, 2017.

13. In respect of three wheeler vehicles, sub-rule (17) was inserted in Rule 115 of the Rules on 12th June, 2015 to the effect that BS-IV standards would be applicable to new models of three wheelers manufactured on or after 1st April, 2016 and for existing models of three wheelers manufactured on or after 1st April, 2017.

View of the Government

14. It seems that there still remained some confusion with regard to the interpretation of the various notifications relating to the registration of vehicles conforming to BS-III emission norms. This confusion partly arose from a response submitted by the Environment Protection Control Authority (for short EPCA) constituted by a notification issued under the provisions of the Environment (Protection) Act, 1986. To clear the air, so to say, the Ministry of Petroleum & Natural Gas filed an affidavit in I.A. No.345 of 2014 on or about 27th March, 2015 to place on record certain additional documents on behalf of the Ministry of Environment, Forests and Climate Change. One of the additional documents was the comments of the Ministry of Petroleum and Natural Gas in response to issues raised by EPCA. It was stated therein that the Government has fully implemented the recommendations of the Auto Fuel Policy, 2003. In fact it

has decided to go beyond the recommendations made therein on a voluntary basis by extending BS-IV auto fuel to 50 more cities by March 2015 with preference to most polluted cities, State capitals and cities with million plus population subject to logistical constraints. It was further stated that out of these 50 cities, BS-IV auto fuel has already commenced supply to 26 cities and the remaining 24 cities would be covered by 15th March, 2017.

15. It was clear therefore that as far back as in March, 2015 the Government was prepared to walk the extra mile in ensuring that BS-IV auto fuel is readily available at least in the mega cities.

16. Earlier, an office memorandum was issued by the Ministry of Road Transport and Highways on 3rd March, 2015 (apparently in response to the issues raised by EPCA) wherein it was stated that though the intent is to have only BS-IV compliant vehicles manufactured after 1st April, 2017 but the inventory of old vehicles manufactured by 31st March, 2017 would need to be 'protected' and registered. It was clarified that there is no bar on the sale or registration of vehicles produced prior to the above time lines and that this was the procedure followed when the country migrated to BS-II and BS-III emission norms in 2001 and 2005.

The perspective

17. To place the matter in perspective, it is clear that the Government

was quite determined to introduce BS-IV emission norms in respect of all vehicles manufactured on and from 1st April, 2017 onwards. The implementation of this policy was gradual, starting with the NCR Region and ten mega cities and this was extended from time to time to other cities. The intent was made clear that with the progress in the implementation plan there would be an increase in the number of cities where the sale and registration of vehicles that are not BS-IV compliant would be prohibited. This was as broad a hint as any that the sale and registration of vehicles that were not BS-IV compliant would be eventually prohibited with the cut-off date being 1st April, 2017. This was coupled with the mandate to manufacturers of two and three wheeler vehicles that they could manufacture new models of vehicles on and after 1st April, 2016 only if they comply with BS-IV emission norms. The determination to switch over from BS-III compliant vehicles to BS-IV compliant vehicles was more than evident.

18. To avoid any inconvenience to anybody, the Government was quite clear that BS-IV auto fuel would also be made available throughout the country.

19. Implicit in this nation-wide exercise was the possibility of the unexpected, that is, unsold stock of BS-III compliant vehicles or the non-availability of BS-IV auto fuel. It is in this context that the

Government gave clarifications in 2005 and 2010 and suggested in March 2015 employing a rather amorphous phrase, that the sale and registration of non-compliant vehicles would be permitted till the 'accumulated stock' is exhausted. However, this was not and could not reasonably be intended to permit the interveners to continue manufacturing non-compliant vehicles and then depend on grace for the disposal of accumulated stock. Plan A was to switch over to BS-IV compliant vehicles and Plan B was to take care of unforeseen and emergent situations – it is not that the Government gave up implementation of Plan A.

20. This is more than clear from the fact that when this writ petition was taken up for consideration on 5th January, 2016, it was submitted by the learned Solicitor General that BS-IV fuel would be available by 1st April, 2017 all over the country. This submission is recorded in ***M.C. Mehta v. Union of India.***[1].

Recommendation to Parliament

21. In the meanwhile, the Standing Committee of Parliament on Petroleum & Natural Gas also expressed concern over the phenomenal rise of air pollution and made some recommendations. We are mentioning this only in the limited context of indicating the concern of the Executive

1 (2016) 4 SCC 269 para 36.

earlier expressed and now the Legislature also over issues of air pollution.

22. The Standing Committee submitted its Fifth Report to the Lok Sabha Secretariat. This was presented to the Lok Sabha on 7th May, 2015 and was laid in the Rajya Sabha on the same date. In the introductory paragraphs, it is stated by the Standing Committee as follows:

> "Greenhouse gases induced global warming and subsequent climate change are some of the perils threatening the survival of present day generation. The process of industrialization and development has caused innumerable changes in global climate. These climatic changes, which have occurred principally through the burning of fossil fuels such as gasoline and diesel in the transportation sector and automobile industry have led to an increase in the concentration of green house gases such as Carbon Dioxide, Methane, Nitrous Oxide and Hydro Flouro Carbons in the atmosphere, thus disrupting the ecological and social systems across the globe.
>
> 1.2 The rapid growth in automobile industry and the increasing number of vehicular population have become one of the major causes in the phenomenal rise of air pollution in India. Though air pollution is caused by several factors, the dramatic rise in the vehicular emissions has compounded the problem."

23. In the first recommendation made by the Standing Committee in its Report, it was noted that the Auto Fuel Policy of 2003 and the Expert Committee Report on Auto Fuel Vision & Policy, 2025 (chaired by Shri Saumitra Chaudhury, the then Member of the Planning Commission) are vital public policy instruments at the disposal of the Government to address growing vehicular pollution in the country. The Committee

therefore recommended that the concerned Ministry should chalk out an action plan for the implementation of the Expert Committee recommendations as per the time line suggested or wherever possible earlier and adhere to the policy in letter and spirit.

24. The recommendation was made in the context of the Standing Committee having noted that the Expert Committee had recommended a detailed road map for auto fuel quality till 2025 for the country. The Standing Committee appreciated the comprehensive coverage of various issues by the Expert Committee in its Report such as fuel quality, demand and supply of fuel, infrastructure and logistics of fuel quality related projects, promotion of alternate fuels, vehicular technologies, emission norms, health issues, ambient air quality, reduction of pollution from in-use vehicles and fiscal measures for funding requisite up-gradation of oil refineries.

25. At this stage we must record that the learned Solicitor General stated before us that the Central Government through its refineries had incurred an expenditure of about Rs. 30,000 crores to make available BS-IV auto fuel from 1st April, 2017 all over the country. This was a reaffirmation, confirmation and reiteration of the submission made on 5th January, 2016 that BS-IV fuel would be available by 1st April, 2017 all over the country. In other words, we take it that the Government was and is pro-actively

supporting the reduction of vehicular pollution by controlling the emission norms and complying with the Bharat Stage standards keeping in view the auto fuel policy and the Report of the Expert Committee referred to by the Parliamentary Standing Committee.

Proximate developments

26. To revert to the narration of facts, it may be stated that more than a year after the 5th January, 2016 submission, EPCA held a meeting with various stakeholders on 19th October, 2016 for reducing vehicular emission norms. The minutes of that meeting record that the Ministry of Surface Transport and Highways as well as the Ministry of Petroleum and Industrial Gas intimated that BS-IV standards had been notified and introduced in key cities in 2010. *Ergo*, the country was well prepared for a nation-wide roll out of BS-IV auto fuel.

27. In the meeting, the representatives of the Society of Indian Automobile Manufacturers (SIAM) assured that the automobile industry will not manufacture any vehicle on and from 1st April, 2017 which did not meet BS-IV emission norms. Keeping this in mind and the progression over the last more than a decade to control emission norms, EPCA clarified that there would be no sale or registration of non-BS-IV compliant vehicles from 1st April, 2017 and that this should be communicated to all manufacturers so that they have sufficient notice of about six months to

plan their production and sales. In response, the representatives of SIAM expressed the view that it would be difficult for the automobile manufacturers to ensure compliance. EPCA however insisted that all manufacturers should ensure that the BS-III compliant stock of vehicles is exhausted before 1st April, 2017 since BS-IV compliant vehicles reduce pollution by about 80% in particulate matter as compared to BS-III compliant vehicles.

28. On 1st December, 2016 SIAM wrote to the Central Pollution Control Board (CPCB) confirming that only BS-IV compliant vehicles would be manufactured from 1st April, 2017. However, it was submitted that EPCA's direction that there should be no sale or registration of BS-III compliant vehicles from 1st April, 2017 is at variance with the notifications issued by the Government of India. It was also mentioned in the communication that the sale of BS-III compliant vehicles would depend on market forces and that it is beyond the control of vehicle manufacturers to ensure that the entire stock of BS-III compliant vehicles is exhausted by 1st April, 2017.

29. This communication was responded to by the CPCB on 10th December, 2016 indicating that EPCA had called the meeting on 19th October, 2016 only to ensure that stock of BS-III compliant vehicles are exhausted before 1st April, 2017 for the reasons mentioned in the minutes of that meeting. It was reiterated that BS-IV auto fuel would be available

all over the country from 1st April, 2017.

30. Thereafter, there were communications exchanged between EPCA and CPCB and SIAM wherein it was reiterated that the stock of BS-III compliant vehicles should be exhausted by 31st March, 2017 while SIAM stated that it would not be possible to exhaust that stock.

31. In this background, one of the members of SIAM, that is, Bajaj Auto Limited filed I.A. No. 487 of 2017 wherein it is prayed that an order may be passed by this Court directing the Union of India and/or EPCA to issue a communication to all vehicle manufacturers that on or after 1st April, 2017 vehicles that are not BS-IV compliant would not be manufactured, sold or registered across the country.

32. Notice was issued in the above application on 20th March, 2017 which led to a spate of intervention applications by some of the automobile manufactures, by SIAM and by an association of dealers of automobile vehicles. Learned *Amicus* also filed an independent application being I.A. No. 494 of 2017 wherein it was prayed that on and from 1st April, 2017 only such vehicles that comply with BS-IV standards shall be manufactured, sold and registered across the country.

33. As mentioned above, we heard all the learned counsel and passed the order extracted above on 29th March, 2017.

The issue

34. A perusal of the facts leading up to presentation of the IAs before us leads us to the simple question whether the accumulated stock of BS-III compliant vehicles manufactured on or before 31st March, 2017 could be sold and registered after 1st April, 2017.

35. It appeared to us that if someone was to make a *bona fide* purchase of a BS-III compliant vehicle on or immediately before 31st March, 2017 it might not be possible for that individual to have the vehicle registered before the cut-off date. Therefore, we felt it reasonable to permit the registration of BS-III compliant vehicles purchased on proof on or before 31st March, 2017 from 1st April, 2017 and have ordered accordingly.

36. Accordingly, the issue that remains for consideration is whether the stock of BS-III compliant vehicles manufactured on or before 31st March, 2017 can be sold from 1st April, 2017 onwards.

Submissions and discussion

37. The primary contention of learned counsel for the interveners manufacturing and dealing in BS-III compliant vehicles is that in terms of the notifications issued from time to time, the manufacture of BS-III compliant vehicles was permitted up to 31st March, 2017 except new models of two wheeler and three wheeler vehicles. Consequently, the interveners were entitled to carry out such manufacturing activities and in

doing so they had not violated any prohibition or any law. Therefore, it would be unreasonable to expect them to clear the stock of BS-III compliant vehicles on or before 31st March, 2017 or to prohibit the sale of such stock on and from 1st April, 2017. In this context it was submitted that it was erroneous for the learned *Amicus* to suggest that the 'manufacture' of BS-III compliant vehicles till 31st March, 2017 should be read in a manner which would result in a prohibition on and from 1st April, 2017 on the sale and registration of such vehicles or to prejudicially affect the commercial interest of the interveners.

38. In our opinion, the interveners have completely ignored the history of the last a decade or so which led to the introduction of Bharat Stage norms and their implementation in a phased manner. The Auto Fuel Policy was announced by the Government of India, as mentioned by the Parliamentary Standing Committee, taking into account, *inter alia*, the rapid growth in the automobile industry and the increasing number of vehicular population which had become "one of the major causes in the phenomenal rise of air pollution in India." The Standing Committee noted that air pollution is caused by several factors but the dramatic rise in vehicular emissions has compounded the problem.

39. It is quite evident therefore that given the recent history and unfolding of events, it was incumbent upon the automobile industry to

modulate its views and give secondary importance to commercial profits and take pro-active steps to reduce vehicular pollution. It seems that the automobile industry was quite sanguine that its desire for selling accumulated stock of BS-III compliant vehicles even after 1st April, 2017 would be acceded to. This is evident from the past practice when it had become necessary, in one sense, for the Government of India to virtually submit to the commercial interests of the automobile industry by permitting the registration of BS-III compliant vehicles in some cities while permitting the sale and registration of BS-I and BS-II compliant vehicles in other cities even after the cut-off date of 1st April, 2005 till the accumulated stock is exhausted.

40. Five years later the Government of India had again to submit to the commercial interests of the automobile industry when it was required to issue a communication on 5th April, 2010 permitting the registration and therefore the sale of BS-III compliant vehicles even after 1st April, 2010 till the accumulated stock is exhausted.

41. No one knows, nor were we told how long these accumulated stock were expected to last or actually lasted. But the fact of the matter is that we would have expected the automobile industry to have shown some responsibility and taken a positive approach to reduce vehicular pollution and ensure that non-conforming vehicles are not manufactured so that air

pollution in the country does not continue unabated and to take measures to curtail the phenomenal rise in air pollution recognized by the Parliamentary Standing Committee.

42. Some responsible manufacturers, especially Maruti Suzuki being the market leader in four wheeler vehicles, did take the necessary 'down to business' approach and we were told that it had switched over to manufacturing BS-IV compliant vehicles quite a few years ago. Other manufacturers of four wheeler vehicles also took similar steps, but somewhat tentatively.

43. Notwithstanding this, several members of SIAM continued rather unfortunately to take it easy and (as the figures filed before us by SIAM suggest) though there was a decrease in the production of BS-III compliant vehicles between January, 2016 and December, 2016 that is for the entire calendar year, unfortunately, there was only a marginal increase for the corresponding period in the manufacture of BS-IV compliant vehicles. However, there was a sudden spurt of manufacturing BS-IV compliant vehicles in February, 2017 and a decline in the manufacture of BS-III compliant vehicles except commercial vehicles – indicative of a lack of planning and perhaps real concern over a prolonged past period. The production figures of some of the major manufacturers are given below in the table:

PRODUCTION OF VEHICLES
(as supplied by **SIAM)**

Name of Company	**January 2016** BS-III	**December 2016** BS-III	**February 2017** BS-III		**January 2016** BS-IV	**December 2016** BS-IV	**February 2017** BS-IV
TWO WHEELERS							
Hero Motor Corp Ltd.	5,32,078	2,98,839	63,026		NIL	33,078	4,40,275
Honda Motorcycle & Scooters India Pvt. Ltd.	3,63,805	1,91,534	2,30,022		13,644	7,583	1,45,217
India Yahama Motors	50,077	45,017	120		2,880	3,800	66,499
TVS Motor Company Ltd.	1,65,956	1,48,519	22,049		NIL	NIL	1,35,448
THREE WHEELERS							
Mahindra & Mahindra Ltd.	4,204	3,530	3060		NIL	NIL	52
Piaggio Vehicles Pvt. Ltd.	12,730	7,287	4,388		NIL	NIL	6,366
MEDIUM AND HEAVY TRUCKS, OTHER COMMERCIAL VEHICLES							
Ashok Leyland	10,935	9,402	11,528		642	1,661	1,998
Mahindra & Mahindra	12,001	8,708	11,287		2,600	4,605	6,096
Tata Motors	27,507	13,734	22,915		3,627	5,004	7,783



44. The sum and substance of the discussion is that the automobile industry had, at the very minimum, a five-year warning that it would have to consider issues relating to air pollution as a part of its manufacturing activities and production strategy and thereafter the industry had more than five years to plan out its activities and revisit the strategy, but did not do so.

45. On the contrary the automobile industry gave a variety of excuses for not making adjustments for the benefit of the people of the country. Similarly, efforts of the Government to regulate and reduce vehicular emissions were not given the support that they deserved, including taking advantage of time granted for phased introduction of BS-IV complaint vehicles as per the Government policy. It was submitted during the hearing that the sale of BS-III compliant vehicles would depend on market forces; at one time it was submitted that demonetization (which took place in November, 2016) upset their plans; at another time it was submitted that some models are slow moving and therefore could not be sold and yet at another time it was submitted that weak market conditions did not make it possible for the industry to dispose of the existing BS-III compliant stock. None of these explanations justify the failure of the automobile industry to increase the production of BS-IV compliant vehicles, in spite of sufficient notice of a switch-over and reduce the production of BS-III compliant

vehicles. The attempt, sadly, seems to have been to push all concerned to the wall by putting before them a *fait accompli* situation and by ignoring the concerns of millions of our country men and women who are entitled to breathe fresh air or at least breathe less polluted air. As is apparent from the figures relating to the production of BS-III and BS-IV compliant vehicles supplied to us, this activity and inactivity has been entirely for commercial benefits and to avoid the cost of upgrading available technology.

Literal versus purposive interpretation

46. Learned counsel for the interveners sought to impress upon us that we should interpret the various notifications issued from time to time only in a literal manner. When the health of millions of people in our country is involved, notifications relating to commercial activities ought not to be interpreted in a literal manner. The only option in such eventualities is to give a purposive interpretation to notifications that directly concern public health issues which have an impact not only in the present but also in the future. We were informed that the life of vehicles is in the range of 10 and 15 years. While the development versus environment paradigm could be debated upon, there cannot be any debate in the development versus public health paradigm.

47. Our attention was also drawn to the fact that the existing stock of

BS-III compliant vehicles is a miniscule percentage of the overall number of vehicles on the roads in the country and if that miniscule number is brought on the roads by way of sale, it would only result in a marginal increase in air pollution. With respect, this submission cannot be accepted. The health of every person in our country is important and we are more than reluctant to accept any submission that the health of the people can be compromised, even in the smallest measure, for the commercial interests of the automobile industry or of any industry for that matter. Additionally, given that the life of such vehicles would be at least 10 years (as submitted by the interveners) the concern is not only for the present population of the country but for future generations who also have an entitlement to breathe pollution free air. This is what sustainable development and inter-generational equity is all about. Do we really want to leave behind drastically polluted air to be breathed in this case at least for the next between 10 and 15 years?

48. We must also point out that it was brought to our notice by the learned Solicitor-General that the Government of India has expended, through its refineries, an amount of about Rs. 30,000 crores for implementing the Auto Fuel Policy along with the recommendations of the Expert Committee in making BS-IV quality fuel available positively by 1st April, 2017 in keeping with the stated objective of 'One country - One

fuel' in the shortest possible time. Surely, such a huge investment from the tax payers earnings cannot be defeated only with a view to subserve the interest of the automobile industry which, as discussed by the Parliamentary Standing Committee, has become one of the major causes in the phenomenal rise of air pollution in India.

49. Given this background, it is not at all surprising that learned *Amicus* vehemently contended that the various notifications do not deserve to be given a literal meaning but a purposeful interpretation. What is the mischief sought to be remedied and how best is it possible to remedy that mischief? To recall what lyricist and singer Bob Dylan had to say – the answer is blowing in the wind.

50. Learned *Amicus* is right that the entire issue must be looked at in a particular context, as a matter of public health and as a matter of public concern. It is a matter of common knowledge that polluted air can lead to a variety of health problems and this is evident from a casual visit to the website of the CPCB and the World Health Organization. Admittedly, the use of BS-IV auto fuel reduces particulate matter in the air by 80% as compared to BS-III auto fuel. Under these circumstances, it cannot be said that learned *Amicus* erroneously seeks a prohibition on the sale and registration of BS-III compliant vehicles on and from 1st April, 2017.

51. It is worth noting that the WHO reported that as urban air quality

declines, the risk of stroke, heart disease, lung cancer, and chronic and acute respiratory diseases, including asthma, increases.[2] Similarly, the CPCB says in its Annual Report 2014-15 that "Scientific studies have indicated links between fine particulate matter and numerous health problems including bronchitis, acute and chronic respiratory symptoms such as shortness of breath and painful breathing."[3]

52. Additionally, if the entire scheme laid out by the Government - of discouraging the manufacture of polluting vehicles and gradually phasing them out coupled with their gradual replacement with fuel efficient vehicles, availability of cleaner and greener fuel and compliance with fuel emission norms is appreciated in a much larger context rather than on a notification by notification basis – the objective behind the scheme would be apparent. The Government could very well have issued one single notification way back in 2010 that with effect from 1st April, 2017 the manufacture, sale and registration of vehicles that do not comply with BS-IV emission norms would be prohibited. It did not do so to enable all concerned, particularly the auto industry and marketing strategists to gradually manage their affairs rather than subject them to a sudden future

[2] http://www.who.int/phe/health_topics/outdoorair/databases/cities/en/ (Accessed on 5th April, 2017).

[3] http://cpcb.nic.in/upload/AnnualReports/AnnualReport_55_Annual_Report_2014-15.pdf (Accessed on 5th April, 2017).

shock. The scheme of a gradual phase-out is now sought to be perverted through a literal interpretation of each notification, unfortunately, for a commercial benefit rather than being appreciated in a larger canvas for the benefit of society as a whole.

53. There is no doubt, therefore, that the various notifications issued and the amendments made to the Rules must be read cumulatively in a purposive manner with the objective of enhancing or protecting further deterioration of the quality of the air we breathe from a continuing and continuous onslaught of pollutants.

Office memorandum of 3rd March, 2015

54. In was submitted by learned counsel for the interveners that inherent in the manufacture of BS-III compliant vehicles was their entitlement to sell such vehicles any time on or after 1st April, 2017 until the accumulated stock is exhausted. Given the experience of the past, they legitimately expected that they would be allowed to clear the accumulated stock. We questioned learned counsel for the interveners on the time required for disposal of the accumulated stock. No one gave any definite answer – the answers varied from about 5 and 6 months to one year and hedged in with conditions dependent upon market forces and slow moving models. Perhaps Siri would have given a more definite answer.

55. In this context, reference was made to the most recent office

memorandum dated 3rd March, 2015 issued by the Ministry of Road Transport and Highways. It was submitted that the office memorandum made clear the intention of the various notifications, namely, to ensure the manufacture of only BS-IV compliant vehicles after 1st April, 2017 and at the same time ensure that BS-III compliant vehicles manufactured on or before 31st March, 2017 are protected and registered. This is clear from the statement in the office memorandum that there is no bar on vehicles produced prior to the above time lines, meaning thereby that BS-III compliant vehicles manufactured on or before 31st March, 2017 could be sold or registered keeping in view the past practice.

56. In our opinion, the only reasonable construction of the office memorandum (issued two years ago) would be that subject to the occurrence of some extraordinary or unforeseen event, should it become necessary to sell and register BS-III compliant vehicles on or after 1st April, 2017 limited exceptions on a case to case basis could be claimed and considered. The office memorandum cannot reasonably be interpreted as a *carte blanche* to the automobile industry to continue the manufacture of BS-III compliant vehicles till the very last day and then plead the necessity of clearing accumulated stock of BS-III vehicles. This would make a mockery of the efforts of all concerned in regulating vehicular emissions and virtually enabling the interveners to emasculate an important

component of the right to life guaranteed by Article 21 of the Constitution, namely, the entitlement of millions of our country men and women to breathe less polluted air and ignore public health issues in conducting their business. We cannot be asked to shut our eyes to the phenomenal rise in pollution levels in the country.

Blaming EPCA

57. It was also contended by learned counsel for the interveners that the automobile industry (as indeed any other industry) needs stability, certainty and predictability in the regulatory regime. This is undoubtedly true but that stability, certainty and predictability was apparent from the time the National Auto Fuel Policy was announced in 2003. Rather than admit responsibility for a lack of concern of public health issues, some of the interveners have sought to blame EPCA for its failure to approach the Government of India to seek amendments to the notifications issued from time to time and to incorporate a prohibition on the sale and registration of BS-III compliant vehicles on or after 1st April, 2017. Unfortunately, finger-pointing and blame games do not lead anyone anywhere and deserve to be discouraged.

58. In any event, the fact is that EPCA had convened a meeting of all stakeholders on 19th October, 2016 and had brought to the notice of the representatives of SIAM that there would be no sale and registration of

BS-III compliant vehicles from 1st April, 2017 and that this should be communicated to all manufacturers. The clear intention of EPCA was to give sufficient notice of almost six months to enable the automobile industry to plan its production and sale and take pro-active steps to significantly decrease the production of BS-III compliant vehicles and correspondingly significantly increase the production of BS-IV compliant vehicles. Unfortunately, SIAM did not heed the caution but expressed the view that it would be difficult to ensure compliance. We were also told that EPCA had no jurisdiction or authority to give such a direction. However, that is not an issue of concern at the present moment.

59. EPCA also pointed out in the meeting that BS-IV compliant vehicles reduce pollution by 80% of particulate matter as compared to BS-III compliant vehicles, but even this had no effect.

60. The meeting convened by EPCA was followed up by the CPCB when it wrote to SIAM on 10th December, 2016 reiterating that BS-IV fuel would be available all over the country from 1st April, 2017 and that the automobile industry should ensure that the stock of BS-III compliant vehicles are exhausted before that date for reasons mentioned in the minutes of the meeting held on 19th October, 2016. Even this had no effect on SIAM. Therefore, to blame EPCA for their problems is rather unfair of the interveners.

61. However one may look at the issue of air pollution, it is time to realize that a collective effort is needed to clear up the air. In this process, the interveners have a huge role and they should now wake up to their responsibility for the benefit of all of us.

Conclusion

62. For the reasons given above, we allow I.A. No. 494 of 2017 filed by the learned *Amicus* and I.A. No. 487 of 2017 by Bajaj Auto Limited. The intervention applications and submissions made therein by the automobile industry and the dealers association are rejected.

……..…….J
(Madan B. Lokur)

New Delhi;
April 13, 2017

……..…….J
(Deepak Gupta)

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Publisher has only added the Page para for convenience in referencing.

LETTER OF ACCEPTANCE

To

SURENDER SINGH CONTRACTOR
SHOP NO.4, VPO JHARSA NEAR CH. BAKHTAWAR COMMUNITY CENTRE, GURGAON , HARYANA, 122003 **[2021R5158]**
E-mail- singh.surender899@gmail.com
Contact No.- 9818343770

Memo No.- HEWP/AC-129007 **Dated - 10/10/2025**

Subject:- Providing the fencing 6mtr height at the CandD waste processing facility/designated CandD waste dump site at Babupur under the area of Municipal Corporation, Gurugram. **Chargeable to:** Estimate for providing the fencing 6mtr height at the CandD waste processing facility/designated CandD waste dump site at Babupur under the area of Municipal Corporation, Gurugram.[118.86].....**(Tender id : 2025_HRY_461913_1)**

Agreement Amount (Rs.) 90,15,421/-	
Construction Amount (Rs.)	90,15,421/-
Operation & Maintenance Amount (Rs.)	0/-

This is to notify you that your Bid dated 11/08/2025 vide e-Tender Number-2025_HRY_461913_1 for the contract Price of Rupees 90,15,421/-, as corrected and modified in accordance with the Instructions to Bidder is hereby accepted.

Time Period for Construction	**150 Days**
Defect Liability Period	**365 Days**

Part-A Based on HSR Items

As per approved DNIT					Ceiling Rates	
Sr. No.	**Description**		**Qty.**	**Unit**	**Rate (Rs.)**	**Amount (Rs.)**
1	HSR 9.33	SHEET ROOFING Providing and fixing precoated galvanised iron profile sheets (size, shape and pitch of corrugation as approved by Engineer-in-charge) 0.50 mm (plus 0.05 %) total coated thickness with zinc coating 120 grams per sqm as per IS: 277, in 240 mpa steel grade, 5-7 microns epoxy primer on both side of the sheet and polyester top coat 15-18 microns. Sheet should have protective guard film of 25 microns minimum to avoid scratches during transportation and should be supplied in single length up to 12 metre or as desired by Engineer-in-charge. The sheet shall be fixed using self drilling /self tapping screws of size (5.5x 55 mm) with EPDM seal, complete up to any pitch in horizontal/ vertical or curved surfaces, excluding the cost of purlins, rafters and trusses and including cutting to size and shape wherever required. **[Through Rate]**	3120.00	Sqm	451.08	1407369.60
2	HSR 4.12	Earth work in excavation by mechanical means (Hydraulic excavator)/manual means over areas (exceeding 30 cm in depth, 1.5 m in width as well as 10 sqm on plan) including getting out and disposal of excavated earth lead up to 50 m and lift up to 1.5 m, as directed by Engineer-in-charge. 1. All kinds of soil **[Through Rate]**	585.00	cum	69.81	40838.85
3	HSR 13.29	SIGLE/BUILT-UP STEEL/TUBULAR SECTIONS Steel work welded in built up sections/ framed work, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer using structural steel etc. as required. 2. In gratings, frames, guard bar, ladder, railings, brackets, gates and similar works **[Through Rate]**	49195.47	Kg.	74.29	3654485.49
4	HSR 17.5	Clearing and Grubbing Road Land . Compacting Original Ground 3. Compaction of Earthwork Compaction of & preparation of sub grade including loosening, levelling of earth 225 mm thick top layer, rough dressing of soil, final dressing of earth to give level, camber, watering, rolling with road roller, compacting the bed to achieve minimum dry density as given in the Table 3000-2 as per technical clause 305 of MORT&H specifications **[Through Rate]**	487.50	Sqm	6.27	3054.19
5	HSR 6.1	A CEMENT CONCRETE (CAST IN SITU) Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work below plinth level and up to Floor IV level: 1. 1:1½:3 (1 Cement: 1½ coarse sand (zone-III) : 3 graded stone aggregate 20 mm nominal size) **[Through Rate]**	260.00	cum	3557.63	924982.50
6	HSR 6.1	A CEMENT CONCRETE (CAST IN SITU) Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work below plinth level and up to Floor IV level: 6. 1:4:8 (1 Cement : 4 coarse sand (zone-III) : 8 graded stone aggregate 40 mm nominal size) **[Through Rate]**	34.32	cum	2185.59	75009.45
7	HSR 6.30	I CENTRING AND SHUTTERING (FORM WORK) Centering and shuttering including strutting, propping etc. and removal of form for 1. Foundations, footings, bases of columns, etc. for mass concrete **[Through Rate]**	1040.00	Sqm	139.62	145204.80
8	HSR 6.33	J STEEL REINFORCEMENT Steel reinforcement for R.C.C. work, where not included in the complete rate of RCC, including straightening, cutting, bending, placing in position, binding, wastage, overlaps, welded joints, spacer bars, chairs, stays, hangers and annealed steel wire etc. complete in all respect below plinth level Note: Reinforcement shall be measured in length including hooks, if any, separately for different diameters as actually used in work , excluding overlaps. Wastage, overlaps, couplings, welded joints, spacer bars, chairs, stays, hangers and annealed steel wire or other methods of binding & placing shall not be measured and cost of these items shall be deemed to be included in the rates for reinforcement. 6. Thermo-Mechanically Treated bars of grade Fe-500D or more **[Through Rate]**	46800.00	Kg.	59.07	2764476.00

Conditions :-	
1	All the cutting and corrections be got attested from the Engineer-in-Charge.
2	The expenditure against the work shall not exceed administratively approved estimate and funds sanctioned for the work. In case, revised approval of estimate is required, the same will be obtained well in time.
3	No change in specifications and scope of work shall be made without prior approval of competent authority
4	The construction, structural design & drawings shall be approved by the competent authority before taking the work in hand.
5	The specifications/makes of all the items to be supplied and fixed will be as per specifications/ makes mentioned in the NIT.
6	The 3rd party inspection will be adopted by Engineer-in-Charge. The 3rd party would inspect the work during its execution to ensure the execution of work as per specification/agreement. The inspection and sample testing charges will be borne by the Department.
7	The specifications/makes of any item, for which, specifications/makes has not been mentioned in the NIT, then the same will be finalized by the Engineer-in-Charge.
8	Labour cess @ 1% shall be deducted from the bills of the contractor/agency and will be deposited with Secretary, Haryana Building and Other Constructions Workers Welfare Board.
9	All other conditions as per approved NIT.

You are hereby requested to furnish Performance Security, (and additional security for unbalanced bids in terms of ITB Clause 29.3) [if applicable] in the form detailed in Clause 34.1 of ITB for an amount equivalent to Rs. **4,50,771/-** and additinal security amount Rs. **10,073/-** within 15 days of the receipt of this letter of acceptance valid up to 45 days from the date of expiry of Defect Liability-cum-Maintenance Period i.e. up to **365 Days** from the completion of work and sign the contract, failing which action as stated in Clause 34.3 of ITB will be taken.

SUNDER SINGH
Executive Engineer
Municipal Corporation Gurugram
Municipal Corporation/Urban Local Bodies

Endst. No. : Even **Dated : Even**

Copy of above is forwarded to the following for information and necessary action.

1. Sr. Divisional Accounts Officer, **Municipal Corporation/Urban Local Bodies,Haryana,**, Division **Municipal Corporation Gurugram**
2. Deputy Supdt. Officer, **Municipal Corporation/Urban Local Bodies,Haryana** , Division **Municipal Corporation Gurugram**

Signature Not Verified
Digitally signed by SUNDER SINGH
Date: 2025.10.17 17:48:55 IST
Location: Haryana-HR

Item No. 2 Court No. 2

BEFORE THE NATIONAL GREEN TRIBUNAL
PRINCIPAL BENCH, NEW DELHI

Original Application No. 404/2022

Sanyogita Singh Applicant

Versus

Government Uttar Pradesh State
Pollution Control Board (UPPCB) Respondent

Date of hearing: 28.05.2024

CORAM: HON'BLE MR. JUSTICE SUDHIR AGARWAL, JUDICIAL MEMBER
HON'BLE DR. AFROZ AHMAD, EXPERT MEMBER

Applicant: None for the Applicant.

Respondents: Mr. Ravindra Kumar, Senior Advocate with Mr. Shivam Saxena, Advocate for Respondents No. 3
Mr. Pradeep Misra, Advocate for UPPCB (through VC)

ORDER

1. This Original Application has been registered in exercise of *suo-moto* jurisdiction under Sections 14 and 15 of National Green Tribunal Act, 2010 (hereinafter referred to as **'NGT Act, 2010'**) sent by applicant Sanyogita Singh who claims to be resident of Sector Delta-III, Block-N, Greater Noida.

2. The complaint is that Greater New Okhla Industrial Development Authority (hereinafter referred to as **'G NOIDA'**) i.e., respondent 3 had started temporary construction in the green belt area of Block-N, Sector Delta III in the month of January to set up Construction and Demolition Waste Plan (hereinafter referred to as **'C & D Waste Plan'**) though

aforesaid land is part of green belt and no construction is permissible whether temporary or permanent and nature of greenbelt cannot be disturbed, damaged or changed.

3. Complaint was taken cognizance on 30.05.2022, when this Tribunal found it appropriate to issue notices to the respondents calling them to file their replies.

4. Pursuant thereto, reply dated 10.03.2023 was filed by respondent 3 i.e. G NOIDA stating that total area of Sector Delta is more than 4.79 Lakh sq mt which also included an area devoted to green belt measuring more than 55,000 sq mt. The plot in question has a small area of 600 sq mt located in one corner of green belt, facing 80 mtr wide road, and far from residential area. This enclosure is intended to be collection center where from C&D waste shall be collected and transferred/transported to processing plant which is located in Sector Echo Tech-3.

5. However, it is also stated in its reply that as a matter of fact till the date of filing reply, the land in question was not actually used for collection of C&D Waste and only requisite structures/enclosures were raised to convert the said land as a temporary collection center for C&D Waste.

6. Additional reply dated 23.05.2023 and further additional reply dated 24.05.2024 have been filed wherein steps taken in first reply has been reiterated. However, in reply dated 24.05.2024, details of total C&D Waste generated and service provider authorized for collection, transportation and processing have been given. Second Additional reply in Para-3 to Para 13 read as under:

> *"3. The C & D Waste Processing Facility has been set up by the answering Respondent at Plot No.F-1 (area 4.5 acres), Sector Eco Tech III, Greater Noida City. Tenders for collection, transportation,*

processing and management of C & D waste in Greater Noida were invited on Build, Operate and Transfer basis. After due process, the tender was awarded to M/s.Rise Eleven Concrete Products Pvt. Ltd. and a contract was signed on 7.7.2021. It is pertinent to mention that the said Company is also running the C & D waste processing facility for the South Delhi Municipal Corporation for the last over 4 years and similar facilities at Agra and facility at Lucknow, which is under construction. The said facility has been set up in an Industrial Sector at a plot demarcated for facilities under the approved Master Plan. This facility was inaugurated by the Hon'ble Chief Minister of Uttar Pradesh on 25.6.2023.

4. The installed capacity of the Plant is 80 MT per hour for segregated waste but if the waste is not segregated, then the installed capacity would stand reduced to 35-40 MT per hour. This capacity can be increased to 45-55 MT per hour As per the records maintained by the said Company, the daily collection of C & D waste on an average is about 150 MT.

5. For the purpose of collection of C & D waste, a roster has been prepared for each Sector. On an average, the daily collection is the same as daily generation viz. 150 MT. The C & D waste is transported by means of Trolleys driven by Tractors, Dumper Trucks and Trawlers for which, the Company maintains Log Books. These vehicles are fitted with GPS, which are linked to GNIDA Web site. The Authority has also set up a 24 x 7 Help Line regarding complaints for collection and transportation of C & D waste. The transportation vehicles are fully covered so as to ensure that C & D waste does not spill over while transportation or cause avoidable air pollution. The vehicles are regularly cleaned and this is one of the conditions imposed on the Contractor running the Processing Facility any C & D waste which is found lying near the Roads or open spaces in the city of Greater Noida.

6. As of now, no charges are levied for collection of the C & D waste and its transportation to the Processing Facility and the entire cost is borne by the Respondent Authority. At the Facility, the waste is re-cycled. With a view to control the dust at the site, anti-smog gun and water sprinklers are used. The Facility has a dry and wet unit. Charges are levied on bulk generators of C & D waste like Builders and these charges are utilized for payment to the Operator. However, these charges are only a small fraction of the cost which the Authority incurs in the establishment and running of the Processing Facility which cost is paid to the M/s.Rise Eleven Concrete Products Pvt. Ltd.

7. Besides the C & D Waste, which is generated and transported on I daily basis, which quantity, as per the record maintained by the Contractor is to the tune of about 150 MT per day, the legacy waste, which was collected and lying at the Processing Facility is also being processed. At present the legacy waste is to the tune of about 71,000 MT. All things being normal, it is expected to clear the processing of the legacy waste in about year's time.

8. The following C & D Waste Collection Centers are in operation:

S.no	*Sector detail connected C&D Water center*	*C & Waste Warter Collection*	*Area of C&D Collection center*	*Present status of working*
1	*Sector 10 and 12*	*Sector 10 and 12*	*600 sq m.*	*Working*
2	*Sector 1*	*Sector 1*	*600 sq m.*	*Working*
3	*Sector 2*	*Sector 2*	*600 sq m.*	*Working*
4	*Beta-1, 2, Gama1&2*	*Beta-1*	*600 sq m.*	*Working*
5	*KP 1,2,3, Builder Area & Omega 1 &3*	*KP 3, /Kaladham*	*600 sq m.*	*Working*
6	*Surrounding area of Ecotech 12*	*Ecotech 12*	*600 sq m.*	*Working*

9. In the past, when the Facility was yet to be set-up, the C & D waste was collected and brought to the processing site in question but it remained stored at the said plot which has an area of 4.5 acres. The plot is surrounded by a boundary wall which is made of bricks and tender to increase the height of the wall is under process.

10. By an Office Order No.73286/Fin/2015-16 dated 30.12.2015 issued in terms of approval granted by the Board, in its 103rd Meeting, malba charges are to be paid by the plot owner at the rate of Rs.20/- per sq.m. of total covered area up to the plot size of 2,000 sq. m. For plot sizes between 2,001-10,000 sq.m, the malba charges are at the rate of Rs.15/- per sq. m of total covered area, while of above 10,000 sq.m., this charges at the rate of Rs.10/- per sq.m of total covered area. It is clarified that at present, GNIDA does not charge any user fee from individual waste generators. The same is levied from bulk generator like builders.

11. The details of the amount o Rs.1,45,800 collected from generators of C & D waste is as under:

Sr no	*Challan no*	*Date*	*Imposed penalty*
1	*294*	*03.02.2023*	*2,000*
2	*2651*	*21.02.2023*	*80,800*

3	*2354*	*28.02.2023*	*1000*
4	*2355*	*28.02.2023*	*1000*
5	*2356*	*28.02.2023*	*1000*
6	*2357*	*28.02.2023*	*1000*
7	*2358*	*28.02.2023*	*2000*
8	*2401*	*14.03.2023*	*1000*
9	*2402*	*14.03.2023*	*2000*
10	*2403*	*15.03.2023*	*2000*
11	*295*	*15.03.2023*	*1000*
12	*2503*	*16.03.2023*	*2000*
13	*2505*	*18.03.2023*	*2000*
14	*2504*	*18.03.2023*	*2000*
15	*2506*	*20.03.2023*	*40000*
16	*296*	*25.03.2023*	*1000*
17	*297*	*25.03.2023*	*1000*
18	*298*	*25.03.2023*	*1000*
19	*299*	*25.03.2023*	*1000*
20	*2602*	*29.03.2023*	*1000*
			1,45,800.00

12. The details of the amount spent by GNIDA are set out as under:

S no	*period*	*amount paid*
1	*09.12.2021 to 30.11.2022*	*88,93,845.00*
2	*01.12.2022 to 28.02.2023*	*38,48,350.81*
3	*01.03.2023 to 30.04.2023*	*23,63,945.87*
	total	*1,51,06,141.68*

13. As regards the existence of any proposal by the answering Respondent to levy user fee, it is submitted that a proposal for collection of User Fee from such waste generators engaged in new construction, renovation or demolition has been drafted. However, this proposal it yet to be approved by the competent authority.

7. Record shows that question involved in this case is whether an area specified as green belt, may be larger or smaller, can be utilised for

any purpose other than as green belt. The answer is 'No'. Purpose of green belt is to protect environment by helping and settling the dust, absorbing soil and providing water preservation and restoration. The importance of maintaining of green belt in its original situation has been stressed upon in various authorities of Supreme Court and has been held that once an area is specified as green belt even in the earlier Master Plan, its nature cannot be changed for whatever reason by any authority even by change of Master Plan.

8. In ***Lal Bahadur vs. State of UP & Others, (2018) 15 SCC 407***, change of master plan and converting green area into residential one was considered. The issue was, whether such conversion is conducive to protection of environment or not. In the master plan of 1995 of Lucknow, area in dispute was reserved as green belt. In master plan 2021, the same area, shown earlier as green belt, was converted as residential. This part of master plan 2021 was challenged before Lucknow bench of Allahabad High Court. Writ petition was dismissed. The matter came in appeal before Supreme Court. Court held in para 12 of judgment that change of area from green belt to residential is in violation of Article 21, 48A and 51A(g) of the Constitution. Reliance was placed on ***Bangalore Medical Trust v B.S. Muddappa & Others, (1991) 4 SCC 54***, wherein Court had said that protection of environment, open spaces for recreation and fresh air, playground for children, promenade for the residents and other conveniences or amenities are matters of great public concern and a vital interest to be taken care of in a development scheme. Public interest in the reservation and preservation of open spaces for parks and playgrounds cannot be sacrificed by leasing or selling such sites to private persons for conversion to some other use. Court also relied on an American Supreme Court Judgment ***Agins vs. City of Tiburon, [447 us***

255 (1980)], wherein Court said,

> *"... it is in the public interest to avoid unnecessary conversion of open space land to strictly urban uses, thereby protecting against the resultant adverse impacts, such as ..... pollution, ...destruction of scenic beauty, disturbance of the ecology and the environment, hazards related geology, fire* and flood, and other demonstrated consequences of urban sprawl."

9. In para 15, Court said that, "*This Court had clearly laid down that such spaces could not be changed from green belt to residential or commercial one. It is not permissible to State Government to change the parks and playgrounds contrary to legislative intent having constitutional mandate, as that would be an abuse of statutory powers vested in the authorities''*. Court also observed, when master plan was prepared earlier and authorities found importance of such space, it was their bounden duty not to change its very purpose when they knew very well the importance of this place to be kept as open space. Court said,

> *"The importance of park is of universal recognition. It was against public interest, protection of the environment and such spaces reduce the ill effects of urbanisation, it was not permissible to change this area into urban area as the garden/ Greenbelt is essential for fresh air, thereby protecting against the 3 resultant impacts of urbanization, such as pollution etc. The provision of the Act of 1973 and other enactments relating to environment could not be permitted to become statutory mockery by changing the purpose in the master plan from green belts to residential one. Authorities are enjoined with duty maintain them as such as per doctrine of public trust.*

10. Learned counsel at this stage stated that as a matter of fact disputed land has not been actually utilized for temporary collection of C&D Waste but could not dispute that an enclosure/boundary wall has been raised to convert the said area as a "temporary collection centre" for C&D Waste even though construction was not permissible in a green belt.

11. Handling Management and Processing of C&D Rules is governed by Construction and Demolition Waste Management Rules 2016(hereinafter referred to as **'C&DWM Rules, 2016**) and therein duties of local

authorities as also criteria for storage, processing and recycling facilities for construction and demolition waste and application of construction and demolition waste and its products are specifically provided.

12. It is not in dispute that site selection has not been permitted or authorized by issuing authorization under rule 7 by competent authority to respondent 3. Therefore, construction, whatever, raised on the land in question is clearly illegal and has resulted in damaging the green belt which ultimately causes damage to environment.

13. Learned counsel for respondent 3 stated that under Master Plan of respondent 3 user of green belt as a collection of Construction and Demolition Waste is permissible, but we find that submission is bereft of any merit since under the environmental laws a green belt cannot be changed for any purposes and no construction is permissible therein. Further, it has been held by Supreme Court in ***Pragnesh Shah Vs. Dr Arun Kumar Sharma & Ors, (2022) 11 SCC 493*** that this Tribunal can direct local body to make Zonal Management Plan in conformity with the precautionary principles so as to ensure development of the area in question. If an area of green belt is disturbed or damaged, State and its authorities are bound to take steps to prevent degradation of environment.

14. We accordingly partly allow Original Application and direct respondent 3 to remove construction, if any, on the land in question within one month and for already causing damage to environment, on application of 'polluter pays' principle, pay environmental compensation of Rs. 5,00,000/- which shall be deposited with UP Pollution Control Board within two months from today.

15. We also make it clear that respondent 3 shall continue to maintain

entire green belt, specified for the purpose, in future, for protection of environment and no activity which may result in damaging the green belt shall be carried out in the area specified as 'green belt' even if permitted in the master plan.

16. The application is disposed of.

Sudhir Agarwal, JM

Dr. Afroz Ahmad, EM

May 25, 2024
OA No. 404/2022
PU

REPORTABLE

IN THE SUPREME COURT OF INDIA

CIVIL APPELLATE JURISDICTION

CIVIL APPEAL NO. 5016 OF 2016

MANTRI TECHZONE PVT. LTD. ... APPELLANTS

VERSUS

FORWARD FOUNDATION AND ORS. ... RESPONDENTS

WITH

CIVIL APPEAL NOS.8002-8003 OF 2016

CIVIL APPEAL NO.12326 OF 2016

CIVIL APPEAL NO.9227 OF 2016

CIVIL APPEAL NO.1343 OF 2017

CIVIL APPEAL NO.10995 OF 2016

CIVIL APPEAL NO.10993 OF 2016

CIVIL APPEAL NO.10994 OF 2016

CIVIL APPEAL NO.2246 OF 2018

CIVIL APPEAL NO.10992 OF 2016

CIVIL APPEAL NO.12157 OF 2016

CIVIL APPEAL NO.12152 OF 2016

CIVIL APPEAL NO.12156 OF 2016

CIVIL APPEAL NO.12158 OF 2016

CIVIL APPEAL NO.12160 OF 2016

CIVIL APPEAL NO.12159 OF 2016

CIVIL APPEAL NOS.4923-4924 OF 2017

CIVIL APPEAL NO.14966 OF 2017

Signature invalid
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Date: [illegible] 17:5[illegible] IST
Reason:

J U D G M E N T

S.ABDUL NAZEER, J.

1. These appeals have been preferred under Section 22 of the National Green Tribunal Act, 2010 (for brevity 'NGT Act') challenging the judgment and order dated 07.05.2015 and 04.05.2016 respectively passed by the Principal Bench of the National Green Tribunal, New Delhi (for short 'the Tribunal').

2. The appellants in Civil Appeal Nos. 5016 of 2016 and 8002-8003 of 2016 are respondent Nos. 9 and 10 in the Original Application No. 222 of 2014 (hereinafter referred to as 'the respondent Nos. 9 and 10'). The said Application was filed by respondent Nos.1 to 3 herein (hereinafter referred to as 'the applicants'). Respondent Nos. 4 to 7 in these appeals are the State of Karnataka and other authorities. They were arrayed as respondent Nos. 1 to 4 in the application. Respondent Nos. 12 and 13 herein were subsequently impleaded in the application (for short 'the impleaded respondents').

3. The State of Karnataka has filed Civil Appeal Nos. 4923-4924 of 2017, challenging the general condition and direction No.(1) contained in the order of the Tribunal dated 04.05.2016. The other appeals have been filed by different entities, who were not parties

before the Tribunal challenging the order of the Tribunal dated 04.05.2016 insofar as it directs a buffer/green zone of 75 meters in respect of lakes, 50 meters in respect of primary Rajakaluves, 35 meters in case of secondary Rajakaluves and 25 meters in case of tertiary Rajakaluves with retrospective effect. According to them, they are adversely affected by the aforesaid condition in the impugned order.

4. The applicants filed O.A. No.222 of 2014 by contending that ecologically sensitive land was allotted by the Karnataka Industrial Area Development Board (for short 'the KIADB') to respondent Nos. 9 and 10 vide Notifications dated 23.04.2004 and 07.05.2004 respectively for setting up of Software Technology Park, Commercial and Residential complex, hotel and Multi Level Car Parks. The Master Plan formulated by the Bangalore Development Authority (for short the 'BDA'), identifies the allotted land as 'Residential Sensitive', though the same land was identified in the Draft Master Plan as 'Protected Zone'. It was further contended that the Revenue Map in respect of properties as referred in the Land Lease Agreements has multiple Rajakaluves (Storm Water Drains). The development projects in question sit right on the catchment and wetland area which feeds the Rajakaluves, which in turn drains rain water into Bellandur Lake. The project will thus encroach two Rajakaluves of 1.38 acres and 1.23 acres each.

5. The Satellite Digital Images of the area from the year 2000 to 2012 show encroachment upon these Rajakaluves, as well as the manner in which they are covered by the construction. The State Level Expert Appraisal Committee (for short 'SEAC'), which was to assist the State Level Environment Impact Assessment Authority (for short 'SEIAA'), held its meetings on various dates to examine the project. It had required the appellant No.9 to submit a revised NOC from the Bangalore Water Supply and Sewerage Board (for short 'BWSSB') for the project in question. It was also observed that the project lies between the Bellandur Lake and the Agara Lake. Respondent No.9 was also directed to take protective measures to spare the buffer zone around Rajakaluves and also to commit that no construction would be carried out in the buffer zone. In the meeting of 11.11.2011, it was recorded that the project proposes car parking facility for 14,438 cars in that environmentally sensitive area.

6. It was alleged that NOC was issued covering an area of 17,404 sq. mtrs. whereas the built up area, as noted by SEAC, is 13,50,454.98 sq. mtrs. Respondent No.9 obtained NOC from BWSSB by concealing material facts and by misrepresenting that NOC is required only for residential units which form a very minuscule part of the total project. Respondent No.9 had approached the Karnataka State Pollution Control Board (for short 'the KSPCB') for obtaining

clearance, which was granted on 04.09.2012 subject to the fulfillment of the conditions stated in the consent order which included leaving the buffer zone all along the valley and towards the lake. It is further contended that the grant of consent by the KSPCB to respondent No.9 also contained a condition with regard to obtaining Environmental Clearance from the Competent Authority and no construction was to commence until such clearance was granted.

7. Applicants further contended that respondent No.9 violated the conditions and commenced construction of the project. There was also violation of the stipulations stated in the approval of SEAC in relation to buffer zone and construction over Rajakaluves. The construction had been commenced over the ecologically sensitive area of the lake catchment area and valley, with utter disregard to the statutory compliances. Referring to these blatant irregularities, the applicant submitted that the conversion of land from 'Protected Zone' to 'Residential Sensitive Area' is violative of the law. The project is right in the midst of a fragile wetland area which ought not to have been disturbed by the development activity. The fragile environment of the catchment area has been exposed to grave and irreparable damage. It has severely disturbed and damaged the Rajakaluves. Respondent Nos. 9 and 10 started to level the land by filling it with debris, thus causing damage to the drains. The conditions with

regard to no-disturbance to the Storm Water Drains, natural valleys and buffer area in and around the Rajakaluves have been violated. It has in turn, affected the ground water table and bore wells which are the only source of water for thousands of households. Fishing and agriculture which depends on Bellandur Lake are also severely affected. The construction over the wetland between the two lakes is in violation of Wetlands (Conservation of Management) Rules, 2010 (for short 'Rules of 2010').

8. It was submitted that SEIAA in its meeting dated 29.09.2012, decided to close the file pertaining to respondent No. 10 due to non-submission of requisite information and the application thereof was rejected in November, 2012. Despite the rejection, respondent No.10 commenced construction on the project in full swing.

9. The applicants also relied upon the findings of the Joint Legislative Committee, constituted under the Chairmanship of Shri A.T. Ramaswamy in the month of July 2005, which stated that there were 262 water bodies in the Bangalore city in 1961 which drastically came down because of trespass and encroachments. It was also affirmed that about 840 kms. of Rajakaluves have been encroached upon in several places and have become sewage channels. The applicants also relied on the Report of the Committee under the Chairmanship of Hon'ble Mr. Justice N.K. Patil suggesting immediate

remedial action in order to remove encroachments on the lake area and the Rajakaluves and preservation of the lakes in and around Bangalore city. It was further contended that other Expert Committees, including Lakshman Rau Expert Committee had also submitted proposals for preservation, restoration or otherwise of the existing tanks in Bangalore Metropolitan Area which recommended to maintain good water surface in Bellandur tank and to ensure that the water in the tank is not polluted. The Central Government in August 2013 had issued an advisory on conservation and restoration of water bodies in the urban areas. The applicants claim to have obtained monitoring report of the project by respondent No.5, Ministry of Environment and Forests, through RTI on 21.08.2013. The report dated 14.08.2013 revealed that the project proponents are in clear breach of their undertaking to carry out all precautionary measures to ensure that the Bellandur lake is not affected by the construction and operational phase of the project. This approach is particularly with regard to the major alteration in natural sloping pattern of the project site and natural hydrology of the area.

10. The Lake Development Authority (for short 'the LDA'), after inspection in the catchment area of the Bellandur Lake submitted its report dated 12.06.2013 which confirms that the project will have disastrous impact, including deleterious effect on the Bellandur Lake.

This report was brought to the notice of KIADB. The LDA has also opined that the land should be classified and maintained as sensitive area. The KIADB called upon respondent No. 9 to comply with the rules of Ecology and Environment Department and to obtain necessary approval from KSPCB and LDA. Despite all this, respondent Nos. 9 and 10 have continued with their illegal constructions and have caused damage to the ecology and the environment by irreparably jeopardizing the ecological balance in this sensitive area. The applicants rely upon the Revised Master Plan, 2013 issued by BDA which specifically provides that 30 meters buffer zone is to be created around the lakes and 50 meters buffer zone to be created on either side of the Rajakaluves. It was also pleaded that respondent No. 9 had obtained the NOC from BWSSB only with regard to residential units and not for the entire project and that the Environmental Clearance obtained by respondent No.9 is based upon the partial NOC issued by BWSSB which itself is a misrepresentation. It was contended that the projects are bound to create water scarcity as the requirement of the project of respondent No. 9 alone is approximately 4.5 million liters per day, i.e. 135 million liters per month, which is more than what the BWSSB supplies to the entire Agaram Ward. The construction of respective projects by respondent Nos.9 and 10 respectively, besides having commenced without

permission from the authorities and being in violation of the conditions imposed for grant of permission/consent, is bound to damage the environment, resulting in change in the topography of the area, posing potential threat of extinction of the Bellandur lake, causing traffic congestion, shortening and wiping out the wetlands, extinction of Rajakaluves and causing serious and potential threat of flooding and massive scarcity of water in the city of Bangalore, particularly the areas located near the water bodies.

11. Respondent No.9 in its objections contended that it was incorporated with the objective of establishing an Information Technology Park and R & D Centre with facilities such as residential complexes, parks, education centres and other allied infrastructure within a single compound. It had submitted the proposal to establish such Information Technology Park and other facilities to the State Government and requested for allotment of land for the project. Its proposal was considered in 78th High Level Committee meeting held on 21.06.2000 and after examining the proposal, it was approved by the Government on 06.07.2000. Before the State High Level Committee, it had informed that its requirement was 110 acres of land, 25 MW of power from the Karnataka Power Transmission Corporation Limited (for short the 'KPTCL'), and four lakh litres of water per day from BWSSB. The lands for the project were initially notified vide

Notification dated 10.02.2004. Subsequently, the lands were allotted vide letter dated 28.06.2007 for which Lease-cum-Sale Agreement was signed on 30.06.2007. Considering the overall development of the State of Bangalore, this respondent proposed a Mixed Use Development Project consisting of an Information Technology Park, residential apartments, retail, hotel and office buildings with a total built up area of 13,50,454.98 sq mtrs. The Project was conceived as a zero waste discharge project. The project is located one and a half kms. away from the southern-side of the Bellandur Lake. Towards the North, adjacent to the Project, lies vast stretches of lands belonging to the Defence and towards the East, lies the Project of respondent No. 10 and another developer is also developing a project on the western side. It has obtained sanction plan on 04.07.2007 which was renewed from time to time.

12. Respondent No. 9 claims that it has obtained NOC from Airport Authority of India on 09.04.2010. Bharat Sanchar Nigam Ltd, vide its communication dated 16.04.2010, granted clearance for the project construction. BWSSB, vide its communication dated 26.04.2011 issued NOC for portion of the proposed construction to be built. The Bangalore Electricity Supply Company Ltd. also granted NOC for arranging power supply to the proposed residential and commercial building in its favour. Environmental Clearance was granted by

SEIAA vide communication dated 17.04.2012. The Director General of Police has issued NOC and KSPCB vide order dated 04.09.2012 accorded its consent for construction of the said project subject to the conditions stated therein. It was further stated that after grant of the Environmental Clearance on 17.09.2012, the same was published in the leading newspapers “Kannada Prabha” and "The Indian Express” on 12.03.2012 and 14.03.2014 respectively.

13. It submitted a modified the building plan which was approved by KIADB vide its letter dated 30.08.2012, which was valid up to 10.08.2014. It started the construction of the project in November 2012, taking all precautions as per terms and conditions of the orders issued by the competent authorities. It was also submitted that it has raised the constructions in accordance with the plans and conditions of the Environmental Clearance and consent orders and that it has not violated any of the conditions and has not caused any adverse impact on the ecology and environment of the area. It has denied the contention that its construction activity has blocked the Rajakaluves and has adversely affected the lake. It has already spent a sum of Rs 306.73 crores on the project towards procurement of men and materials, machinery, infrastructure, medical and sanitary facilities, etc. and that it has availed financial assistance from various banks and financial institutions towards the construction and execution of

the project and that various contracts have been signed with the third parties. It is specifically pleaded that the petition is barred by time and suffers from defects and laches.

14. Respondent No.10 pleaded that the applicants raised multifarious proceedings against it which is an abuse of the process of law and *mala fide*. It had submitted a revised proposal in respect of its project in question and to obtain fresh clearance on 31.08.2007 with an investment of Rs. 179.22 crores. The State High Level Committee had cleared the project which was communicated to it on 25.01.2008. Its properties are located in between Bellandur Lake and Agara Lake but there are no primary storm water drains and secondary storm water drains that exist in its properties. It has clearances from various authorities, including Environmental Clearance and consent for establishment.

15. KIADB stated that after possession of the land was handed over to respondent Nos. 9 and 10, one year time was granted for the implementation of the project which was extended from time to time. The building drawings were approved on 04.07.2007, and the modified building drawings were approved on 26.04.2011 and 30.08.2012 with specific conditions. In its meeting held on 16.07.2013, it was resolved to inform respondent No. 9 to fully comply with the Ecology and Environment Rules and to obtain approvals from the LDA and KSPCB.

LDA vide its letter dated 24.09.2013, had informed KIADB that the construction activity in the catchment area in the Bellandur Lake could drastically impact the Lake with deleterious effects and asked it to stop construction activity of respondent Nos. 9 and 10. However, the validity of the building drawings was again extended up to 10.08.2014. The Lokayukta on 17.12.2013 had written a letter in respect of complaint filed by the South East Forum for Sustainable Development where it had been averred that the decision had been taken by the Board on 21.12.2013 to keep in abeyance the approval accorded and even the re-validations of plans. This was also informed to respondent No.9. The Board took a decision which was communicated to respondent No.9 on 02.01.2014, wherein it asked the respondent No.9 to stop all construction activities on the allotted lands. The said communication was challenged by respondent No. 9 and on the stop-work notice, stay was granted by the High Court of Karnataka. The stop-work notice dated 23.12.2013 issued by Bruhat Bengaluru Mahanagara Palike (for short 'BBMP') was also stayed vide order dated 21.01.2014. The proposal submitted by respondent Nos. 9 and 10 had been approved by the State Government. The land allotted to respondent Nos. 9 and 10 does not consist of any Rajakaluves.

16. The LDA took a stand that it was not at all aware of the project initiated by KIADB. It came to know about the entire project only when certain newspaper reports surfaced during the month of June, 2013 and till that time it was in the dark. After the complaints, it inspected the Bellandur Lake and the Agara Lake on 12.06.2013 and prepared an inspection report. In the report, it was noticed that large scale construction activities were going on in the catchment area of Bellandur Lake and that there was a change in the land use, which in turn has directly affected the catchment of Bellandur Lake. The wetland area of Agara Lake had also shrunk, which originally formed the irrigation area for the adjoining agricultural lands. Therefore, it had questioned the decision of KIADB vide letter dated 06.07.2013 and even requested it to stop the construction activity and to re-classify the land as non-SEZ area. It was thereafter on 31.08.2013, that respondent No. 9 wrote a letter for according approval for the proposed development projects. However, vide its letter dated 23.09.2013, LDA informed KIADB that it had no authority to grant or deny construction projects, but it also communicated its objections to KIADB mentioning that construction activity would be in contravention of the directions of the Supreme Court. Despite these warnings, KIADB granted approval to the extension of the building drawings of the project in favour of the project proponents with certain

conditions, like ensuring that all natural valleys, valley zone, irrigation tanks and existing roads leading to villages in the said land should not be disturbed. Further, the natural sloping pattern of the project site was not to be altered and the lakes and other water bodies within and/or at the vicinity of the project area should be protected and conserved. Despite the objections, the plans were approved and approvals were extended from time to time. It has taken a categorical stand that the projects as approved by the KIADB would have adverse impact on Bellandur and Agara Lakes.

17. On the basis of the pleadings of the parties, the Tribunal framed the following questions for consideration and determination:

1. Whether the application filed by the applicants and supported by respondent Nos. 11 and 12, is barred by time and thus, not maintainable?
2. Whether the petition as framed and reliefs claimed therein, disclose a cause of action over which this Tribunal has jurisdiction to entertain and decide the application under the provisions of the NGT Act, 2010?
3. Whether the present application is barred by the principle of *res judicata* and/or constructive *res judicata*?
4. Whether the application filed by the applicants should not be entertained or it is not maintainable before the Tribunal, in view of the pendency of the Writ Petitions 36567-74 of 2013, before the Hon'ble High Court of Karnataka? and
5. What relief, if any, are the applicants entitled to? Should

or not the Tribunal, in the interest of environment and ecology issue any directions and if so, to what effect?

18. The Tribunal by its order dated 07.05.2015 at Annexure A-2, disposed of the applications with the following directions:

1) We decline to pass any direction or order to stop further progress and/or demolition of the project or any part thereof at this stage. However, we constitute the following Committee to inspect the projects in question and submit a report to the Tribunal *inter alia* but specifically on the issues stated hereinafter:

a) Advisor in the Ministry of Environment and Forest dealing with the subject of wetlands.

b) CEO of the Lake Development Authority, Karnataka State.

c) Chief Town Planner of BBMP, Bangalore.

d) Chairman of SEAC which recommended the grant of Environmental Clearance to the projects in question.

e) Sr. Scientist (Ecology) from the Indian Institute of Sciences, Bangalore.

f) Dr. Siddharth Kaul, former Advisor to MoEF.

g) A Senior Officer from the National Institute of Hydrology, Roorkee.

2) Member Secretary of the Karnataka State Pollution Control Board shall act as the Convener of the Committee and would submit the final report to the Tribunal.

3) The Committee shall inspect not only the sites where the projects in question are located but even other areas of Bangalore which the Committee in its wisdom may consider

appropriate, in order to examine the interconnectivity of lakes and impact of such activities upon the water bodies with particular reference to lakes. 4) The Committee shall submit whether the projects in question have encroached upon or are constructed on the wetlands and Rajakaluves. If so, are there any adverse environmental and ecological impact of these projects on the lake, particularly Bellandur Lake and Agara Lake, as well the Rajakaluves. The report should specify, if any Rajakaluves have been covered by the construction activities of respondent Nos. 9 and 10 or by any of the projects in the area in question.

5) Committee should submit in its report, if these projects have any adverse impacts upon the surrounding ecology and environment, with particular reference to lakes and wetlands. If yes, then whether any part of the project is required to be demolished. If so, details thereof along with reasons.

6) The Committee shall substantially notice if any of the conditions of the Environmental Clearance order in each case of respondent Nos. 9 and 10 have been violated. If so, to what extent and suggest remedial measures in that behalf to restore the ecology of the area. 7) The Committee would also recommend what should be the buffer zone around the lake(s) and interconnecting passages and wetlands. The Committee shall also report, whether activities of multipurpose projects which have serious repercussions on traffic, air pollution, environment and allied subjects should be permitted any further or not,

particularly, in wetlands and catchment areas of water bodies.

8) Recommendations should be made with regard to the steps and measures that should be taken for restoration of lakes, particularly in the city of Bangalore. 9) The Committee shall also find out that whether the construction of the projects is in accordance with the sanctioned drawings and bye-laws in accordance with the letters dated 4th July, 2007 and 22nd April, 2008 respectively. Further, the Committee would also report whether both respondent Nos. 9 and 10 have installed ETP/STP and have taken full measures for recycling of used water for washing and flushing, etc. in terms of letters dated 11th October, 2013 and 3rd January, 2013, issued by the Karnataka Industrial Area Development Board to respondent Nos. 9 and 10 respectively.

10) In the event, the Committee is of the opinion that the adverse impacts noticed are redeemable, then what directions need to be issued in that behalf and the cost involved for achieving the said conservation and restoration of lakes and water bodies.

11) Till the submission of the report by the Committee and directions passed by the Tribunal in that regard, both respondent Nos. 9 and 10 are hereby restrained from creating any 3rd party interests or part with the possession of the property in question or any part thereof, in favour of any person.

12) The Committee shall submit its report to MoEF and to this Tribunal as expeditiously as possible and in any case

not later than three months from today. During that period we restrain MoEF, SEIAA and/or any public authority from sanctioning any construction project on the wetlands and catchment areas of the water bodies in the city of Bangalore.

13) The Committee shall report if the project proponents are proposing to discharge their trade or domestic effluents into the lake or any of the water bodies in and around of the area in question.

14) For the reasons stated in the judgment, respondent No. 9 is liable and shall pay a sum of Rs. 117.35 crores, while respondent No. 10 shall pay a sum of Rs. 22.5 crores respectively being 5 per cent of the project value, within two weeks from today. The said amount would be paid to the KSPCB, which shall maintain a separate account for the same and would spend this amount for environmental and ecological restoration, restitution and other measures to be taken to rectify the damage resulting from default and non–compliance to law by the Project Proponent in that area, after taking approval of the Tribunal.

15) We make it clear that the said respondents would not be entitled to pass on the amount in terms of direction 14, on to the purchasers because this liability accrues as a result of their own intentional defaults, disobedience of law in force and carrying on project activities and construction illegally and unauthorizedly.

19. Feeling aggrieved by the said order, respondent Nos. 9 and 10 filed Civil Appeal Nos. 4829 and 4823 of 2015 before this Court. This Court by its Order dated 20th May, 2015 passed the following order:

> "One of the main contentions raised by the Appellants in these Appeals is that though the Tribunal had heard the matter only on preliminary issues and no arguments on merit were advanced, final judgment decides the merits of the disputes as well and above all a penalty of Rs.117.35 crores against the original Respondent No.9 (the Appellant in C.A. No. 4832 of 2015) and Rs. 22.5 crores against Original Respondent No. 10 (the appellant in C.A. No. 4829/2015) is imposed.
>
> On the aforesaid averment, we feel that it would be more appropriate for the appellant to file an application before the Tribunal with the prayer to recall the order on merits and decide the matter afresh after hearing the counsel for the parties, as the Tribunal knows better as to what transpired at the time of hearing.
>
> With the aforesaid liberty granted to the petitioners, the appeals are disposed of. Certain preliminary issues are decided against the appellants which are also the subject matter of challenge. However, it is not necessary to deal with the same this stage. We make it clear that in case the said application is decided against the

appellants or if ultimately on merits, it would be open to the appellants to challenge those orders by filing the appeal and in that appeal all the issues which are decided in the impugned judgment can also be raised.

The counsel for the appellants state that they would file the requisite application within one week. Till the said application is decided by the Tribunal, there shall be stay of the direction pertaining the payment of aforesaid penalty. Mr. Raj Panjwani points out that the Tribunal has allowed the appellants to proceed with the construction only on the payment of the aforesaid fine/penalty. We leave it to the Tribunal to pass whatever orders it deems fit in this behalf, after hearing the parties."

20. In relation to Issue No.5, an opportunity of hearing was granted to the respondents. The Tribunal passed order dated 06.04.2016 on these applications as under:

"**M.A. No. 603 of 2015 and M.A. No. 596 of 2015**

These Applications have been filed on behalf of the Respondent 9 & 10 respectively. It is not necessary for us to refer to any details in view of the directions that we propose to issue in this case.

Without prejudice to the rights and contentions of the parties and subject to just

exception we would hear the parties in terms of the order of the Hon'ble Supreme Court of India primarily on the question of imposition of Environmental Compensation and merits attached in relation thereto. Parties are given liberty to address their submissions on that behalf.

With the above directions the M.A. No. 603 of 2015 and M.A. No. 596 of 2015 stand disposed of without any order as to cost."

21. It is evident from the above orders that the Tribunal had granted opportunity to the parties to address it "limited question", as aforementioned. The Tribunal after hearing the parties passed an order dated 04.05.2016 as under:

"General Conditions or directions:

1. In view of our discussion in the main Judgment, we are of the considered view that the fixation of distance from water bodies (lakes and Rajkalewas) suffers from the inbuilt contradiction, legal infirmity and is without any scientific justification. The RMP – 2015 provides 50m from middle of the Rajkalewas as buffer zone in the case of primary Rajkalewas, 25m in the case of secondary Rajkulewas and 15m in the tertiary Rajkulewas in contradiction to the 30m in the case of lake which is certainly much bigger

water body and its utility as a water body/wetland is well known certainly part of wet land. Thus, we direct that the distance in the case of Respondents Nos. 9 and 10 from Rajkulewas, Waterbodies and wetlands shall be maintained as below:-

(i) In the case of Lakes, 75m from the periphery of water body to be maintained as green belt and buffer zone for all the existing water bodies i.e. lakes/wetlands.

(ii) 50m from the edge of the primary Rajkulewas.

(iii) 35m from the edges in the case of secondary Rajkulewas

(iv) 25m from the edges in the case of tertiary Rajkulewas

This buffer/green zone would be treated as no construction zone for all intent and purposes. This is absolutely essential for the purposes of sustainable development particularly keeping in mind the ecology and environment of the areas in question.

All the offending constructions raised by Respondents Nos. 9 and 10 of any kind including boundary wall shall be demolished which falls within such areas. Wherever necessary dredging operations are required, the same should be carried out to restore the original capacity of the water spread area and/or wetlands. Not only the

existing construction would be removed but also none of these Respondents - Project Proponent would be permitted to raise any construction in this zone.

All authorities particularly Lake development Authority shall carry out this operation in respect of all the water bodies/ lakes of Bangalore.

2. The capacity of the existing STPs to treat sewage is 729 MLD, whereas another 500 MLD sewage is proposed to be treated in 10 upcoming STPs. In this context, all the STPs operating in the area whether Government or privately owned, should meet the revised standards notified by CPCB/MoEF.

3. Bangalore city receives treated potable water of 1360 MLD from river Cauvery whereas the requirement is for another 750 MLD and the entire area falls in critical zone in terms of ground water exploitation. Information reveals that only one million litre per month of STP treated water is used by builders for construction purposes. For this reason, the BWSSB issues partial NOC to various residential and commercial projects in respect of supply of potable water. In this context, following directions need to be issued:

i. At the time of grant of EC, the water requirement for the construction phase

and operation phase should be considered separately. Due consideration should also be given for identification of source of supply of water and this should be a pre-requisite for grant of EC.

ii. All the project proponents should necessarily use only treated sewage water for construction purpose and this should be reflected in EC as a condition for construction phase.

iii. Wherever the quality of treated sewage water does not conform to the quality needed for construction, necessary upgradation in STP should be undertaken immediately.

Specific Conditions/ Directions for Respondent 9;

In addition to the above directions which should be equally part of EC condition in respect of respondents nos. 9 & 10, following specific conditions shall apply to respondent no. 9:

i. Reclaimed area of the lake to the extent of 3 acres 10 guntas in survey No. 43 should be restored to its original condition at the cost of project proponent. The possession of this area should be restored by Respondent No. 9 to the concerned Authorities

immediately. In addition, a buffer zone of 75 m should be provided between the lake and the project area and this should be maintained as green area.

ii. In the remaining area, where primary Rajkalewa is abutting the project area, 50 m buffer zone on the side of the project area from the edge of the rajkalewa should be maintained as green belt.

iii. Several irrigation canals or tertiary rajkalewas taking off from the Agara tank were passing through the area of respondent No. 9, and serve the dual purpose of irrigating paddy fields and disposal of surface run off (storm water drains) during rainy season. However on account of the activities of the project, these drains have been totally obliterated. For the purpose of proper disposal of storm runoff from the entire area falling between the Agara lake and the Belandur Lake, respondent No. 9 must provide required number of storm water drains based on proper hydrological study. These storm drains should have a buffer zone of 15 m on either bank maintained as green belt.

iv. The cumulative quantity of earth excavated for the construction of project is around 4 lakhs cubic meters in the depth range of 0 to 9 meters. This has created huge hillock like structure obstructing the natural flow pattern of surface runoff from Agara Lake side to Balendur Lake side or primary Rajkalewas. For this purpose, during construction phase garland drain should be constructed around the existing dumping site for safe disposal of runoff to the Rajkalewas. For the disposal of excavated material, a proper muck disposal plan duly approved by SIEAA shall be prepared. In any case the plan should ensure that no muck/sediment flows into Rajkalewas and/or Belandur lake.

v. The Kharab land identified by Revenue Dept. admeasuring 1 acre 2 guntas should be demarcated and maintained separately as green belt.

vi. The entire green belt created under the directions of this Tribunal should not to be considered as part of green belt of the project as part of EC condition and will be over and above the green belt as indicated in the EC.

vii. In view of the heavy traffic load in the adjoining Sarjapur road, a proper study on the basis of traffic density,foot falls expected, etc., a proper plan needs to be prepared and the concept of service road exclusively for the project needs to be worked out and additional parking space created within the project area and incorporated as a part of the overall project layout, within a period of 3 months.

10. Though, at the time of hearing prior to passing the Judgment, we had heard the parties on all aspects but still we have provided re-hearing to the parties on all issues with emphasis on imposition of environmental compensation including the quantum. Upon hearing, we are of the considered view that environmental compensation imposed upon Respondent No. 9 calls for no variation and the Respondent No. 9 should be called upon to pay the said amount of Rs. 117.35 Crores determined under the Judgment prior to commencement of any project activity at the site. Respondent No. 10 has not commenced any actual construction activity but has carried out various preparatory steps including excavation and deposition of huge

earth by creating a hillock at the premises in question and a site office.

Thus, considering cumulative effect on environment and ecology due to various breaches in that behalf by Respondent No. 10 and the fact that the remedial measures can more effectively be taken by the Respondent No.10, we reduce environmental compensation payable by Respondent No. 10 to Rs. 13.5 crores (3% of the stated project cost instead of 5% as imposed in the original judgment). **General Directions**:

1. We direct SEIAA, Karnataka to issue amended order granting Environmental Clearance within four weeks from today incorporating all the conditions stated in this judgement and such other conditions as it may deem appropriate in light of this judgment and Inspection Note of the Expert Members. The Project Proponents would be permitted to commence activity only after issuance of amended Environmental Clearance order.

2. SEIAA Karnataka and MoEF shall ensure regular supervision and monitoring of the project and during the construction and even upon completion to ensure that activity is carried out strictly in accordance with the conditions of the order granting Environmental Clearance, this Judgment, Notification of 2006 and other laws in force.

3. The distances in respect of buffer zone specified in this judgment shall be made applicable to all the projects and all the Authorities concerned are directed to incorporate such conditions in the projects to whom Environmental Clearance and other permissions are now granted not only around Belandur Lake, Rajkulewas, Agara Lake, but also all other Lakes/wetlands in the city of Bengluru.

4. We hereby direct the State of Karnataka to submit a proposal to the MoEF for demarcating wetlands in terms of Wetland Rules 2010 as revised from time to time. Such proposal shall be submitted by the State within four weeks from today and the MoEF shall consider the same in accordance with law and grant its approval or otherwise within four weeks thereafter. After such approval is granted by MoEF, the State would issue notification notifying such areas immediately thereafter in accordance with Rules and law.

5. Both the Respondents Nos. 9 and 10 shall ensure that debris or any construction material that has been dumped into the Rajkulewas, or on their Banks and on the buffer zone of wetlands should be removed within four weeks from today. In the event they fail to do so, the same shall be removed by the Lake Development Authority

along with the State Administration and recover charges thereof from the said Respondents.

6. There is a serious discrepancy even in regard to the measurement of land as far as Respondent No. 9 is concerned. Admittedly the Respondent has been allotted and is in possession of land admeasuring 63.94 acres, though Environmental Clearance has been granted for 2,92,636.03 Sq. Meters which is equivalent to 72.22 acres. For this reason alone, Environmental Clearance cannot be given effect to. While issuing the amended Environmental Clearance, SEIAA Karnataka shall take into consideration all these aspects and, if necessary, would require Respondent No. 9 to submit a fresh layout plant and the entire project may be revised in accordance with law.

7. Both the Respondents (Project Proponents) shall submit an appropriate plan in view of the conditions imposed in this judgment and the amended Environmental Clearance that would be issued.

8. The amount of environmental compensation will be deposited prior to issuance of amended Environmental Clearance.

With the above directions, the Original Application No. 222 of 2014 and Misc. Applications Nos. 596/2016 and 603/2016 are

finally disposed of while leaving the parties to bear their own costs."

22. Appearing for the appellants in C.A. No.5016 of 2016, Shri Mukul Rohatgi, learned senior counsel, has submitted that the State Government in exercise of the power conferred under the Karnataka Industrial Areas Development Act (for short 'KIAD Act') declared the land in question as an industrial area. Thereafter, the land in question has been acquired by the State Government in the year 2004. Following the acquisition, on 28.06.2007, the land was allotted to the appellant by the KIADB. The SEIAA granted environmental clearance which was followed by public notice concerning clearance on 14.03.2012. Neither the allotment of land nor the environmental clearance was challenged before the Tribunal. Thus, none of the statutory decisions or processes, are the cause of action for the purpose of the application. The averments made in the original application does not satisfy or meet the requirements of Section 14(1) and (3) of the NGT Act and the original application does not spell out the cause of action relevant for the purpose of said provision. Since the statutory processes and clearances could not have been challenged for being hit by Section 14(3), the construction activities which were the alleged cause of action could not have been

challenged. Therefore, the Tribunal ought to have held that the application was not maintainable.

23. Further the application is barred by limitation. Though environmental clearance was granted on 17.02.2012 and it was published in two leading newspapers on 12.03.2012 and 14.03.2012, modified plan was approved by the KIADB on 30.08.2012, the application ought to have been filed within six months from the date on which cause of action for the dispute first arose in terms of Section 14 of the NGT Act. The present application has been filed in March, 2014 which was much beyond the prescribed period of limitation. No application seeking condonation of delay has been filed accompanying the application. Hence, the Tribunal ought to have dismissed the application on the ground that as it is barred by time.

24. It was also argued that buffer zone laid down by the NGT is substantially higher as compared to buffer zone which is required to be maintained as per the Revised Master Plan, 2015 issued on 22.06.2007. This is contrary to the Karnataka Town and Country Planning Act, 1961 (for short 'the Planning Act').

25. Shri Neeraj Kishan Kaul and Shri R.Venkataramani, learned senior counsel appearing for the appellants, in this case have also made similar submissions. It was argued that the direction imposing penalty/compensation is illegal on the ground that the applicants did

not allege that the construction work of the project has caused environmental wrong. No wrong or injury either to Bellandur lake water body or to Bellandur lake area, has been alleged and established. As such, there is no question of any enquiry relating to imposition of penalty or any compensation.

26. Shri Maninder Singh, learned senior counsel appearing for the appellants, in C.A. Nos.5016 and 10995 of 2016, while supporting the submissions made by Shri Rohatgi, has submitted that the appellant has obtained sanction and approvals for the project from the competent authorities. It could not start construction despite grant of all the permissions, including environmental clearance as early as possible i.e. 30.09.2013. Hence, imposing penalty/compensation is entirely unsustainable.

27. Learned Advocate General, Shri Udaya Holla, appearing for the appellant-State of Karnataka in C.A.Nos.4923-4924 of 2017, has submitted that the State of Karnataka is also aggrieved by the order of the NGT to the extent of setting aside the buffer zone in respect of water bodies and drains specified in the Revised Master Plan, 2015, and enlargement of the buffer zone in respect of lakes and Rajakaluves. It is also aggrieved by the order of the NGT directing the

authorities to demolish all the offending constructions raised/built in the buffer zone, which will result in demolition of 95% of the buildings in Bengaluru. It is submitted that the Revised Master Plan is statutory in nature and NGT has no power, competence or jurisdiction to consider the validity or *vires* of any statutory provision/regulation. Therefore, the order of the NGT to that extent is liable to be set aside.

28. Learned senior counsel appearing for the appellants in other cases, have also supported the arguments of the learned Advocate General. It was contended that the Revised Master Plan provides for a 30 meters buffer zone around the lakes and a buffer zone of 50 meters, 25 meters and 15 meters from the primary, secondary and tertiary drains, respectively to be measured from the centre of the drain. Vide the impugned judgment, the NGT has revised these buffer zones and has directed that the buffer zone be maintained for 75 meters around the lake and 50, 35 and 25 meters respectively from the primary, secondary and tertiary drain, respectively. Variation of buffer zone, as directed by the NGT is without any legal and scientific basis and has the effect of amending the Revised Master Plan, 2015, without there being any challenge to the same or any relief sought with respect to the said Revised Master Plan.

29. On the other hand, Shri Sajan Poovayya, learned senior counsel, appearing for the applicants, has fairly submitted that the applications

were filed only against the appellants in C.A Nos. 5016 of 2016 and 8002-8003 of 2016 (respondent Nos. 9 & 10). He has no objection to set aside the order in so far as the appellants in other appeals including the State of Karnataka are concerned. He has also no objection to set aside the general conditions and directions of the NGT in paragraph (1) of the order dated 04.05.2016 except the directions issued against respondent Nos. 9 and 10. In view of the above, it is not necessary to examine the contentions of the learned Advocate General in Civil Appeal Nos. 4923-4924 of 2017. It is also not necessary to consider the contentions urged in the other civil appeals except the appeals filed by respondents Nos. 9 and 10.

30. Shri Poovayya has strongly opposed the submissions made by the learned senior counsel appearing for the appellants in C.A. No. 5016 of 2016 and C.A. Nos. 8002-8003 of 2016. It is submitted that the Tribunal is a specialized body for effective and expeditious disposal of cases relating to environmental protection and conservation of forests and other natural resources including enforcement of any legal right relating to environment. The jurisdiction of the Tribunal is provided under Sections 14, 15 and 16 of the NGT Act. Section 14 provides for the jurisdiction over all civil cases where a substantial question relating to environment is involved. However, such question should arise out of implementation of the enactments specified in

Schedule I. The Tribunal has the jurisdiction under Section 15(1)(a) of the NGT Act to provide relief and compensation to the victims of pollution and other environmental damage arising under the enactments specified in Schedule I. Under Sections 15(1)(b) and 15(1)(c), the Tribunal can provide for restitution of property damaged and for restitution of the environment for such area or areas, as the Tribunal may think fit. Sections 15(1)(b) and 15(1)(c) have not been made relatable to enactment specified in Schedule I of the Act. Section 15(1)(c) is an entire island of power and jurisdiction read with Section 21 of the Act. He submits that whenever ecology is being compromised and jeopardized, the Tribunal can apply Section 20 for taking restorative measures in the interest of environment. The limitation provided in Section 14 is period of six months from the date on which cause of action first arose whereas in Section 15 it is five years. Therefore, the petition is not barred by time.

31. He has further submitted that the provisions of Section 33 shall have the effect notwithstanding anything inconsistent contained in any other law for the time being in force. This gives the Tribunal overriding powers over anything inconsistently contained in KIAD Act, Planning Act, Revised Master Plan of Bangalore, 2015 and Karnataka Municipal Corporation Act, 1976 (for short 'KMC Act'). Therefore, the Tribunal while providing for restoration of environment in an area can

specify buffer zone around specific lakes and water bodies in contravention with zoning regulation.

32. Regarding limitation, he has submitted that the application filed by respondents 1 to 3 was not an application simplicitor under Section 14 of the Act. It was an application where a specific prayer has been made with reference to Lake Development Authority's report dated 12.06.2013 and the Ministry of Environment Forest and Climate Change Monitoring Committee report dated 14.08.2013 for restoration of ecologically sensitive land and for maintaining sensitive area in its natural condition so that ecological balance of the area is not disturbed. Therefore, the petition was under Section 15 of the Act and it can be filed within five years from the date on which the cause for such compensation or relief first arose.

33. It was further submitted that right to appeal under Section 22 is not a vested right unless provided by statute. Exercise of Appellate Jurisdiction without the fulfillment of statutory mandate would be without jurisdiction. Section 22 of the Act provides for an appeal on the ground specified in Section 100 of the Code of Civil Procedure, 1908 (for short 'the CPC'). Under Section 100 of the CPC, an appeal can be filed only on the ground that the case involves a substantial question of law as may be framed by the Appellate Court. In the instant case, the appeal does not involve any substantial question of

law hence it has to be dismissed *in limine*. He has taken us through various materials placed on record in order to substantiate that the direction passed and penalty imposed by the Tribunal upon to project proponents are sustainable. He prays for dismissal of the appeals.

34. We have carefully considered the submissions of the learned counsel of the parties and perused the materials placed on record.

35. Before considering the other contentions of the learned counsel for the parties, let us first consider the scope of enquiry in appeals filed under Section 22, which is as under:

> "**22. Appeal to Supreme Court**.- Any person aggrieved by any award, decision or order of the tribunal, may, file an appeal to the Supreme Court, within ninety days from the date of communication of the award, decision or order of the Tribunal, to him, on any one or more of the grounds specified in section 100 of the Code of Civil Procedure, 1908 (5 of 1908):
>
> Provided that the Supreme Court may, entertain any appeal after the expiry of ninety days, if it is satisfied that the appellant was prevented by sufficience cause from preferring the appeal."

36. It is settled that there is no vested right of appeal unless the statute so provides. Further, if a statute provides for a condition subject to which the appropriate Appellate Court can exercise jurisdiction, the Court is under an obligation to satisfy itself whether

the condition prescribed is fulfilled. Exercise of appellate jurisdiction without the fulfillment of statutory mandate would be without jurisdiction. Therefore, the right of appeal provided under Section 22 is to be read subject to the conditions provided therein.

37. Section 22 provides for an appeal to the Supreme Court on the grounds specified in Section 100 of the CPC. Under Section 100 CPC, an appeal can be filed only on the ground that the case involves a substantial question of law as may be framed by the Appellate Court. The scope of appeal under Section 22, therefore, is restricted to substantial question of law arising from the judgment of the Tribunal. The test to determine whether the question is substantial question of law or not was laid down by a Constitution Bench of this Court in **Sir Chunilal V. Mehta and Sons, Ltd.** v. **Century Spinning and Manufacturing**, 1962 Supp. (3) SCR 549. This Court has laid down the test as under:

> "The proper test for determining whether a question of law raised in the case is substantial would, in our opinion, be whether it is of general public importance or whether it directly and substantially affects the rights of the parties and if so whether it is either an open question in the sense that it is not finally settled by this Court or by the Privy Council or by the Federal Court or is not free from difficulty or calls for discussion of alternative views. If the question is settled by the highest court or the general principles to be applied in determining the question are well settled and there is a mere question of applying those principles or that the plea raised is

> palpably absurd the question would not be a substantial question of law."

38. It is equally settled that merely because the remedy of appeal is provided against the decision of the Tribunal on a substantial question of law alone, that does not *ipso facto* permit the appellants to agitate their appeal to seek re-appreciation of the factual matrix of the entire matter. The appellants cannot seek to re-argue their entire case to seek wholesale re-appreciation of evidence and the factual matrix that has been considered by the Tribunal is *ex facie* impermissible under Section 22. There cannot be fresh appreciation or re-appreciation of facts and evidence in a statutory appeal under this provision.

39. The first question raised by the learned counsel is in relation to the maintainability of the application before the Tribunal.

40. The Tribunal has been established under a constitutional mandate provided in Schedule VII List I Entry 13 of the Constitution of India, to implement the decision taken at the United Nations Conference on Environment and Development. The Tribunal is a specialized judicial body for effective and expeditious disposal of cases relating to environmental protection and conservation of forests and other natural resources including enforcement of any legal right relating to environment. The right to healthy environment has been construed as a part of the right to life under Article 21 by way of

judicial pronouncements. Therefore, the Tribunal has special jurisdiction for enforcement of environmental rights.

41. The jurisdiction of the Tribunal is provided under Sections 14, 15 and 16 of the Act. Section 14 provides the jurisdiction over all civil cases where a substantial question relating to environment (including enforcement of any legal right relating to environment) is involved. However, such question should arise out of implementation of the enactments specified in Schedule I.

42. The Tribunal has also jurisdiction under Section 15(1)(a) of the Act to provide relief and compensation to the victims of pollution and other environmental damage arising under the enactments specified in Schedule I. Further, under Section 15(1)(b) and 15(1)(c) the Tribunal can provide for restitution of property damaged and for restitution of the environment for such area or areas as the Tribunal may think fit. It is noteworthy that Section 15(1)(b) & (c) have not been made relatable to Schedule I enactments of the Act. Rightly so, this grants a glimpse into the wide range of powers that the Tribunal has been cloaked with respect to restoration of the environment.

43. Section 15(1)(c) of the Act is an entire island of power and jurisdiction read with Section 20 of the Act. The principles of sustainable development, precautionary principle and polluter pays, propounded by this Court by way of multiple judicial

pronouncements, have now been embedded as a bedrock of environmental jurisprudence under the NGT Act. Therefore, wherever the environment and ecology are being compromised and jeopardized, the Tribunal can apply Section 20 for taking restorative measures in the interest of the environment.

44. The NGT Act being a beneficial legislation, the power bestowed upon the Tribunal would not be read narrowly. An interpretation which furthers the interests of environment must be given a broader reading. (See **Kishsore Lal** v. **Chairman, Employees' State Insurance Corpn.** (2007) 4 SCC 579, para 17). The existence of the Tribunal without its broad restorative powers under Section 15(1)(c) read with Section 20 of the Act, would render it ineffective and toothless, and shall betray the legislative intent in setting up a specialized Tribunal specifically to address environmental concerns. The Tribunal, specially constituted with Judicial Members as well as with Experts in the field of environment, has a legal obligation to provide for preventive and restorative measures in the interest of the environment.

45. Section 15 of the Act provides power & jurisdiction, independent of Section 14 thereof. Further, Section 14(3) juxtaposed with Section 15(3) of the Act, are separate provisions for filing distinct applications before the Tribunal with distinct periods of limitation, thereby amply

demonstrating that jurisdiction of the Tribunal flows from these Sections (i.e. Sections 14 and 15 of the Act) independently. The limitation provided in Section 14 is a period of 6 months from the date on which the cause of action first arose and whereas in Section 15 it is 5 years. Therefore, the legislative intent is clear to keep Section 14 and 15 as self contained jurisdictions.

46. Further, Section 18 of the Act recognizes the right to file applications each under Sections 14 as well as 15. Therefore, it cannot be argued that Section 14 provides jurisdiction to the Tribunal while Section 15 merely supplements the same with powers. As stated *supra*. the typical nature of the Tribunal, its breadth of powers as provided under the statutory provisions of the Act as well as the Scheduled enactments, cumulatively, leaves no manner of doubt that the only tenable interpretation to these provisions would be to read the provisions broadly in favour of cloaking the Tribunal with effective authority. An interpretation that is in favour of conferring jurisdiction should be preferred rather than one taking away jurisdiction.

47. Section 33 of the Act provides an overriding effect to the provisions of the Act over anything inconsistent contained in any other law or in any instrument having effect by virtue of law other than this Act. This gives the Tribunal overriding powers over anything inconsistent contained in the KIAD Act, Planning Act, Karnataka

Municipal Corporations Act, 1976 ("KMC Act"); and the Revised Master Plan of Bengaluru, 2015 ("RMP"). A Central legislation enacted under Entry 13 of List I Schedule VII of the Constitution of India will have the overriding effect over State legislations. The corollary is that the Tribunal while providing for restoration of environment in an area, can specify buffer zones around specific lakes & water bodies in contradiction with zoning regulations under these statutes or the RMP.

48. The second question raised by the appellants is that the petition is barred by time. According to appellants, environmental clearance was granted to the respondent No. 9 on 17.02.2012 for which notice was published in the leading newspaper on 12.03.2012 and 14.03.2012. Modified building plan was approved on 30.08.2012, which was followed up to 10.08.2014. Similar events had taken place in regard to the project of respondent No. 10

who had been granted environmental clearance on 30.09.2013. The application had to be filed within a period of six months from the date on which cause of action for such dispute has first arisen in terms of Section 14 of the NGT Act. Admittedly, the present application has been filed in March, 2014 and according to them, it is much beyond the prescribed period of limitation. Also, there is no application for

condonation of delay accompanying the main application. Therefore, the Tribunal will not have jurisdiction to condone the delay.

49. The OA No. 222 of 2014 was not an application *simpliciter* under Section 14 of the Act. It was an application where a specific prayer has been made with reference to Lake Development Authority's ("LDA") Report dated 12.06.2013 and the Ministry of Environment, Forest and Climate Change ("MoEF") Monitoring Committee Report dated 14.08.2013 for restoration of ecologically sensitive land and for maintaining the sensitive in its natural condition so that the ecological balance of the area is not disturbed. It is clear from the documentary evidence supported by data, that the project proponents have committed breaches and the implementation of the project is bound to have serious adverse impact on the ecology, hydrology and the environment in the catchment area of Bellandur Lake. The environmental degradation as established from the documents would give rise to an independent cause of action. Therefore, this was a petition under Section 15 of the Act and thus it could be filed within 5 years from the date on which the cause for such compensation or relief first arose.

50. In fact, in the original application before the Tribunal there was no mention of the provision under which it was being filed. It is well settled principle of law that non-mention of or erroneous mention of the provision of law would not be of any relevance, if the Court had the

requisite jurisdiction to pass an order. It would be a mere irregularity and would not vitiate the application or the judicial order of the Tribunal.

51. Shri R. Venkataramani, learned senior counsel, appearing for the appellant in CA No.5016 of 2016 has submitted that the constructions had not commenced before the grant of environment clearance. The inspection report dated 11.01.2012 of the Chairman of the KSPCB observes that "no construction" had commenced on the date of inspection. This report cannot be overlooked on the basis of some dumping of debris which could not be attributed to the appellant. He has pointed out the report of the Committee appointed by the Tribunal in the month of August 2015, wherein it was stated that "it started construction after obtaining clearance". In this regard he has also taken us through various documents placed on record and submits that there is absolutely no justification in imposing monitoring penalty/compensation without assessment of impact.

52. The Tribunal has pointed out on the basis of the Committee report of August 2015, that the appellant had encroached 3 acres 10 guntas of Bellandur Lake and a boundary wall has been raised around the said land. The Tribunal has also found that the project proponents have violated the Master Plan. They have not obtained the mandatory clearance from the Sensitive Zone Committee constituted

by the Government of Karnataka. It is also clear from the materials on record that there are several other violations by the project proponents. The Tribunal has discussed all these issues from para 52 onwards. It is also clear from the materials on record that there is a definite possibility of environment, ecology, lakes, and wetland being adversely affected by these projects. That is why, the Tribunal has observed as under:

> "72. In light of the above scope of the project and records before the Tribunal and the defaults on the part of the Project Proponents, the cumulative adverse effects of the activities undertaken by the respondents before us can be summed up as under:
>
> 1) The construction of both the projects had started prior to the grant to Environmental Clearance.
>
> 2) The EIA Notification of 2006 requires that without grant of Environmental Clearance, no project can commence its activity. This restriction applies not only to operationalization of the project but even for the purposes of establishment.
>
> 3) Revenue Map images shows multiple Rajakaluves flowing through the project(s) in question. The images further show encroachment on Rajakaluves.

4) Digital images of the land available on Google satellite images showing encroachment on two major Rajakaluves.

5) Google Satellite images retrieved from Google archives clearly reflect two distinct features. Firstly, change in the wetland area between the period of 13th November, 2000 and 23rd November, 2010. Secondly, it reveals the excavation work carried out by Respondent Nos. 9 and 10 commenced prior to obtaining Environmental Clearance.

6) Restriction in regard to extraction of ground water was not strictly complied with as permission of Central Ground Water Authority was not obtained before construction.

7) The conditions with regard to the natural slopping pattern of the project site to remain unaltered and natural hydrology of the area to be maintained as it is, to ensure natural flow of storm water as well as in relation to Lakes and other water bodies within and/or at the vicinity of the project area to be protected and conserved: The inspection report by the MoEF clearly notes that condition nos. (xxxix) and (xl) in the Environmental Clearance of respondent no. 9 cannot be complied with as it will necessarily result in some alteration of the natural slopping pattern of the project site and the natural hydrology of the area. It noted that the project

area is located in the catchment area of the Bellandur Lake and the project authorities have informed that they will take all precautionary measures to ensure that the lake will not be affected by project activities either during construction or operation phase."

53. In paragraph 81, the Tribunal has observed as under:

"81. .....Another very important aspect which cannot be overlooked by the Tribunal is with regard to the respondent nos. 9 & 10 carrying on their project activity fully knowing that they were incapable of or it was not possible for them to comply with condition no. xxxix and xl (or alike conditions) in the order granting the Environmental Clearance. This has even been noticed by the MoEF in its monitoring report dated 14th August, 2013. These respondents never applied for variation or amendment of these conditions and continued with their construction activities. This renders these respondents entirely liable for environmental and ecological damage and the restoration and restitution thereof."

54. In our view, the findings arrived at by the Tribunal are not only based on the documents that were available on record but also on the pleadings that were made by the parties buttressed by the Committee's report and the inspection note of the Expert Members.

Therefore, the directions passed and the penalty imposed by the Tribunal on both project proponents are valid and sustainable and do not suffer from any perversity.

55. We are also of the view that it is impermissible for the appellants to seek a factual review through the methodology of re-appreciation of factual matrix by this Court under Section 22 of the NGT Act.

56. Shri R.Venkataramani, learned senior counsel has also raised a subsidiary issue relating to *res judicata*. According to him, respondent Nos. 12 and 13 filed Writ Petition Nos.3656-57/2013 seeking similar reliefs in a representative capacity. The issues raised therein are same as those canvassed in the application before the Tribunal. The reliefs sought for are essentially the same. Hence, the applications are barred by the principle of *res judicata*.

57. The Tribunal has answered this issue in paragraphs 47 to 51 of the order. There was no dispute in so far as filing of the writ petitions is concerned. However, the parties are not common nor the issues in application and the writ petitions are directly and substantially the same. After examination of the pleadings, the

Tribunal has recorded a finding of fact that there is no commonality of a cause of action or likelihood of a conflict between the judgments. The prayers and the geneses of the respective proceedings are entirely distinct and different in their scope and relief. The issues before the

Tribunal would essentially relate to environment ecology and its restoration while the proceedings before the High Court relate to entirely different issues with acquisition of land, its allotment and transfer to the third party. These issues in both the proceedings are neither substantial nor materially identical.

58. After elaborately considering this question, the Tribunal has concluded as under:

> "51. ....For these reasons, we find no merit in this contention of respondent Nos. 9 and 10. The purpose of the doctrine of res judicata is to provide finality and conclusiveness to the judicial decisions as well as to avoid multiplicity of litigation. In the present case, the question of re-agitating the issues or agitating similar issues in two different proceedings does not arise. The ambit and scope of jurisdiction is clearly decipherable. The jurisdictions of the Hon'ble High Court of Karnataka and this Tribunal are operating in distinct fields and have no commonality in so far as the issues which are raised directly and substantially in these petitions, as well as the reliefs that have been prayed for before the Hon'ble High Court and the Tribunal are concerned. There is no commonality in parties before the Tribunal and the High Court. The 'cause of action' in both proceedings is different and distinct. The matters

> substantially and materially in issue in one proceedings are not the same in the other proceeding. There is hardly any likelihood of conflicting judgments being pronounced by the Tribunal on the one hand and the High Court on the other. Therefore, we are of the considered view that the present applications are neither hit by the principles of res judicata nor constructive res judicata. We also hold that culmination of proceedings before the Tribunal into a final judgment would not offend the principle of 'judicial propriety', because of the Writ Petitions pending before the Hon'ble High Court of Karnataka."

59. We do not find any error in the aforesaid conclusion of the Tribunal. We are of the view that the Tribunal was justified in holding that the objections taken by the respondent Nos. 9 and 10 do not satisfy the basic ingredients to attract the application of *res judicata* or *constructive res judicata*.

60. The State of Karnataka is aggrieved by the following offending portion of the order dated 04.05.2016:

> "1. In view of our discussion in the main Judgment, we are of the considered view that the fixation of distance from water bodies (lakes and Rajkalewas) suffers from the inbuilt contradiction, legal infirmity and is without any

scientific justification. The RMP – 2015 provides 50m from middle of the Rajkalewas as buffer zone in the case of primary Rajkalewas, 25m in the case of secondary Rajkulewas and 15m in the tertiary Rajkulewas in contradiction to the 30m in the case of lake which is certainly much bigger water body and its utility as a water body/wetland is well known certainly part of wet land. Thus, we direct that the distance in the case of Respondents Nos. 9 and 10 from Rajkulewas, Waterbodies and wetlands shall be maintained as below:-

(i) In the case of Lakes, 75m from the periphery of water body to be maintained as green belt and buffer zone for all the existing water bodies i.e. lakes/wetlands.

(ii) 50m from the edge of the primary Rajkulewas.

(iii) 35m from the edges in the case of secondary Rajkulewas

(iv) 25m from the edges in the case of tertiary Rajkulewas

This buffer/green zone would be treated as no construction zone for all intent and purposes. This is absolutely essential for the purposes of sustainable development particularly keeping in mind the ecology and environment of the areas in question.

All the offending constructions raised by Respondents Nos. 9 and 10 of any kind including boundary wall shall be demolished which falls within such areas. Wherever necessary dredging operations are required, the same should be carried out to restore the original capacity of the water spread area and/or wetlands. Not only the existing construction would be removed but also none of these Respondents - Project Proponent would be permitted to raise any construction in this zone.

All authorities particularly Lake development Authority shall carry out this operation in respect of all the water bodies/ lakes of Bangalore."

61. We have already noticed that Shri Poovayya has no objection to set aside the aforesaid impugned portion of the order in so far as the appellants in all the appeals except the appeals filed by respondent Nos.9 and 10. The aforesaid portion of the order contains not only general directions but also certain directions against respondent Nos. 9 and 10. Therefore, only that portion of the order which does not pertain to respondent Nos. 9 and 10 needs to be quashed.

62. In the light of the above discussion, we pass the following order:

i) Civil Appeal No. 5016 of 2016 and Civil Appeal Nos. 8002-8003 of 2016 filed by the

appellants/respondent nos. 9 and 10 are hereby dismissed. The impugned judgment and order in so far as appellants/respondent Nos. 9 and 10 are concerned is sustained.

ii) All the other appeals are hereby allowed and the direction/condition No. (1) in the order dated 4.5.2016 is hereby set aside except the direction issued against respondent Nos. 9 and 10.

63. There will be no order as to costs.

.....J.
(A.K. SIKRI)

.....J.
(S. ABDUL NAZEER)

.....J.
(M.R. SHAH)

New Delhi;
March 5, 2019.

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The Effects of Construction and Demolition Waste (C&DW) Fine Residues on Landfill Environments: A Column Leaching Experiment

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Abstract

The rapid increase in construction and demolition waste (C&DW) has emerged as a significant environmental challenge, particularly due to the hazardous substances embodied within the fine residues destined into landfills. The disposal of C&DW in landfills has been widely recognized as a source of leachate, containing toxic contaminants, which pose significant environmental risks. A controlled column leaching experiment was conducted using samples with varying proportions of C&DW, gypsum, and organic content to assess their impact on leachate chemistry. The results indicate that higher C&DW content leads to increased concentrations of heavy metals, such as Pb, Hg, As, Cr, Ni, Cu, Zn, and Co, as well as other metals like Al and Fe, with peak contamination occurring within the first 13–15 weeks. Gypsum presence exacerbates heavy metal solubility by reducing pH, increasing sulfate levels, and promoting metal-sulfate complex formation. Despite remaining within regulatory thresholds, the cumulative concentration of toxic metals over time highlights potential environmental risks, particularly in landfill settings. This study underscores the need for improved C&DW management practices, enhanced waste segregation, and sustainable alternatives to gypsum to mitigate long-term ecological impacts. These findings contribute to a deeper understanding of

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C&DW leachate dynamics and inform policy recommendations for sustainable waste management in the construction sector.

Keywords: C&DW fine residues, heavy metal mobilization, gypsum-induced leaching, landfill ecotoxicity, sulfate-metal complexation, emerging contaminant, toxic leachate dynamics

1. Introduction

The sevenfold increase in the world population over the past two centuries has greatly amplified humanity's impact on the natural environment. According to United Nations projections, the global population, currently at 8.12 billion, is expected to rise to 10.4 billion people by the end of the century [1,2]. This increase will be a significant factor for industrial development. It will necessitate an increase in construction worldwide to accommodate the larger population. On the other hand, it is widely known that construction activities consume a large amount of resources and natural materials but also generate substantial waste [3,4]. This poses a major threat to the environment and ecosystems [5,6,7].

The Australian National Waste Report reveals that construction and demolition waste (C&DW) was the largest contributor to overall core waste in 2018–2019, making up nearly 44% of the total waste generated. Of this, 23.2% was sent to landfills [8]. Additionally, data from the past 13 years show a 61% increase in C&DW, with most of this growth occurring in the last five years, coinciding with a rapid phase of urban development [9]. Managing this growing volume of C&DW presents a significant global challenge as a substantial portion ends up in landfills, leading to the production of harmful leachates [10,11,12,13]. Added to this complexity, recent anti-waste movements by countries such as China, Thailand, Philippines, and Malaysia that ban the import of recyclables from developed nations have left Australia with worrying rates of stockpiled waste [14,15,16,17,18,19,20]. This had forced Australian material recovery facilities (MRFs) to resort to source-segregated recyclables meaning that several local councils have had to find places to dump mixed waste streams including C&DW in landfills [17,18].

Mixed C&DW can contain hazardous materials, the mixture of which can cause risks to both the environment and human health [21,22]. To mitigate the environmental and human health risks associated with the management and/or disposal of C&DW, it is crucial to understand how hazardous materials from mixed C&DW interact with the environment. Several approaches can be employed to study this interaction, including investigating how pollutants leach from disposal or containment structures, analyzing the composition of spent materials or leachates, conducting environmental inventories, and undertaking long-term monitoring. Various researchers have investigated the leaching characteristics of C&DW materials to assess their potential for reuse. Delay et al. [23] conducted column and lysimeter leaching tests to measure

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the release of inorganic pollutants in recycled C&DW. Similarly, Yong-Chul and Timothy [24] employed batch and column leaching procedures to analyze the leaching behavior of sulfate and dissolved solids from C&DW fine residues. Several other studies have also focused on characterizing hazardous leachates from C&DW mixtures. For instance, Roussat et al. [25] examined the release potential of CCA-treated wood and painted wood using lysimeter leaching tests. Furthermore, research by Jambeck et al. [26] and Khan et al. [27] evaluated the concentrations and leaching rates of arsenic, copper, and chromium in municipal solid waste (MSW) and C&DW lysimeter tests.

The composition of C&DW fine residues greatly affects the quality of leachate produced at the landfills, subsequently resulting in groundwater contamination. When organic materials mix with plasterboard (gypsum, calcium sulfate dehydrate, and $CaSO_4 \cdot 2H_2O$), landfill biological processes result in the generation of hydrogen sulfides (H_2S) and sulfuric acid (H_2SO_4) [28]. This results in a change in the pH of the leachate resulting in reductive dissolutions. These can mobilize metals such as arsenic, copper, and chromium that are commonly found in treated wood fine residues within the waste stream and other toxic heavy metals from naturally occurring materials [28,29]. A groundwater monitoring study on unlined landfills that receive C&DW in Florida reported a down gradient high concentration of sulfate, iron, and arsenic, suggesting leachate contamination from C&DW [30].

An over-reliance on mechanized demolition technologies due to ever-increasing labor costs for selective deconstruction has resulted in the generation of a higher proportion of mixed C&DW. This huge volume of mixed C&DW needs to be sorted to feed recovery processes in MRFs. This involves a series of shredding and size reduction processes and subsequent mixing. In turn, this generates significant quantities of potentially hazardous contaminants as C&DW fine residues. Given the current management of residuals and their disposal practices [31], the impact of C&DW fine residues disposal in Australia has not been adequately investigated [22].

The aim of this study is to the following:

i. Assess the levels and release potential of heavy metals from C&DW fine residues.
ii. Investigate the impact of C&DW and gypsum content on the leaching and release behavior of heavy metals.
iii. Determine environmentally friendly C&DW–gypsum content and identify combinations that pose environmental risks.

The study will enhance understanding of the environmental risks linked to the disposal of C&DW fine residues, which are typically considered inert. It will also help identify the potential destiny of contaminants in landfills and evaluate the effectiveness of containment measures in

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protecting the environment and human health by identifying the levels of hazardous substances within C&DW fines, the study will provide valuable insights that can enhance waste management practices, inform policy and regulatory development, and expand the knowledge base necessary for more efficient recycling and resource recovery methods. This research supports a circular economy and is globally relevant, addressing challenges posed by international bans on recyclable imports and contributing to the scientific community's understanding of C&DW management and its environmental impacts.

2. Materials and Methods

2.1. Study Area and Site Selection

According to data obtained from the New South Wales (NSW) public registers [32], there are 210 facilities in the NSW region licensed and operating for handling C&DW under the license "Waste storage–other types of waste". Moreover, data provided by the Australian Biomass for Bioenergy Assessment (ABBA) project [33] have stratified the whole of NSW based on tonnes of C&DW received at waste transfer facilities within the state. As depicted in Figure 1, councils within the Hunter/Central Coast region receive a huge amount of C&DW. Moreover, this sub-region is a region of concern based on NSW Environmental Protection Authority (EPA)'s "Waste Less, Recycle More initiative" regarding plasterboard recycling [34]. The Hunter/Central Coast region was thus selected as the focus area of this study, providing three benefits. Firstly, it represents regions that receive the highest amount of C&DW as well as those that receive the least. Secondly, prevailing conservative plasterboard recovery practices offer additional opportunities to investigate the impact of the particular project. Thirdly, councils within this sub-region have established a common joint institution that specifically deals with waste management efforts.

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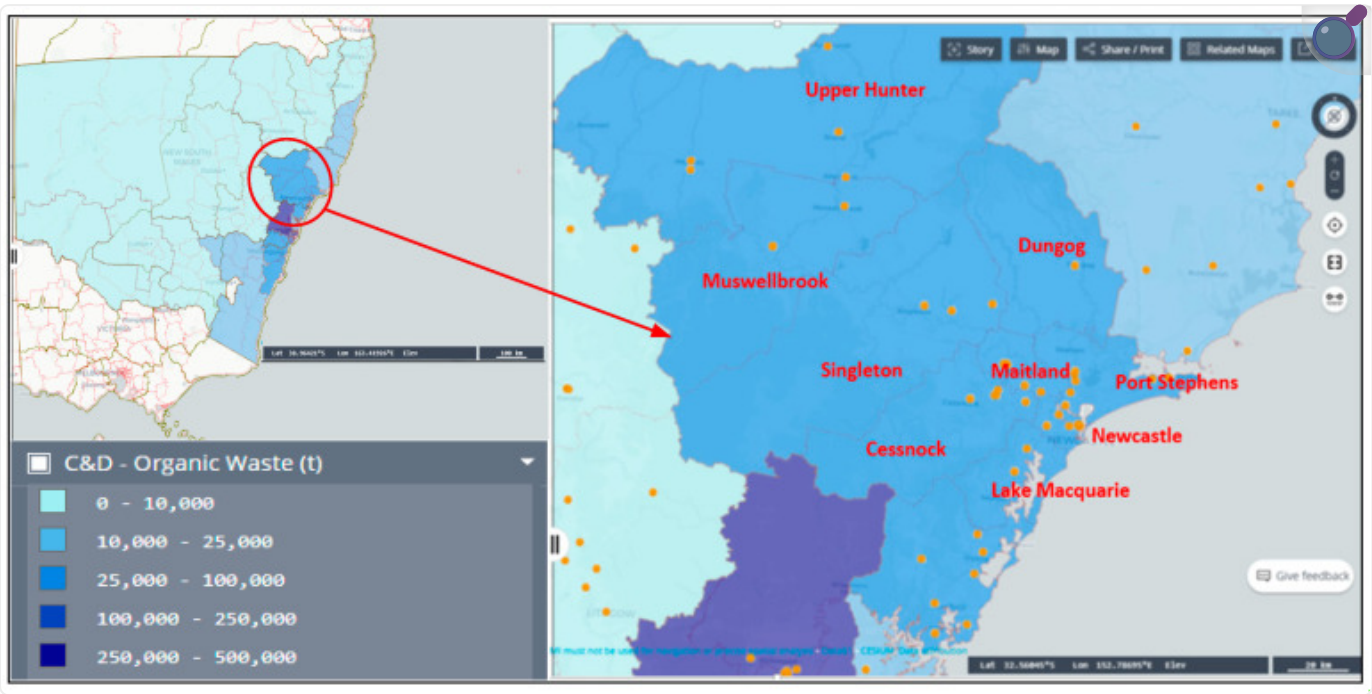
Figure 1.



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Map of Hunter/Central Coast region, NSW, Australia.

Furthermore, data obtained from the Australian Renewable Energy Agency (ARENA) identify 45 C&DW recovery facilities in this sub-region [35]. Although detailed information on the type of recovery facilities is limited, various reports indicate that fixed C&DW processing and recovery facilities—permanent sites where construction and demolition waste is sorted, processed, and recycled into reusable materials—are scarce even at the state level. Hence, all fixed C&DW sorting and processing plants within this sub-region were included in this study. However, several consultations with EPA, NSW experts, and local government officials as well as industry practitioners identified only one facility that undertook mixed C&DW sorting and processing in this region. The rest of the facilities principally operated as transfer stations to source separated C&DW, and no processing was conducted in these sites.

2.2. Experimental Setting

A hypothetical representation of common landfills operating in and around the Hunter/Central coast sub-region was simulated in a laboratory column experiment conducted at the University of Newcastle, Newcastle Institute for Energy and Resources (NIER) facility. Each column was

packed with organic matter, C&DW fine residues, and gypsum. C&DW fine residue samples were collected from multiple stockpiles within an MRF (Figure 2). Proportionally allocated sub-samples were acquired from each stockpile. Depending on the pile size, a reduction in sample size was achieved by successive coning and quartering method [36,37,38,39], and a final sample size of 20 L was collected from each pile. The different C&DW fine residue batch samples were then transported to the University of Newcastle soil shed and mixed in a large cement mixer to get a uniformly mixed C&DW fine residue Waste construction gypsum board was crushed and dried in an oven at a temperature of 60 °C for 24 h [40]. Once the gypsum particles were dried, a portion was crushed to 2 mm size using a pestle and mortar. Commercially available organic compost was used to represent the organic fraction of a simulated landfill. After preparing the column setup, sampling and analysis of leachates were conducted fortnightly with continuous feeding to maintain the column saturated throughout the experiment.

Figure 2.



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C&DW processing residual fines accumulated for disposal into landfills.

2.3. Column Setup and Material of Construction

A storm water UPVC (Unplasticized Polyvinyl Chloride) pipe of 150 mm diameter was used to construct each column. The same material was used for bottom and top caps. The top cap was

perforated at the center to provide an inlet for feeding column leaching fluid and the bottom outlet for the leachate. The top was fitted with three circles of perforated 5 mm clear vinyl pipe to feed leaching fluid as shown in Figure 3a. The three perforated coiled vinyl pipes were intended to distribute the leaching fluid simulating rain distribution and prevent preferential flow of leaching fluid. On the other hand, the collection of leachates at the bottom outlet was via a 13 mm clear vinyl pipe fitted with end plug. A 15 L High-Density Polyethylene tank was fitted to a flow splitter to 4 individual columns (Figure 3b). Sampling ports were also fitted with a plug to increase retention and contact time of leaching fluid to column contents. The feeding tanks were fitted with a flow distribution tap with adjustable flow control valve.

Figure 3.



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Column top cover with coiled flow distribution vinyl pipe (**a**) and feed tank arrangements (**b**).

2.4. Leaching Column Composition and Packing

Eighteen individual columns were prepared, each packed with organic matter (local organic compost that can represent the organic fraction of landfill waste) and C&DW with or without

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gypsum to a height of 75 cm. The packed column mix was prepared with quantities of mixture proportions described in Table 1.

Table 1.

Column mix proportions and arrangement.

Column ID No.	C&DW Content (%)	Gypsum Content (Gyp %)	Max. Organic Content (Org %)	Remarks
1–4	5	0, 5, 10 and 15	95%	Test columns
5–8	10		90%	Test columns
9–12	15		85%	Test columns
13–16	20		80%	Test columns
17	0	0	100	Control-Org
18	85	15	0	Control-C&DW

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Each column was bedded with fine plastic mesh to prevent soil particles from blocking the leachate outlet. A 4 cm layer of quartz pebbles (2–6 mm) was then placed on top of the mesh, followed by a 4 cm layer of washed coarse sand. Both the pebbles and coarse sand were washed three times, spread over a mesh to drain the water for 6 h, and then oven-dried at 60 °C for 48 h before being packed (Figure 4)

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Figure 4.



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Draining of washed pebbles for 6 hrs before putting them inside an oven.

The C&DW mixed with gypsum was placed at three equal intervals (every 20–23.75 cm) as shown in Figure 5. Each of the three layers of the weighed organic portion was divided into two equal parts (totally 6 portions per column) to facilitate column filling uniformity and avoid differential settling. During filling, every portion was tapped round 8 times on the outside surface of the column using a trowel handle to prevent void spaces that might cause preferential flow of leaching fluid. The full column setup is shown in Figure 5 and Figure 6.

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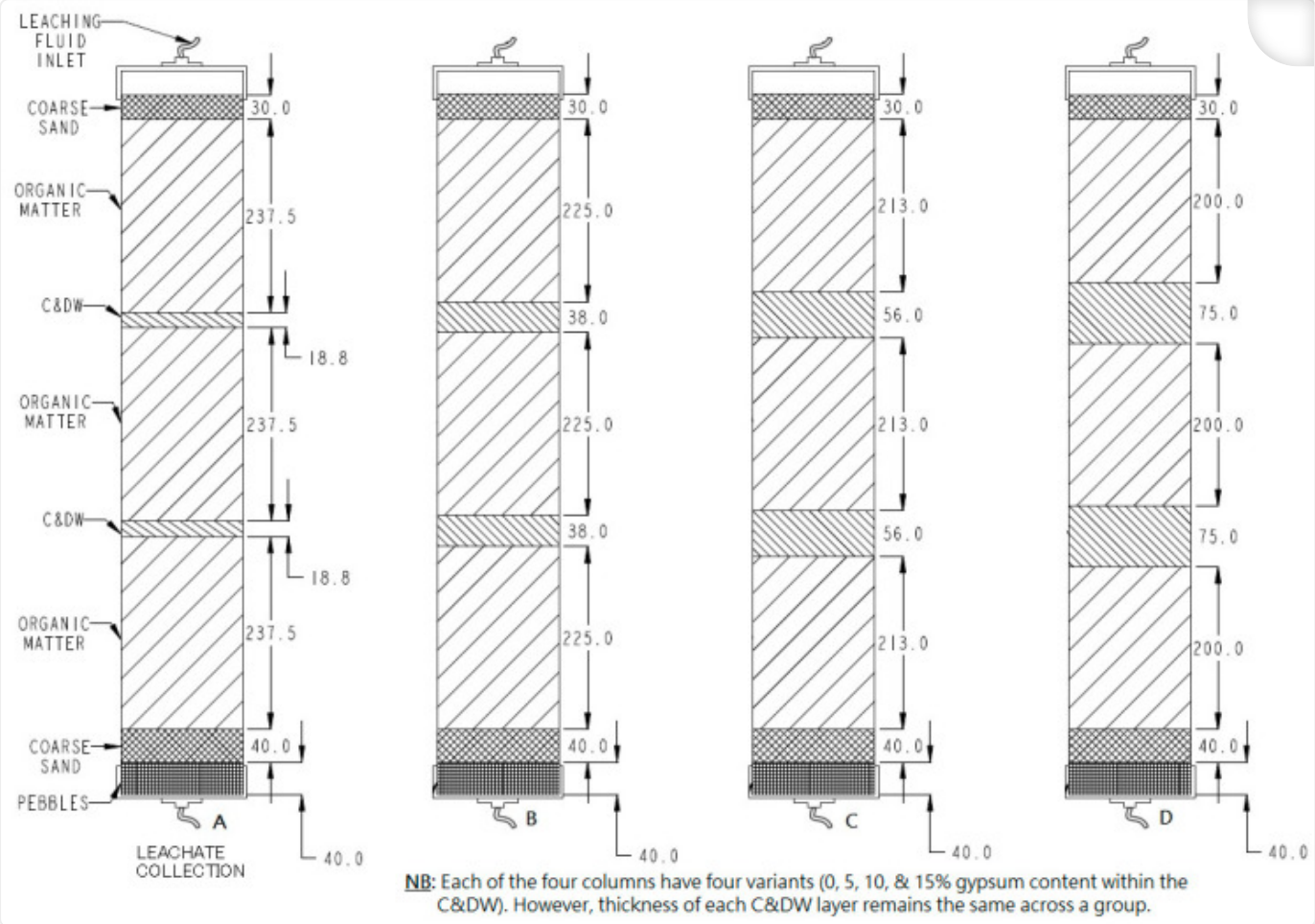
Figure 5.



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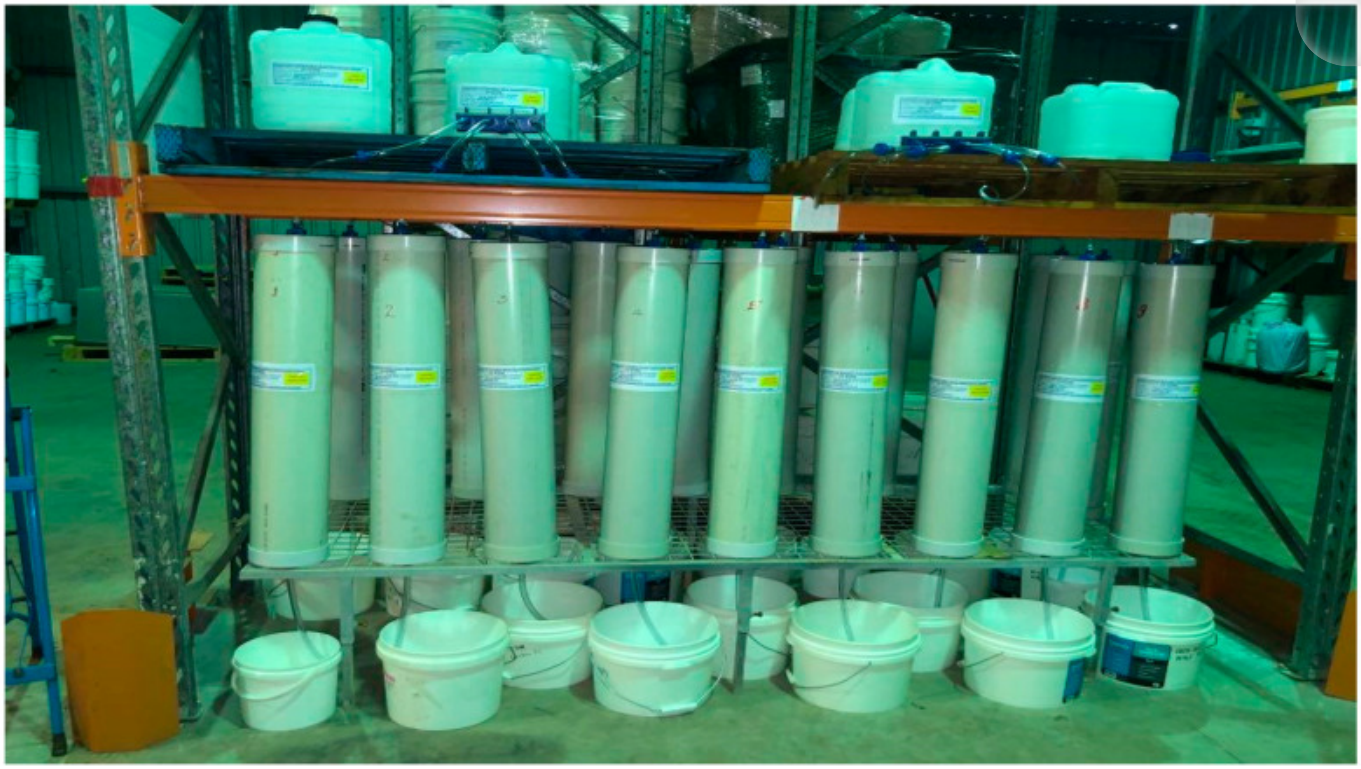
Column mix proportions. A, B, C, and D represent column mixes of 5, 10, 15, and 20% C&DW each with 0, 5, 10, and 15% gypsum content variants as specified in Table 1 above.

Figure 6.



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Complete setup of leaching apparatus and leachate collection arrangements.

2.5. Leaching Fluid Preparation, Feeding, and Sampling

Tap water was connected directly to the feeding tanks with a hose (5 feeding tanks of 15 L capacity). In total, 450 µL of 60/40 w/w% H_2SO_4/HNO_3 was added to each of the feeding tanks to alter the pH of the leaching fluid to that of local precipitation (pH = 4.5) [41,42]. The columns were fed with the leaching fluid until they were fully saturated at a flow rate of 10–15 drops/min (the minimum practicable flow rate that could be achieved) with the bottom outlet remaining closed until sampling. Considering the average annual rainfall in the Hunter/Central Coast subregion (870 mm/year) [43] and translating it into the cross-section of the column, the potential flow rate was calculated at 5 drops/min. However, achieving a flow rate of 5 drops/min with this setup proved impractical. The minimum achievable flow rate was 10–15 drops/min. Attempts to reach this flow rate through manual adjustment were time-intensive and ultimately not feasible. Consequently, as this arrangement resulted in a doubling or tripling of the intended feed rate of 5 drops/day, feeding was limited to specific intervals rather than a

continuous 24 h period. The system was instead operated for an average of 8 h daily at the specified flow rate.

After full saturation, the bottom outlets of leachate were closed to enable sufficient contact time with the leaching fluid. After one week, baseline sampling been conducted. During sampling, some of the bottom leachate not in direct contact with the column contents was drained for approximately 10 min and discarded. This ensured that representative samples of the column contents were obtained. After first sampling, the leaching fluid was replaced to full saturation and outlets were recapped. Based on indications from week one, the next sampling was taken fortnightly.

2.6. Determination of Heavy Metals and Major Cations

2.6.1. Sample Preparation

Ten metals were targeted for analysis (Aluminum, Chromium, Iron, Cobalt, Nickel, Copper, Zinc, Arsenic, Mercury, and Lead). Leachate samples were collected fortnightly using 50 mL centrifuge tubes and pH and conductivity were measured by a coupled pH-conductivity meter (METTLER TOLEDO International Inc., SevenCompact™ Duo S213, Greifensee, Switzerland). The samples were then centrifuged and 10 mL portion of it was filtered through 0.45 µm syringe filters and transferred into 10 mL tubes for analysis. Another 0.5 ml portion of the filtered sample was diluted 20 times and transferred into a 10 mL ICP tube for analysis of mercury and major cations. All chemical methods were administered according to the Australian Laboratory Handbook for soil and water chemical analyses [44]. All glassware was prewashed with copious amounts of water and then soaked for at least 6 h in 3% HNO_3 solution. After soaking, the glassware was rinsed thoroughly with tap water, followed by a final rinse with deionized water before every use.

The authors confirm that safety clearance for the experimental procedures conducted in this study was obtained from the University of Newcastle Health and Safety Team.

2.6.2. Apparatus

Inductively Coupled Plasma Mass Spectrometry (PerkinElmer Inc., NexION® 350X ICP-MS, Waltham, MA, USA) was used for the analysis of heavy metals and Inductively Coupled Plasma Optical Emission Spectrometer (ICP-OES, PerkinElmer Avio 200 model) was used for analysis of cations such as (Al and Fe).

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2.6.3. Reagents and Chemicals

All reagents and chemicals used were high-purity analytical grade chemicals obtained from Thermo Fisher Scientific Inc., Waltham, MA, USA, and Sigma-Aldrich Pty Ltd., Castle Hill, NSW, Australia, an affiliate of Merck KGaA, Darmstadt, Germany. The main chemicals and reagents utilized were hydrochloric acid (HCl), 37% (ACS grade reagent); nitric acid (HNO_3), 70%, d = 1.42 (ACS grade reagent); sulfuric acid (H_2SO_4), 98% SG 1.83, and Milli-Q water (18.2 MΩ).

2.6.4. Analysis of Heavy Metals and Cations (ICP-MS and ICP-OES)

Elemental concentrations of Pb, Hg, As, Cr, Ni, Cu, Zn, and Co were determined using ICP-MS (PerkinElmer NexION 350X), while Al and Fe were analyzed using ICP-OES (PerkinElmer Inc., Avio® 200 ICP-OES). For ICP-MS, internal calibration was prepared using a multi-element internal standard mixture containing Sc-45, Y-89, Rh-103, In-115, and Tb-159, each at a concentration of 10 ppm in a 2% HNO_3 matrix. The PerkinElmer NexION 350X Series ICP-MS can measure trace elements as low as one part per trillion (ppt) and can quickly scan more than seventy elements to determine the composition of an unknown sample. The ICP-MS system is automated with Agilent Technologies Inc., MassHunter 4.3, Workstation Software, Santa Clara, CA, USA, which accurately interprets the resulting data. The instrument features an on-board peristaltic pump to control the flow of sample solution into and waste (drain) out of the instrument, a Micro Mist nebulizer that uses a stream of argon to disperse the sample, an ICP Argon plasma torch using Argon as plasma gas, auxiliary gas and nebulizer (carrier) gas, two pumps for evacuation, a quadrupole mass analyzer with 0.8 amu resolution at 10% height, an Octapole Reaction System (ORS), and electron multiplier detector. The operating conditions are as follows: nebulizer gas (Ar) flow rate: 0.9 L/min, auxiliary gas (Ar) flow 0.3 L/min, plasma (Ar) gas flow rate: 15 L/min, reaction gas flow (He) 4 mL/min. Lens voltage was maintained at 7.25 V, with an RF power setting of 1100 W. The oxide ratio (CeO^+/Ce^+) and doubly charged ion ratio (Ce^{+2}/Ce^{+1}) were both kept at 1% reflecting effective plasma performance and minimal polyatomic interference.

For ICP-OES, multi-element standard solutions (CertiPUR® from Merck) containing known concentrations of elements including Ca, Mg, K, Na, Fe, Mn, and Al were prepared in a matrix of 1% HNO_3 and diluted across a concentration range of 0.01 to 10 mg/L to construct calibration curves. The PerkinElmer Avio 200 model of ICP-OES features a dual-view configuration, enabling both axial and radial plasma observation to accommodate trace and matrix-rich samples. Key operating parameters for the ICP-OES analysis were RF power (1500 W), plasma gas (Ar) flow rate (10 L/min), auxiliary gas (Ar) flow rate (0.5 L/min), nebulizer gas (Ar) flow rate (0.7 L/min), and sample uptake rate (~1.0 mL/min)

To ensure accuracy and consistency across all measurements, parallel samples and replicate analysis were employed, and both calibration standards and samples were matrix matched and prepared in the same acid concentration. Each leachate sample was prepared by diluting 1.0 mL of the original sample to 10.0 mL with deionized water. All samples were analyzed in triplicate, and results were expressed as mean ± standard deviation (SD). The relative standard deviations (RSDs) of the triplicate measurements were calculated and found to be less than 5% for all elements analyzed, indicating high analytical precision. Furthermore, six-point calibration curves for all metals were constructed by plotting the ratio of the intensity of the analyte metal to that of the internal standard (IS) against the concentration of the trace metal. All calibration curves exhibited excellent linearity with a correlation coefficient ($r^2 > 0.999$) for all metals analyzed. Internal standard recoveries were within the acceptable range of 90–110%, confirming the accuracy of the method.

2.6.5. Quality Control and Data Analysis

Experimental samples were run in triplicate for the entire experiment. The effect of the background matrix was controlled by running replicate blanks in each case. All experimental samples were acidified using a drop of 2% HNO_3 (20 µL) for ICP analysis when there was a need to wait for an extended time over 24 hrs. Continuous calibration verifications (CCVs) were performed periodically, after every 10-sample analysis, and a maximum 5% deviation of the CCV was accepted. The recovery of internal standards was in the range of 90% to 110%. Data analyses and graph plotting were conducted using Excel software (Version 2503 Build 16.0.18623.20178). The results were processed and indicated with a significant level of 5% ($p < 0.5$).

3. Results and Discussion

3.1. Physicochemical Properties of Column Fill C&DW Fines

Sieve analysis of the C&DW fine residues revealed that about 80% of the samples were less than 4.75 mm in size (Figure 7). According to Australian standards for soil classification for engineering purposes (AS 1289.3.6.1-2009) [45], the coefficient of curvature for a well-graded soil, $C_c = \left[\frac{(D_{30})^2}{D_{60} \times D_{10}}\right]$ should fall between 1 and 3, while its uniformity coefficient, $C_u = \frac{D_{60}}{D_{10}}$, should be beyond 4 for gravel or 6 for sand [46,47]. The C&DW fine residues were categorized as poorly graded soil with Cc of 0.4575 and Cu of 20.33.

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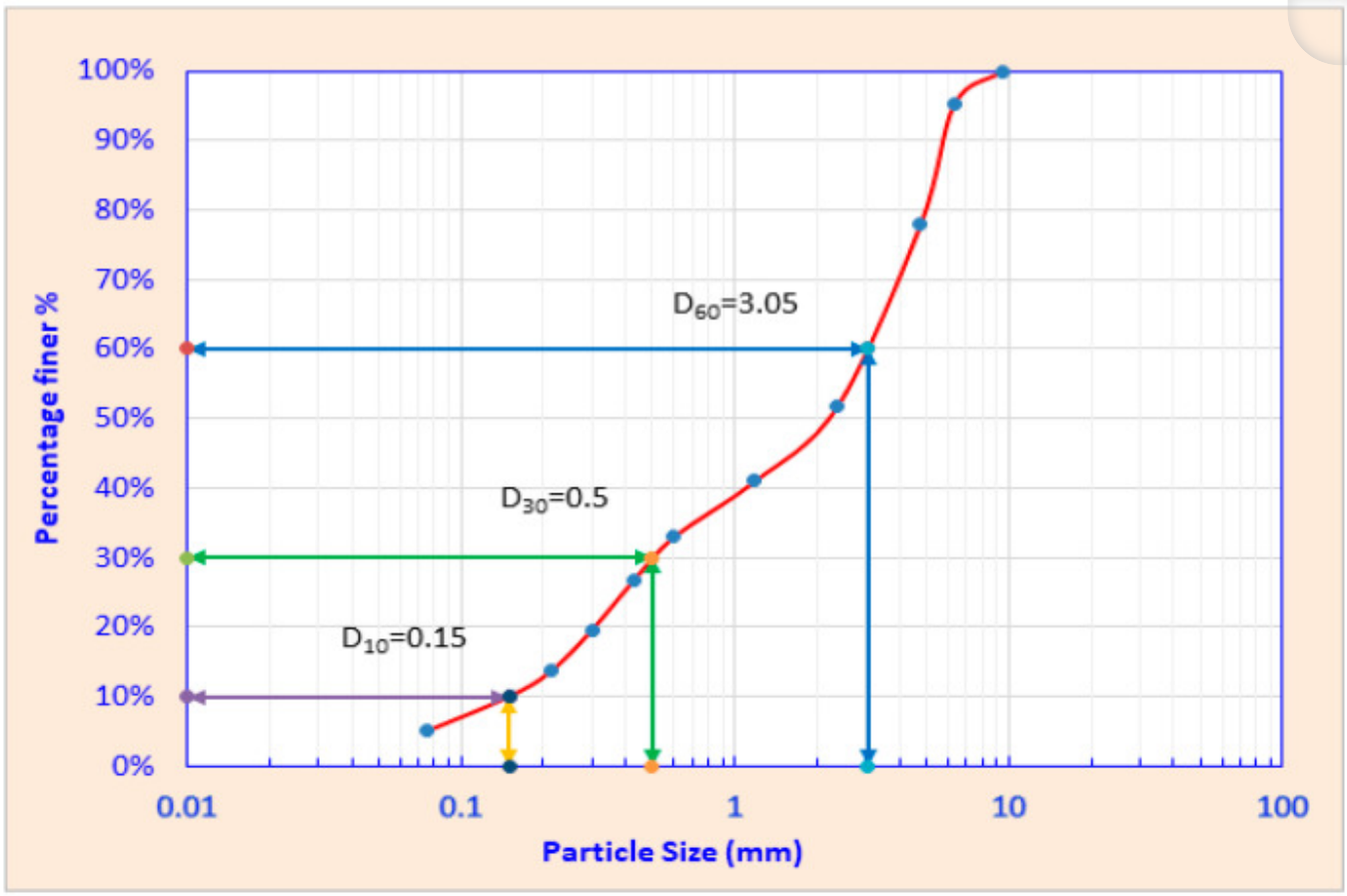
Figure 7.



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Grain size distribution of C&DW fine residue stockpiles from MRFs.

This finding highlights the finer composition of C&DW fine residues in Australia, which can be attributed to the use of automated C&DW processing facilities that crush and mix various waste components, resulting in more uniform finer fractions. These results are consistent with the size characteristics of C&DW fine residues observed in Japan, Italy, and Portugal [48,49,50]. As specified in American Society for Testing and Materials and Australian Standards [45,51,52], the recommended particle size for materials undergoing leaching tests is less than 4.75 mm. Since over 80% of the samples fall within this size range, the leaching test results can be considered representative of typical C&DW samples.

The pH of the leachate ranged from 5.05 (observed in Weeks 19 and 21 for the 100% organic waste stream) to 7.47 (recorded in the first week for the 100% C&DW fine fractions stream). This pH range is relatively lower than those reported in previous studies on various types of

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C&DW. For instance, Somasundaram et al. [53] observed pH levels between 5.3 for the wooden fraction and 11.4 for the concrete fraction of C&DW, while mixed C&DW typically ranged from 9.6 to 9.9. In another study, Saca et al. [54] reported that the pH of concrete samples ranged from 8.45 to 11.82. Additionally, a column leaching experiment by Min et al. [55] using mixed C&DW reported pH values from 5.6 to 10.8. The lower pH levels observed may result from differences in C&DW composition across countries. For instance, Australia, as one of the world's largest consumers of gypsum board [56,57,58,59], has a significant portion of residential buildings made from wood and gypsum board. In contrast, South Korea, which consumes minimal gypsum board in construction, favors concrete and other durable materials for its residential properties, as reflected in the studies above [60]. Such variations in materials likely contribute to differences in the pH profiles of C&DW. This suggests that the C&DW in the present study contains a significant amount of wood and gypsum board fragments within the mixed waste. With a pH of 4.5 for the leaching fluid fed into the columns and a leachate pH of 5.05 for the 100% organic waste column, the slightly higher pH of 7.47 for the 100% C&DW stream indicates that C&DW possesses acid-neutralizing capacity. This characteristic suggests its potential application in treating low-pH industrial discharges and naturally acidic environments [61,62,63,64].

Overall, the different column compositions have shown nearly similar pH patterns for the first 13 weeks, with slight variations occurring afterwards (Figure 8a). This change over time as conclusively argued by different researchers [65,66,67,68] could be attributed to the progressive depletion over time in the chemical composition of the column contents, essentially a characteristic of the continuous leaching process and variation in column compositions. With respect to the pH and conductivity curves over time, similar leaching patterns have been reported for different waste materials at various pH ranges with higher leaching rates at both extreme pH values and lowest leaching rates at or near neutral pH [69,70,71]. Conductivity initially ranged from 3000 to 7000 µS/cm at the beginning of the experiment and gradually decreased to 1000–4000 µS/cm towards the end, aligning with the findings of Hyks et al. [65] (pp. 522–529), Hyks et al. [66] (pp. 80–91), Dijkstra [67], and Nakao et al. [68]. Moreover, a notable change in conductivity was observed from about the 13th to 15th week onwards. This suggests a corresponding depletion of dissolved minerals from this time onwards as observed in the variation of pH values from the 13th week onwards. This notable change in conductivity aligns with the cumulative concentration of heavy metals observed, as depicted in Figure 9. The figure demonstrates a steady increase in heavy metal concentrations up to the 13th to 15th week, followed by a relatively stable trend thereafter. Columns with relatively higher proportions of gypsum and C&DW content (15% Gyp-15% C&DW, 15% Gyp-20% C&DW, and 100% C&DW) recorded relatively higher conductivity levels, indicating a sustained release of dissolved minerals over the long term.

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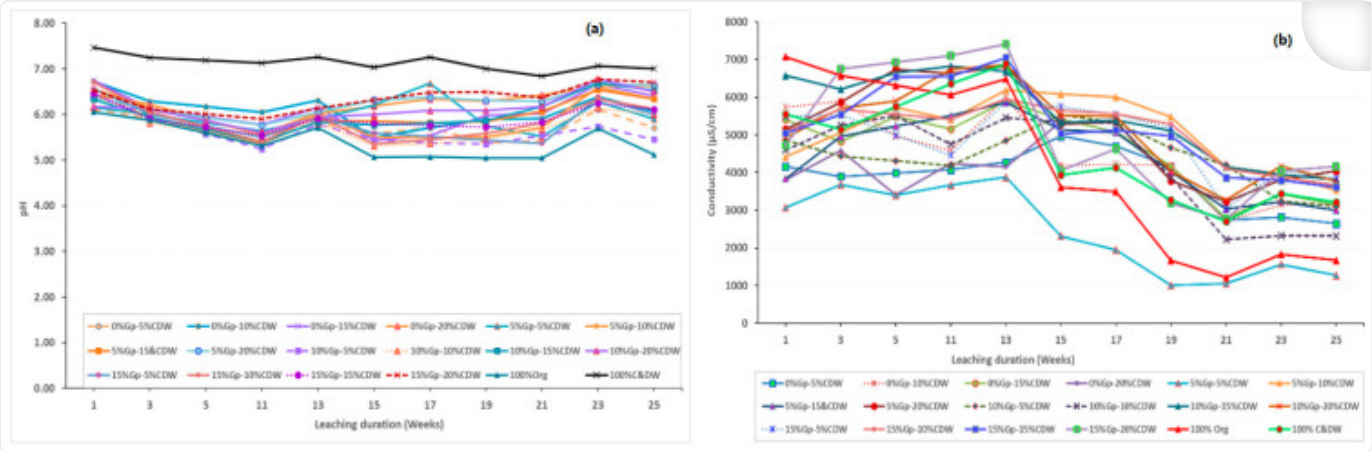
Figure 8.



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pH (**a**) and conductivity (**b**) of leachate as a function of leaching duration (NB: 0-5-95 and 5-5-95, etc., signify the corresponding concentrations of 0% Gyp, 5% C&DW, and 95% Org Waste, and 5% Gyp, 5% C&DW, and 95% Org Waste, respectively).

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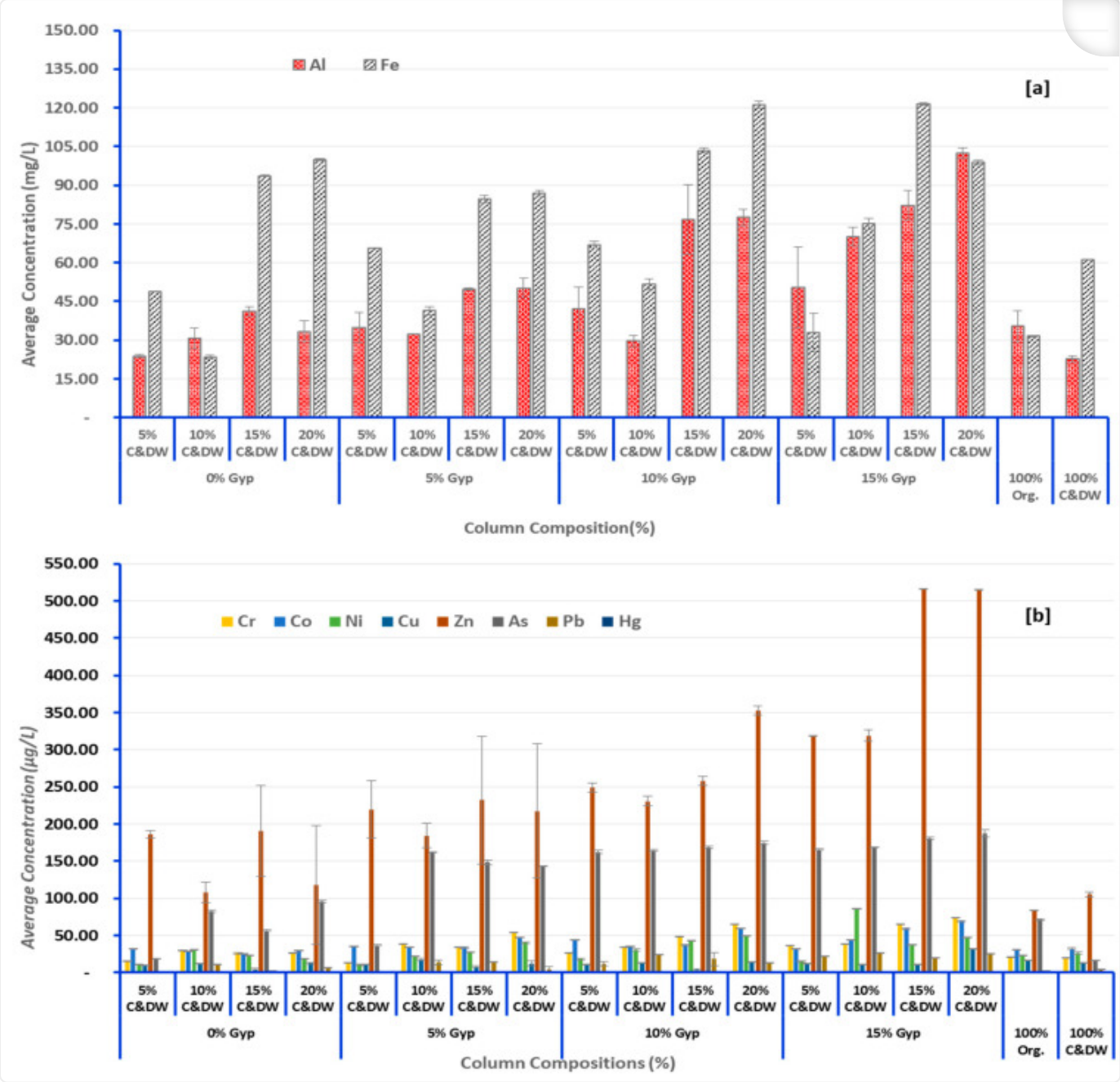
Figure 9.



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Average concentration of heavy metals in the leachate during the maximum leaching week [Week 13]. (**a**)—mg/L and (**b**)—µg/L.

3.2. Heavy Metals of Concern Leached from C&DW

Table 2 and Figure 9, Figure 10 and Figure 11 provide data on heavy metals in the leachates across various columns fill proportions of C&DW with different levels of gypsum content. For most elements, the lowest concentration observed was at 5% C&DW without gypsum, while the highest concentration was recorded at 20% C&DW with 15% gypsum. Nevertheless, none of the column mixes exceeded the maximum allowable values for leachable concentration or specific contaminant concentration (SCC) for general and restricted solid wastes (Table 2) [72]. Although metals like Aluminum (Al) and Iron (Fe) are not included in the Toxicity Characteristics Leaching Procedure (TCLP) and SCC guideline values for waste classification due to their natural abundance in soils and perceived lower environmental risk, they, however, exceeded the maximum permissible levels set by the Australian and New Zealand guidelines for fresh and marine water quality [73]. The relatively elevated concentrations of Al and Fe recorded in this study indicate that the source of C&DW fines is composed of brick fragments. This conclusion is corroborated by X-ray fluorescence analysis conducted by Gao et al. [74], which identified the typical chemical compositions of brick-based C&DW as SiO_2 (30.2–60.5%), Al_2O_3 (4.6–18.9%), and Fe_2O_3 (1.5–7.6%), aligning with our findings. Diotti et al. [75] on his part reported that fine residues and recycled aggregates from C&DW are rich in Si, Al, and Fe with concentrations of 421,000 mg(Si)/kg, 12,021 mg(Al)/kg, 211.30 mg(Fe)/kg, respectively. Furthermore, the material profiles of C&DW delivered to recovery facilities in Australia, predominantly originating from demolition activities, are primarily comprised of mixed C&DW fractions, with bricks and concrete making up the majority [76]. Furthermore, elevated levels of Al and Fe in the leachate may also result from cross-contamination caused by mechanized demolition, inadequate segregation practices, and crushing during waste processing activities [22].

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Table 2.

Average concentration of heavy metals in the leachate samples (measured in μg/L) during the maximum leaching week [Week 13 (other metals like Al and Fe measured in mg/L)].

Column Fill (%)		Metal Concentration, ±STDVE							
C&DW	Gypsum	Al * [20]	Fe * [20]	Cr * [100]	Co * [1000]	Ni * [2000]	Cu * [200]	Zn * [20,0]	As ** [500
5% C&DW	0	23.9 ± 0.77	48.8 ± 0.04	15.2 ± 0.36	31.8 ± 0.42	11.2 ± 0.42	10.0 ± 0.45	186.4 ± 4.63	18.8 0.29
	5	34.9 ± 5.87	65.7 ± 0.00	13.2 ± 0.32	35.3 ± 0.35	10.4 ± 0.21	11.0 ± 0.41	219.5 ± 14.24	36.6 1.66
	10	42.2 ± 8.28	67.0 ± 1.37	27.4 ± 0.86	44.8 ± 0.14	18.2 ± 0.09	11.8 ± 0.74	249.0 ± 61.00	162.2 0.83
	15	50.4 ±15.64	32.9 ±7.52	36.7 ± 0.17	31.8 ± 0.48	15.1 ± 0.03	12.4 ± 0.85	319.3 ± 80.37	165.8 1.80
10% C&DW	0	30.7 ± 4.03	23.5 ± 0.90	30.4 ± 0.23	28.9 ± 0.32	31.0 ± 0.83	12.1 ± 0.32	108.0 ± 38.54	83.0 1.22
	5	32.3 ± 0.10	41.4 ± 1.59	38.3 ± 0.40	34.3 ± 0.36	21.8 ± 0.86	17.7 ± 1.34	184.6 ± 16.81	162.4 0.64
	10	29.7 ± 2.17	51.6 ± 2.06	34.2 ± 0.43	36.0 ± 1.04	31.0 ± 0.22	12.9 ± 0.97	230.6 ± 86.23	164.5 3.20
	15	70.1 ± 3.75	75.1 ± 2.24	39.1 ± 0.01	44.0 ± 0.46	85.7 ± 1.07	11.5 ± 3.47	319.0 ± 90.43	168.7 0.76
15% C&DW	0	41.1 ± 1.93	93.6 ± 0.28	25.9 ± 0.01	25.1 ± 0.29	24.0 ± 0.73	4.8 ± 0.05	190.6 ± 6.27	56.6 2.14
	5	49.8 ± 0.55	84.6 ± 1.52	33.8 ± 0.27	34.0 ± 0.28	27.3 ± 1.40	8.0 ± 0.46	232.2 ± 6.53	148.4 1.32
	10	76. 8 ±13.39	103.4 ± 0.91	48.4 ± 0.54	37.2 ± 1.15	43.2 ± 0.26	4.0 ± 0.83	257.9 ± 5.76	168.6 1.21
	15	82.2 ± 5.63	121.4 ± 0.37	64.7 ± 0.05	59.0 ± 0.39	37.8 ± 0.09	11. 6 ± 0.10	516.0 ± 6.53	181.0 1.74

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Column Fill (%)		Metal Concentration, ±STDVE							
C&DW	Gypsum	Al * [20]	Fe * [20]	Cr * [100]	Co * [1000]	Ni * [2000]	Cu * [200]	Zn * [20,0]	As ** [500
20% C&DW	0	33.4 ± 4.19	100.0 ± 0.46	26.9 ± 0.21	30.0 ± 0.52	19.5 ± 1.07	12.7 ± 0.15	117.9 ± 0.43	96.2 1.00
	5	50.2 ± 3.73	86.8 ± 1.14	54.8 ± 0.12	46.9 ± 0.43	40.4 ± 0.84	12.2 ± 0.13	217.6 ± 7.66	143.2 0.41
	10	77.6 ± 3.14	121.1 ± 1.38	65.9 ± 0.31	59.3 ± 0.93	49.9 ± 0.19	14.2 ± 0.10	352.8 ± 0.61	174.7 1.60
	15	102.4 ±2.03	98.9 ± 0.73	73.7 ± 0.37	69.1 ± 1.21	47.0 ± 0.38	31.9 ± 0.08	514.8 ± 0.31	187.2 4.84
100% Org. W		26.4 ± 35.37	6.0 ± 31.57	0.0 ± 20.81	0.4 ± 20.81	0.2 ± 30.94	0.2 ± 24.06	0.0 ± 16.73	0.0 ± 83.7
100% C&DW		23.1 ± 22.73	1.3 ± 61.27	0.0 ± 19.61	0.1 ± 19.61	0.2 ± 32.39	0.7 ± 26.00	1.8 ± 13.15	0.3 ± 105.3

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* Australian and New Zealand guidelines for fresh and marine water quality [73]; ** maximum values of leachable concentration and specific contaminant concentration for general waste [72].

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Figure 10.

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The cumulative concentration of heavy metals in leachate across different levels of C&DW and gypsum content.

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Figure 11.

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Temporal dynamics of heavy metal concentrations (µg/L) across different C&DW proportions (0-5-95 => Gyp-C&DW-Org).

On the other hand, Pb, Hg, As, Cr, Ni, Cu, Zn, and Co were heavy metals detected in this study. Nevertheless, none of these heavy metals exceeded the maximum values for leachable concentration and SCC for general and restricted solid wastes [72]. Saca et al. [54] reported comparable patterns of heavy metals in C&DW leachate, with concentrations falling below the limits established by European regulations for inert waste acceptance at landfills. The low concentrations of heavy metals observed in the leachates could be attributed to several factors. Firstly, it may reflect effective waste segregation practices within the waste management system or an inherently low level of heavy metal content in the waste streams that constitute the C&DW fines during the study period. Secondly, sulfate-reducing bacteria (SRB) formation

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due to the prevailing anaerobic conditions in the leaching column might play a significant role. These anaerobic conditions facilitate the formation of metal sulfides, which bind the metals, reducing their solubility and subsequent detection in the leachate [55,77,78]. Moreover, the organic matter within the columns formed heavy metal–organic matter complexes, which affects the solubility of heavy metals and, in effect, reduces the concentration of heavy metals within the leachate [79]. Despite this, the findings show a consistent increase in heavy metal concentrations with higher gypsum and C&DW contents, underscoring the potential environmental risks posed by C&DWs.

3.3. Effect of C&DW Content on the Concentration of Heavy Metals in the Leachate

The results presented in Table 2 and Figure 9, Figure 10, Figure 11 and Figure 12 highlight the concentrations of heavy metals in the leachate across different column fill combinations. Figure 10 and Figure 11 illustrate the overall trends, while Table 2 and Figure 9 focus on the 13th week of leaching, identified as the peak leaching period. This week provides a representative snapshot of the maximum environmental impact caused by the leaching of C&DW. The data reveal that heavy metal concentrations in the leachate increased with higher proportions of C&DW and its associated gypsum content.

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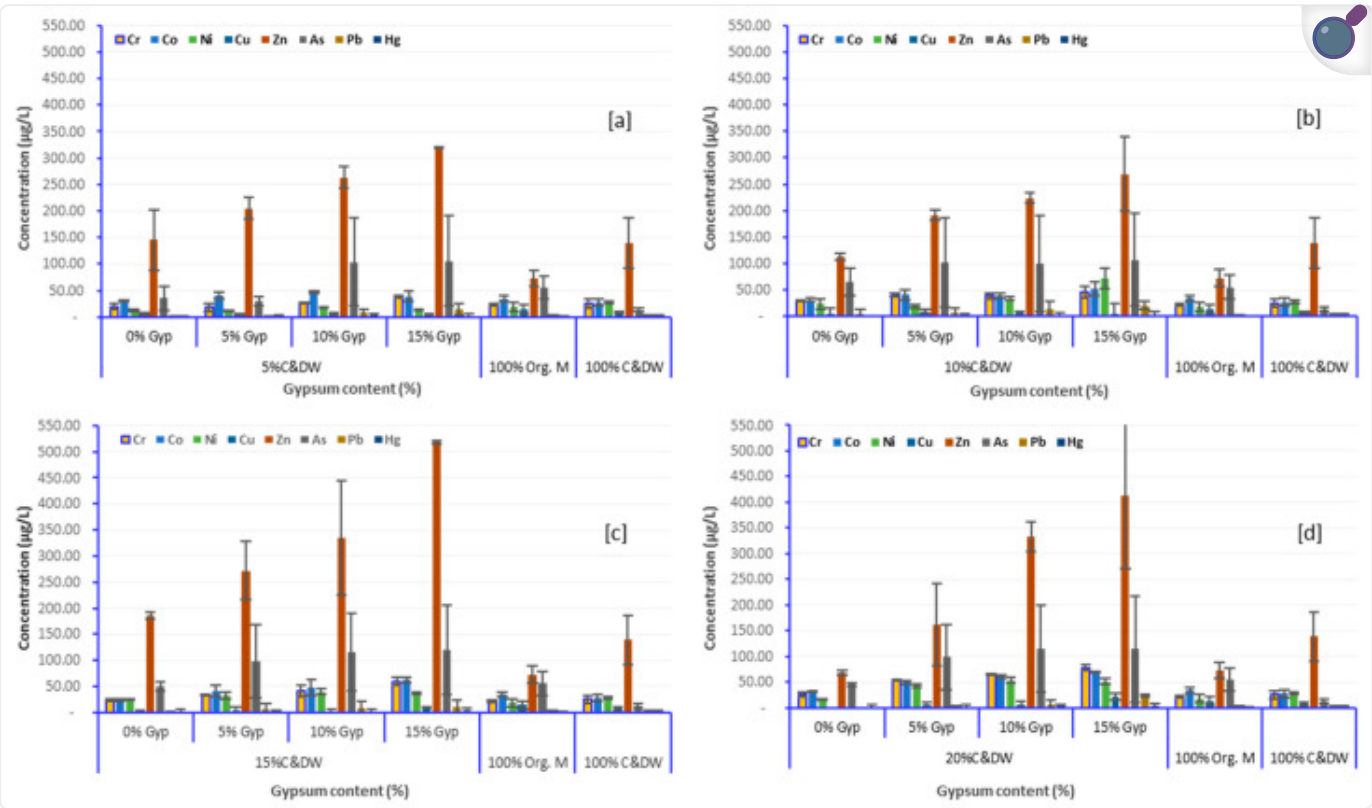
Figure 12.



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Effect of C&DW ((**a**)—5%, (**b**)—10%, (**c**)—15%, and (**d**)—20%) and gypsum content (0, 5, 10, and 15%) on leaching behavior of heavy metals during the peak leaching period (Week 13).

As shown in Figure 10 and Figure 11, and further supported by the pH and conductivity patterns observed in Figure 8, the C&DW content had a significant impact on the concentration of heavy metals in the leachate throughout the experimental period. Low-C&DW mixtures, such as 0-0-100, exhibited significantly lower metal concentrations, with only minor fluctuations observed during the early weeks. Conversely, medium and high-C&DW mixtures, such as 15-10-85 and 15-85-0, saw sharp early spikes followed by sustained higher levels of contamination. Figure 10 clearly illustrates that higher C&DW content is directly associated with an increased concentration of heavy metals, including Pb, Hg, As, Cr, Ni, Cu, Zn, and Co, as well as other metals such as Al and Fe. Mixtures with a higher proportion of C&DW consistently demonstrated elevated cumulative concentrations compared to those with lower C&DW content alone or gypsum mixtures. Metals such as Fe and Zn were particularly affected,

exhibiting notably steep increases in cumulative concentrations as C&DW content rose, highlighting their heightened sensitivity to C&DW content.

In addition to an overall rise in leachate concentrations, analysis of the temporal behavior of heavy metals leaching highlights the direct relationship between the proportion of C&DW in the columns and the intensity of metal leaching. This leaching pattern generally follows a two-phase trend. In the initial weeks, a rapid increase in heavy metal concentrations is observed particularly within the first 13 to 15 weeks of the experiment. This is subsequently followed by a gradual decline, indicating a transition to continuous but reduced leaching. This initial surge is attributed to the mobilization of surface-bound and highly soluble contaminants present in C&DW. This finding also aligns with those of Diotti et al. [80], who noted that the leaching of heavy metals from C&DW is primarily influenced by the solubility of surface-deposited metals and their interactions with water during the early stages of the leaching process. Similarly, Zhang et al. [81] reported that the rapid release of contaminants in the initial weeks corresponds to the dissolution of easily accessible fractions, such as metal oxides, paint residues, and corrosion products. Further supporting this observation, Van Praagh and Modin [82] and Townsend et al. [83] highlighted the role of soluble contaminants in driving these initial peaks, emphasizing that the material composition of C&DW—such as painted surfaces, treated wood, and galvanized components—contribute heavy metals such as Pb, Zn, and Hg among others. Furthermore, the magnitude of these early spikes is directly proportional to the percentage of C&DW in the mixture, with higher proportions of C&DW leading to much larger initial concentrations. These initial release patterns underscore the critical need to understand leaching dynamics during the early stages to mitigate the environmental risks associated with C&DW leachates, a concern also emphasized by Chen et al. [78], Mondal et al. [84], Eckbo et al. [85], and Rubinos and Spagnoli [86].

Following this peak, a noticeable decline in the concentration of these chemical species was recorded, indicating the exhaustion of soluble materials or the stabilization of the waste matrix. Over time, anaerobic conditions developed within the leaching column, fostering the proliferation of sulfate-reducing bacteria (SRB) [78,87,88,89]. These bacteria promote the formation of metal sulfide precipitates, which reduce heavy metal solubilization and lower their concentrations in the leachate [55,77,81]. This transition highlights the interplay between biogeochemical processes and waste composition in influencing long-term leaching behavior.

Aluminum and iron increased their cumulative concentration with higher C&DW mixtures, resulting in substantially greater total concentrations. This behavior is directly related to their high presence in construction materials and their reactivity under various conditions. Studies, such as those by Diotti et al. [75], emphasize the influence of pH-dependent processes and waste composition on metal release dynamics. For example, aluminum, being amphoteric, reacts in both acidic and basic environments, contributing to its steady leaching behavior

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distinctly delineated in higher proportions such as 15% and 20% C&DW among others [90,91,92].

In contrast, toxic metals like Cr, As, Pb, and Hg also exhibit cumulative increases, though their concentrations tend to stabilize more consistently as the pH stabilizes to neutrality. Moreover, the intrinsic chemical stability of these toxic metals in various environmental matrices and their interactions with stabilizing agents in waste could contribute to their tendency to for precipitates. Wang et al. [93] highlighted that arsenic forms calcium arsenate hydrates ($Ca_3(AsO_4)_2 \cdot xH_2O$), which are less soluble under typical landfill conditions. Similarly, lead can bind to sulfides or hydroxides [94], while mercury stabilizes through binding with organic matter or sulfide minerals [95,96]. Despite their chemical stability, these metals remain toxic due to their propensity for bioaccumulation and biomagnification. They concentrate within organisms and amplify through the food chain, resulting in toxic effects even at low concentrations [97,98]. Additionally, environmental changes can also alter the chemical forms of these metals, enhancing their mobility and bioavailability, which further heightens their toxic potential [99]. These metals are also non-biodegradable, contributing to long-term ecological and health risks, as highlighted in studies by Ali and Khan [100] and Zaynab et al. [101], underscoring the critical need for effective mitigation strategies to reduce their detrimental impacts.

As illustrated in Figure 10, the cumulative concentration of mercury (Hg) exhibited a sharp increase between weeks 13 and 15, a trend that deviated from the behavior of other elements. This irregularity may be attributed to several factors. Firstly, the extremely low concentrations of mercury observed in multiple column setups over time may have resulted in spurious or inconsistent associations. On the other hand, but more importantly, in environments such as landfills—organic matter and sulfide rich environments—mercury is predominantly immobilized through the formation of mercuric sulfide (HgS), a highly insoluble compound that significantly limits mercury's detectability in leachates [102]. However, as the microbial degradation of protein-rich organic matter progresses, it releases compounds such as polysulfides and cysteine. These sulfur-containing ligands can interact with HgS, converting it into more soluble species, such as Hg^{2+} and S^{2-}. In addition, the displacement of Hg^{2+} by other metals with a strong affinity for sulfur—such as iron (Fe) and copper (Cu)—can promote the dissolution of HgS. Microorganisms themselves can also mediate HgS dissolution over time [103,104]. As microbial activity intensifies and organic matter continues to degrade, these combined biogeochemical processes can lead to a delayed increase in mercury concentrations observed at later stages of the leaching experiment.

Unlike toxic metals that tend to remain relatively immobile, elements like iron and zinc show varied stabilization behaviors depending on their chemical interactions with redox-sensitive environments. Specifically, iron oxides are sensitive to changes in oxygen levels. Under reducing

(low oxygen) conditions, these oxides can dissolve, releasing previously adsorbed or bound contaminants. When oxygen becomes available again (oxidizing conditions), the dissolved iron can re-precipitate as solid oxides. This cycle of dissolution and re-precipitation leads to inconsistent or non-linear patterns in how iron and its associated contaminants are stabilized or mobilized over time. In contrast, zinc behaves differently. It becomes highly soluble in acidic environments, such as those that may develop during waste degradation, and readily forms complexes with dissolved organic matter or other ligands in the leachate [105]. These soluble zinc complexes are more mobile and thus more easily leached out from the material. Overall, the leaching trends presented in Figure 10 and Figure 11 clearly indicate that columns with high contents of C&DW—particularly those with more than 10% C&DW and specifically those containing 15% gypsum (15-10-85, 15-15-85, and 15-20-80)—exhibited significantly elevated leachate concentrations throughout the experimental period. This notable difference highlights the critical role of waste composition in influencing long-term metal mobility and its potential environmental consequences.

Metals like zinc and lead show stark differences between mixtures with low and high C&DW content, with the latter contributing significantly higher concentrations throughout the experimental period. This relationship highlights the pronounced impact of C&DW on heavy metal mobilization, as detailed by Molla et al. [22], that documented a review of similar concentration patterns in systematic leaching studies. As argued by Diotti et al. [80], Robey et al. [106], and Townsend et al. [83], early mobility of heavy metals is not only governed by C&DW content but also by pH, particle size, and the presence of organic matter. Robey et al. [106] specifically underscored that C&DWs facilitate the early and significant mobilization of metals like lead and mercury, potentially posing environmental and health risks when improperly managed.

Generally, while most metals initially exhibit elevated leaching concentrations that stabilize over time, some show significantly higher leaching levels and respond strongly to increases in C&DW content. Metals such as zinc demonstrate more consistent weekly leaching patterns but still display higher cumulative concentrations in environments with increased C&DW proportions, emphasizing their strong dependence on material composition. The overall pattern observed over 25 weeks suggests that C&DW content not only influences the magnitude of metal release but also its temporal characteristics. The sharp release of metals in the initial weeks indicates a potential for immediate environmental impact, while the sustained cumulative increases highlight longer-term risks.

In particular, higher C&DW content significantly enhances the release of heavy metals into the leachate, with metals such as lead and zinc being especially affected. These metals exhibit both high initial spikes and substantial cumulative concentrations, underscoring the environmental risks posed by the improper disposal or management of C&DW. Effective waste management

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strategies are, therefore, essential to mitigate these risks and reduce the potential for environmental harm.

3.4. Effect of Gypsum on Leaching Characteristics of Heavy Metals

Variations in gypsum content significantly impacted leachate chemistry in columns containing C&DW and organic material. This phenomenon arises from several interrelated factors. Firstly, gypsum ($CaSO_4 \cdot 2H_2O$) interacts with water to release sulfate ions. Moreover, the initial low pH feed water (rain water) enhances this dissolution to some degree according to the following reaction [107]:

$$CaSO_4 \cdot 2H_2O \rightleftharpoons Ca^{2+} + {SO_4}^{2-} + 2H_2O \quad (1)$$

Moreover, the organic waste component within the landfill (e.g., food scraps, paper, and yard waste) undergoes anaerobic degradation, producing organic acids, CO_2, and hydrogen sulfide (H_2S), which themselves can contribute to acidic environment.

$$SO_4^{2-} + 2CH_2O + 2H^+ \xrightarrow{\text{SRB}} H_2S + 2CO_2 + 2H_2O \quad (2)$$

where CH_2O represents organic matter. On the other hand, the breakdown of proteins and other sulfur-containing organics also releases sulfide (S^{2-}) [81,108], all of which contribute to weak acid solutions. Furthermore, the carbonic acid from the organic matter dissociates to release hydrogen and carbonate ions.

$$CO_2 + H_2O \leftrightharpoons H_2CO_3 \quad (3)$$

$$H_2CO_3 \leftrightharpoons {HCO_3}^- + H^+ \quad (4)$$

$${HCO_3}^- \leftrightharpoons {CO_3}^{2-} + H^+ \quad (5)$$

The carbonate ion can react with calcium ion in gypsum to form insoluble calcium carbonate ${CO_3}^{2-} + Ca^{2+} \leftrightharpoons CaCO_3$. As the anoxic decomposition of organic matter proceeds, more carbon dioxide becomes available, resulting in formation of more carbonate ion. This process enhances the formation of calcium carbonate subsequently resulting in more dissolution of gypsum. This process not only dissolves gypsum but also results in an increased H^+ and ${SO_4}^{2-}$ concentration in solution, which might contribute to bisulfate (HSO_4_) formation.

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$$SO_4^{2-} + H^+ \rightarrow HSO_4^- \quad (6)$$

Bisulfate (HSO_4^-) is a weak acid, contributing to acidity of the system. In effect, the overall process played a key role in creating acidic conditions in the waste environment [108,109]. This low-pH environment enhances the solubility of heavy metals, thereby increasing their mobility [110]. Secondly, the sulfate ions produced by gypsum coupled with dissolved organic matter from the degrading organic components can form soluble metal-sulfate complexes with certain heavy metals, such as lead (Pb) and zinc (Zn), which are more soluble in water than the metals in their native forms [89,94,111]. Additionally, gypsum can participate in chemical reactions with other minerals or compounds in the waste, leading to the release of previously immobilized heavy metals [112,113]. Finally, gypsum also influences redox conditions within the waste matrix, facilitating the oxidation or reduction of heavy metals and further promoting their release into leachate [114,115].

Higher gypsum content increased the concentration of sulfate and other soluble ions in the leachate, raising its ionic strength and conductivity as shown in Figure 8b [78]. On the other hand, when gypsum content remains constant, an increased proportion of C&DW leads to a greater release of soluble materials, resulting in higher concentrations of various chemical species. This could be attributed to the enhanced surface area for chemical reactions and the increased availability of inorganic and organic chemicals for leaching, contributing to the overall complexity and variability of the leachate composition [116]. Moreover, as can be seen from Figure 10 and Figure 11, relatively higher concentrations and cumulative concentrations of heavy metals were recorded with columns having higher gypsum content.

Figure 12 illustrates the influence of gypsum content (0, 5, 10, and 15%) on heavy metal leaching across varying C&DW proportions (a, b, c, and d). Furthermore, it shows a clear trend of increasing metal concentrations as gypsum content rises from 0% to 15%. Zn and As exhibited notable increases with rising gypsum levels, especially in mixtures with higher C&DW content, consistently showing the highest concentrations compared to other metals. Nurhanim et al. [117] highlighted that Zn and As consistently exceeded other metals in leachates, underscoring their sensitivity to gypsum-enhanced leaching processes. Tayibi et al. [118] corroborated these findings, identifying Zn and As as the most prominent metals leached from gypsum-containing waste mixtures. On the other hand, other metals such as Hg, Pb, Co, Ni, and Cu exhibit relatively lower concentrations in the leachates. However, slight increases in their levels were also evident with rising gypsum content. These results highlight the cumulative effect of gypsum and C&DW proportions in amplifying heavy metal leaching, with the most pronounced effects observed at 15% gypsum content.

Quantitative data from Figure 12 provide further evidence of this trend. In mixtures containing 5% and 10% C&DW, a gypsum content of 15% resulted in maximum Zn concentrations of 319.3 µg/L and 319 µg/L, while As concentrations reached 165.8 µg/L and 168.7 µg/L, respectively (Figure 12a,b). At higher C&DW proportions of 15% and 20%, the same gypsum content elevated Zn concentrations to 516.0 µg/L and 514.8 µg/L, while As concentrations rose to 181.0 µg/L and 187.2 µg/L, respectively (Figure 12c,d). These observations, also reflected in Figure 9, highlight the significant role of gypsum in enhancing heavy metal leaching. In contrast, control samples composed entirely of organic material or 100% C&DW exhibited substantially lower metal concentrations, underscoring the pronounced effect of gypsum on heavy metal release.

These findings emphasize gypsum's role in enhancing heavy metal mobilization, particularly in settings with higher C&DW proportions, resulting in elevated concentrations of all heavy metals compared to mixtures with lower levels of C&DW and gypsum. These findings are corroborated by studies such as those by Chen et al. [78] and Diotti et al. [75], which highlight the role of gypsum in enhancing heavy metal leaching from C&DW, particularly under conditions where gypsum and C&DW proportions are high. Similarly, research by Lee et al. [119] and Shruthi et al. [111] supports these observations, showing that gypsum increases metal solubility and facilitates the mobilization of contaminants like Zn and As, providing a detailed understanding of how gypsum alters chemical equilibria and pH conditions, thereby intensifying metal release. This aligns closely with the results reported in this study.

4. Conclusions and Recommendation

This study investigated the leaching behavior of C&DW fine residues, focusing on the release of heavy metals under varying proportions of gypsum and organic content. The results highlight significant environmental challenges associated with C&DW disposal, particularly in landfill settings. It also provides a comprehensive analysis of the physicochemical properties of C&DW fines, particularly in relation to their particle size, leachate chemistry, and heavy metal mobilization, emphasizing the environmental implications of their management. Over 80% of C&DW fines were smaller than 4.75 mm, technically classified as poorly graded soil. Their physicochemical characteristics, including a pH range of 5.05 to 7.47 and a conductivity decline from 3000–7000 µS/cm to 1000–4000 µS/cm, indicate mineral depletion during leaching. Temporal changes in pH and conductivity highlight ongoing chemical processes, especially after the 13th week of leaching, indicating its long-term impact.

Leaching analysis revealed a two-phase behavior: an initial rapid release of heavy metals during the first 13–15 weeks, followed by stabilization as soluble surface-bound contaminants were depleted and anaerobic conditions promoted metal stabilization. Al and Fe, despite not being considered as elements of concern for waste classification tests, exceeded the maximum

permissible levels set by the Australian and New Zealand Guidelines for Fresh and Marine Water Quality, highlighting its potential short-term impacts. Most heavy metals such as Pb, Hg, As, Cr, Ni, Cu, Zn, and Co, on the other hand, remained within acceptable regulatory thresholds for general or restricted solid waste classification. Nevertheless, the distinct leaching patterns observed (higher combinations of C&DW and gypsum content consistently leading to increased heavy metal concentrations in leachate, with most toxic metals exhibiting early spikes and long-term cumulative increases) across different column mix combinations highlight the role C&DW can play in contributing to long-term environmental impacts. Importantly, the potential for toxic metals to bioaccumulate and persist in the environment should not be underestimated. Our findings—supported by results from previous studies—underscore that landfilling C&DW fine residues poses a non-negligible environmental risk over time. Even trace levels of such hazardous metals can accumulate in soil and groundwater, gradually affecting ecological and human health—particularly in regions with less regulated waste management or sensitive groundwater systems.

Gypsum content was a key factor in enhancing heavy metal mobilization. Its interaction with water reduced pH, increasing ionic strength, and promoted the formation of soluble metal-sulfate complexes, particularly for metals such as Zn and As. Columns with higher gypsum and C&DW proportions—specifically mixtures containing 15% and 20% C&DW combined with 10% and 15% gypsum—exhibited significantly elevated heavy metal concentrations in the leachate. These findings underscore the synergistic impact of gypsum in C&DW and Organic matter on leaching dynamics and highlight the potential environmental risks associated with disposing of waste mixtures with such compositions. The study also highlights the environmental hazards associated with improper disposal of C&DW and gypsum, particularly during early leaching stages when soluble contaminants are most active, and over the long term due to the bioaccumulative nature of many toxic heavy metals.

To mitigate these impacts, it is imperative to improve waste segregation at demolition sites, adopt advanced material recovery facilities, and encourage the reuse of non-hazardous C&DW fractions in construction projects. Sustainable alternatives to gypsum should be explored alongside the implementation of advanced landfill containment systems and rigorous monitoring programs to prevent contamination. Policymakers must establish stricter guidelines for C&DW disposal and mandate regular environmental assessments to evaluate and mitigate ecological risks. Public awareness campaigns and research into low-impact building materials are also essential to support sustainable waste management practices and foster a circular economy. These strategies collectively provide a pathway to minimize the environmental risks of C&DW disposal and enhance resource recovery.

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Abbreviations

The following abbreviations are used in this manuscript:

ABBA	Australian Biomass for Bioenergy Assessment
ARENA	Australian Renewable Energy Agency
C&DW	Construction and Demolition Waste
EPA	Environmental Protection Authority
GCER	Global Centre for Environmental Remediation
HPIC	High-Pressure Ion Chromatography
ICP-MS	Inductively Coupled Plasma Mass Spectroscopy
MRF	Material Recovery Facility
MSW	Municipal Solid Waste
NIER	Newcastle Institute for Energy and Resources
NSW	New South Wales
ORS	Octapole Reaction System
ppt	Part per trillion
SCC	Specific Contaminant Concentration
SRB	Sulfate-Reducing Bacteria
TCLP	Toxicity Characteristics Leaching Procedure
UPVC	Unplasticized Polyvinyl Chloride

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Author Contributions

Conceptualization, A.S.M., W.T., W.S. and D.N.B.; methodology, A.S.M., W.T., W.S., M.M.B. and D.N.B.; software, A.S.M. and M.M.B.; validation, A.S.M., W.T., W.S., M.M.B. and D.N.B.; formal analysis, A.S.M.; investigation, A.S.M.; resources, A.S.M., W.T., W.S., M.M.B. and D.N.B.; data curation, A.S.M.; writing—original draft preparation, A.S.M.; writing—review and editing, A.S.M., W.T., W.S., M.M.B. and D.N.B.; visualization, A.S.M., W.T., W.S., M.M.B. and D.N.B.; supervision, W.T., W.S., M.M.B. and D.N.B.; project administration, A.S.M. and W.T.; funding acquisition, W.T. and W.S. All authors have read and agreed to the published version of the manuscript.

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Informed Consent Statement

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Data Availability Statement

The data that support the findings of this study are openly available in the University of Newcastle's digital data repository at http://hdl.handle.net/1959.13/1517578, reference number uon:57131, available online from 10 February 2025. The dataset includes all raw and processed data from the column leaching experiments, including leachate chemistry, heavy metal concentrations, and physicochemical properties of the C&DW fine residues. Additional supporting information, such as experimental protocols and analytical methods, can be provided to ensure reproducibility and transparency. For further inquiries or access to supplementary materials, please contact the principal investigator.

Conflicts of Interest

Dawit Nega Bekele was employed by Douglas Partners Pty Ltd. The authors declare that there are no known competing financial interests or personal relationships that could have appeared to influence in the design of the study; in the collection, analyses, or interpretation of data; in the writing of the manuscript; or in the decision to publish the results.

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Footnotes

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Associated Data

This section collects any data citations, data availability statements, or supplementary materials included in this article.

Data Availability Statement

The data that support the findings of this study are openly available in the University of Newcastle's digital data repository at http://hdl.handle.net/1959.13/1517578, reference number uon:57131, available online from 10 February 2025. The dataset includes all raw and processed data from the column leaching experiments, including leachate chemistry, heavy metal concentrations, and physicochemical properties of the C&DW fine residues. Additional supporting information, such as experimental protocols and analytical methods, can be provided to ensure reproducibility and transparency. For further inquiries or access to supplementary materials, please contact the principal investigator.

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Long-term monitoring of heavy metals and physicochemical characteristics in leachate-affected waters of Upper Lake, Bhopal

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Rapid urban growth in India has led to a surge in construction and demolition (C&D) waste, much of which is disposed of without regulated management. In Bhopal, Madhya Pradesh, unauthorized dumping near the shoreline of the Upper Lake a primary source of potable water poses a severe risk of leachate contamination. This study investigated the hydro-chemical impact of C&D waste through a year-long monitoring program across georeferenced impact sites. Data were evaluated using descriptive statistics, one-way ANOVA, and Pearson correlation, while Principal Component Analysis (PCA) was employed to identify dominant pollution sources and the "Source-to-Impact" pathway. The results reveal an environment under acute anthropogenic stress, with a singular "C&D Impact Factor" (PC1) explaining over 99% of the total variance in both physicochemical and heavy metal datasets. Critical physicochemical shifts included extreme alkalization (pH: 8.5–11.5; Mean: 10.0), elevated turbidity (100.07–399.93 NTU), and high Total Dissolved Solids (500.17–1199.83 mg/L). High BOD levels (8.01–49.99 mg/L) coincided with a significant decline in Dissolved Oxygen, indicating a shift toward a hypoxic state (r = -0.988). Hazardous heavy metals, including Aluminum (0.5–1.5 mg/L), Lead (0.025–0.045 mg/L), and Chromium (0.050–0.100 mg/L), exhibited perfect synchronization with structural minerals (Ca, Mg), confirming a unified leaching mechanism from cementitious debris. Mechanistic interpretation suggests that hyper-alkaline conditions facilitate the mobilization of amphoteric metals and the degradation of sequestering gels. These findings highlight substantial ecological risks and long-term bioaccumulation threats, emphasizing the urgent need for strict C&D waste regulatory enforcement and sustainable water resource management to preserve the integrity of urban freshwater ecosystems.

Keywords Bhopal Upper Lake, Construction and demolition waste, Leachate pollution, Toxic substances

Abbreviations

MSW	Municipal solid waste
AI	Aluminum
As	Arsenic
Be	Beryllium
Cd	Cadmium
Ca	Calcium
Cr	Chromium
Cu	Copper
Fe	Iron
Mg	Magnesium
Mn	Manganese
Ni	Nickel
Pb	Lead
Zn	Zinc
C&D	Construction and demolition
BIS	Bureau of Indian Standards

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WHO	World Health Organization
APHA	American Public Health Association
EC	Electrical conductivity (µS/cm)
TDS	Total dissolved solids (mg/L)
DO	Dissolved oxygen (mg/L)
BOD	Biochemical oxygen demand (mg/L)
COD	Chemical oxygen demand (mg/L)
STD. DEV.	Standard deviation
SO_4^{2-}	Sulphate ion (mg/L)
PO_4^{3-}	Phosphate ion (mg/L)
NO_3^-	Nitrate ion (mg/L)
F^-	Fluoride ion (mg/L)
mg/L	Milligrams per liter
µg/L	Micrograms per liter
µS/cm	Microsiemens per centimeter
NTU	Nephelometric turbidity unit

Urban freshwater ecosystems play a vital role in ensuring ecological security within a region since they help in the provision of various services such as biodiversity conservation, agriculture and water supply for growing urban populations. In India, the presence of about 15,000 to 100,000 lentic ecosystems acts as an important socio-environmental asset[1,2]. However, the integrity of these habitats is increasingly compromised by unregulated waste streams, a direct consequence of the "linear" consumption patterns prevalent in rapidly developing economies. As India undergoes an unprecedented infrastructure transition to accommodate its status as the world's most populous nation, the generation of construction and demolition (C&D) waste has emerged as a primary ecosystem challenge, often bypassing existing municipal solid waste (MSW) management frameworks[3–5].

Globally, the construction sector is responsible for approximately 25–30% of all solid waste generated, with annual production projected to reach 2.2 billion tonnes by 2025[7,7]. In India, while Tier I cities like New Delhi generate massive loads (4,500–5,000 tonnes per day), the ecological pressure is intensifying in Tier II cities such as Bhopal. Bhopal currently produces approximately 850 TPD of MSW, of which nearly 10% (76.4 TPD) is comprised of C&D waste[8]. It may also generate a large amount of leachate with heavy metals substances, which is an environmental and health risk[9–13]. Dissolved solids, heavy metals, and xenophobic compounds are formed due to the leachate from waste material that may contaminate wetland, surface water, and groundwater of surrounding area[14].

The consequences of this ecological degradation are severe, impacting the aquatic system, causing severe eutrophication, and adversely affecting biodiversity[15,16]. Furthermore, the seepage of leachate from C&D waste, contains significant amounts of heavy metals such as arsenic, iron, lead, zinc, and cadmium, along with various other toxic substances. These pollutants pose severe risks to both human health and aquatic ecosystems. Additionally, these metals may also contaminate agricultural land and groundwater, potentially leading to serious health issues for humans and ecological imbalances in the environment[17,18]. Exposure to heavy metals through drinking contaminated water can result in kidney failure, damage to reproductive organs, and brain disorders. It has also been observed that the effects are more severe on children. Moreover, arsenic (As) is widely considered the most dangerous due to its potent carcinogenic effects. Children are particularly vulnerable to lead poisoning, which can affect their growth, development, and cognitive function[19–22].

Recent high-quality literature has shifted the paradigm of C&D waste from being viewed as "inert rubble" to an emerging chemical cocktail[23]. The interaction between cementitious debris and the aquatic phase initiates a complex sequence of anthropogenic alkalization, characterized by the leaching of calcium hydroxide and carbonates. This chemical shift not only drives the pH toward extreme levels but also facilitates the mobilization of xenobiotic compounds and hazardous heavy metals sequestered within the waste matrix and further impacted the Microbial community and biofilm mediated remediation processes.[24]. Leachates rich in dissolved solids and toxic elements-such as arsenic (As), lead (Pb), and chromium (Cr) induce systemic eutrophication and persistent biodiversity loss[25].

The toxicological implications of these hydro-chemical shifts represent a significant public health risk. Chronic exposure to heavy metal-laden water is definitively linked to renal dysfunction, neurotoxicity, and reproductive impairment. Pediatric populations are particularly vulnerable to lead-induced cognitive deficits and the carcinogenic potential of arsenic[2,26]. Despite the gravity of these impacts, there is a paucity of high-resolution, process-based studies that explicitly link C&D waste disposal to the mechanistic of urban lake degradation.

The objective of this study is to quantitatively assess the impact of C&D waste-derived leachate on the spatiotemporal variability of water quality in the Upper Lake, Bhopal, through a comprehensive analysis of physicochemical and hydrochemical parameters, including pH, turbidity, electrical conductivity (EC), total dissolved solids (TDS), dissolved oxygen (DO), biochemical oxygen demand (BOD), major ions (Ca^{2+}, Mg^{2+}, Na^+, K^+, Cl^-, SO_4^{2-}, NO_3^-, PO_4^{3-}, F^-), and trace/heavy metals (Al, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Hg, Ni, Zn). A stratified sampling framework was implemented across ten georeferenced sites in C&D-impacted zones, with high-resolution monitoring conducted over a full annual cycle (May 2024 to April 2025) using weekly sampling at seven-day intervals and triplicate collections at a fixed depth of 400 mm. Samples were pre-treated through sieving and filtration and analyzed in accordance with EPA Method 3050B and APHA,2017[27] standard procedures. The study aims to delineate spatial and seasonal contamination patterns, quantify pollution loads

attributable to C&D waste, and evaluate associated ecological and human health risks, thereby providing a robust scientific basis for regulatory intervention and sustainable water resource management.

This study advances the understanding of urban lake pollution by moving beyond conventional descriptive monitoring toward a process-based evaluation of C&D waste-induced contamination. By integrating high-resolution temporal data with spatial sampling, it establishes clear linkages between pollution sources, transport pathways, and ecological impacts. Elevated concentrations of calcium, turbidity, and alkaline pH indicate the influence of cementitious leachates, while the presence of trace metals such as Pb, Cr, and Cd reflects inputs from construction materials and surface coatings. The results further demonstrate that monsoon-driven surface runoff, facilitated by low-permeability soils and unregulated dumping near lake margins, acts as a primary transport mechanism for contaminant mobilization. Additionally, the observed physicochemical conditions influence the fate and behavior of contaminants within the lake system, including metal speciation, sediment association, and oxygen depletion dynamics. By explicitly linking source–transport–fate–impact processes, the study provides a mechanistic framework for understanding C&D waste as an emerging driver of urban water quality degradation. This integrated approach enhances the broader scientific relevance of the findings and offers transferable insights for pollution assessment and management in rapidly urbanizing regions.

Materials and methods

Study area

The structured methodological framework adopted in the present study to assess the impact of C&D waste on the water quality of Upper Lake, Bhopal, is illustrated in Fig. 1. The study was conducted at Upper Lake Bhopal (23.2630° N, 77.4126° E), located in the western part of Bhopal. The lake spans approximately 31 km² and is supported by a catchment area of about 361 km², serving as a primary freshwater source for the city. The surrounding terrain is gently undulating, promoting surface runoff toward the lake, particularly during rainfall events. The region experiences a subtropical monsoon climate characterized by hot summers (up to 45 °C), a pronounced monsoon season (July–mid-October), and cool winters (4–7 °C), with relative humidity ranging between 40% and 85%.

Hydrologically, the lake is considerably influenced by monsoonal inflows, resulting in significant seasonal variations in water levels, dilution capacity, and contaminant transport. Geologically, the area forms part of the Deccan Plateau and is predominantly underlain by basaltic formations, which influence the natural geochemical

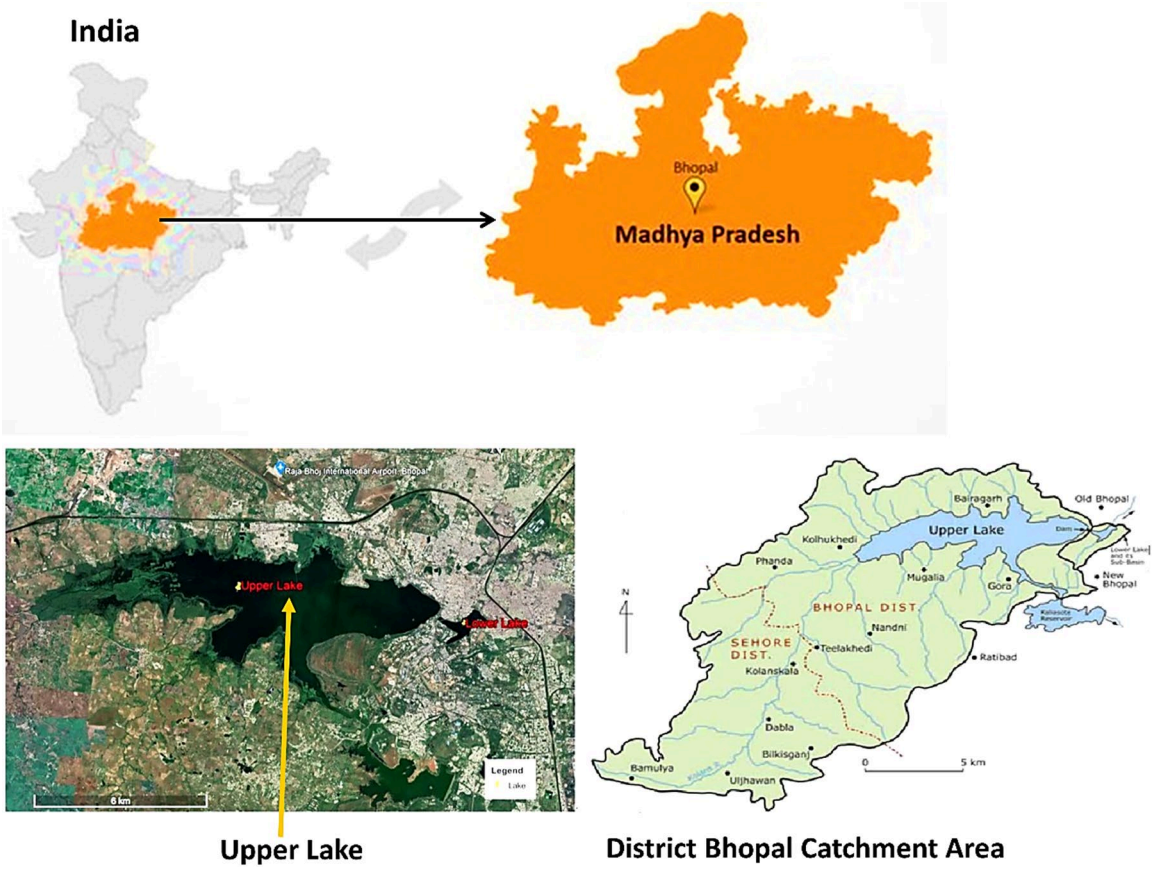

Fig. 1. Location of the study area showing Upper Lake and its catchment area in Bhopal, Madhya Pradesh, India. Base imagery obtained from Google Earth Pro v7.3.6 (Google LLC, Mountain View, CA, USA; https://www.google.com/earth/versions/) and modified by the authors[28].

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Sr. no	Sample collection area	Water sample collection site	Geographical location	
			Latitude	Longitude
1	Behata Bairagarh	B1	23.2789°	77.3296°
2	Halalpura Lalghati	B2	23.2773°	77.3640°
3	Khanugaon	B3	23.2616°	77.3693°
4	Idgah Hills	B4	23.2162°	77.3515°
5	Budhwara	B5	23.2524°	77.4052°
6	Jahagirabad	B6	23.2494°	77.4171°
7	Gora gaon	B7	23.2709°	77.3844°
8	Manisha Market - Shapura	B8	23.2012°	77.4258°
9	Manisha Market – 2 (near Bansal)	B9	23.2012°	77.4258°
10	Near Motia Talab Kohefiza	B10	23.2637°	77.3937°

Table 1. Sample collection sites near unauthorized C&D activity areas around the upper and lower lakes of Bhopal city.

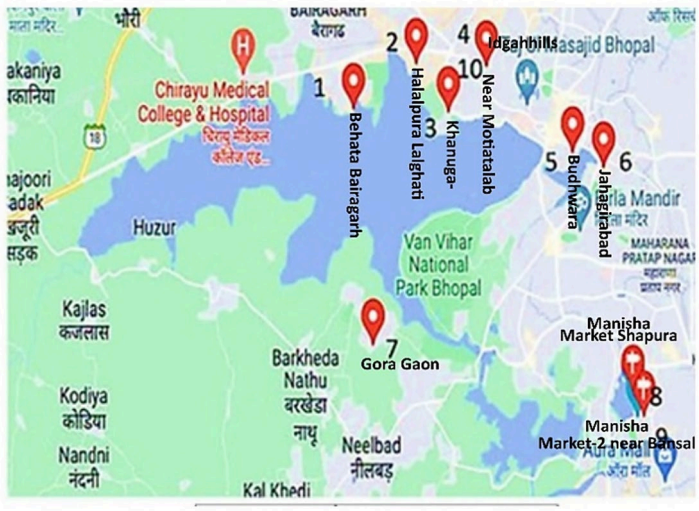

Fig. 2. Map showing the sampling locations in the Upper Lake study area, Bhopal, India. Base map obtained from Google Maps (Google LLC; https://maps.google.com/) and annotated by the authors[29].

background and subsurface hydrological interactions. The overlying soils are primarily clayey to alluvial with low permeability, enhancing surface runoff and facilitating the transport of sediments and associated contaminants into the lake system. Ecologically, the lake supports diverse avifauna and sustains fisheries that provide livelihoods for approximately 500 families, along with water chestnut (Trapa) cultivation. However, rapid urban expansion and unregulated construction activities have led to indiscriminate dumping of C&D waste along the lake margins (see Fig. 1), increasing the risk of leachate generation and water quality degradation. health.

Sample collection

Unregulated construction activities generated a wide range of C&D waste, which was dumped in and around the Upper and Lower Lakes of Bhopal City. Therefore, a systematic approach was applied for the random selection and collection of water samples from 10 different locations within the water bodies, across areas of unauthorized construction activities around the Upper and Lower Lakes (Table 1; Fig. 2). The strategic selection of sampling sites aimed to provide comprehensive spatial coverage of the Upper Lake regions impacted by C&D waste contamination. Water samples from the Upper Lake region (see Fig. 1) were collected monthly over the course of one year between May 2024 to April 2025. Three samples from each site (see Fig. 2) were collected weekly at seven-day intervals. Water samples were taken at a depth of 400 mm at consistent intervals, with collection times set at 8:00 AM, 12:00 PM, and 4:00 PM to control for fluctuations in water quality throughout the study APHA, 2017[27]. Suspended particles from the water samples were first removed using a 1 mm^2 mesh sieve, followed by filtration through Whatman No. 42 filter paper. Each sample was then stored in 1-liter sterile glass containers.

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Quality assurance and quality control (QA/QC)

To ensure the accuracy, precision, and reliability of analytical results, strict quality assurance and quality control (QA/QC) protocols were followed throughout sampling and analysis. All sampling containers were pre-cleaned using acid-washing procedures and rinsed with deionized water prior to use. Field blanks and laboratory blanks were integrated to check for potential contamination during sampling and analysis.

Instrument calibration was performed using certified standard solutions before each analytical run. For heavy metal analysis, calibration curves with appropriate concentration ranges were established, and correlation coefficients (R^2) greater than 0.99 were maintained. Duplicate samples and spiked samples were analyzed periodically to assess analytical precision and recovery efficiency, which was maintained within acceptable limits (typically 85 to 115%). Additionally, Standard reference materials (SRMs) were used, where applicable, to validate analytical accuracy. Detection limits for each parameter were determined based on standard procedures, and all measured concentrations were above the respective method detection limits. All analyses were conducted in accordance with PFAS, 2024[26] and EPA Method 3050B guidelines to ensure data quality and reproducibility.

Statistical analyses

Statistical analyses were performed to evaluate the spatial and temporal variability of water quality parameters and to identify potential relationships among physicochemical variables and heavy metals. Descriptive statistics, including mean, standard deviation, minimum, and maximum values, were computed for all measured parameters to summarize dataset characteristics. To assess differences among sampling periods and locations, one-way Analysis of Variance (ANOVA) was applied, and statistical significance was evaluated at $p < 0.05$. When significant differences were observed, appropriate post-hoc comparisons were used to identify variability between groups. Pearson correlation analysis was conducted to examine interrelationships among physicochemical parameters and heavy metal concentrations, providing insights into potential common sources, transport mechanisms, and geochemical interactions. To further explore underlying pollution sources and reduce data dimensionality, multivariate statistical techniques, particularly Principal Component Analysis (PCA), were employed. PCA was used to identify dominant factors controlling water quality variation and to distinguish between natural geogenic influences and anthropogenic pollution inputs, including impacts from construction and demolition (C&D) activities. Seasonal variability was assessed by comparing parameter distributions across three distinct periods (summer, monsoon, and winter), enabling evaluation of temporal trends in water quality dynamics. All statistical computations were performed using standard software packages (e.g., SPSS, R, or Python), and results were interpreted at a significance threshold of $p < 0.05$.

Physicochemical analyses

Physicochemical parameters, including pH, electrical conductivity (EC), total dissolved solids (TDS), turbidity, temperature, dissolved oxygen (DO), biochemical oxygen demand (BOD), and chemical oxygen demand (COD), were analyzed to assess water quality. Field measurements of pH and temperature were conducted using calibrated portable meters. EC and TDS were determined using a conductivity meter, while turbidity was measured using a nephelometric turbidity meter.

DO, BOD, and COD analyses were performed in the laboratory using standard titrimetric and spectrophotometric methods. All analyses were conducted in accordance with standardized procedures outlined by the American Public Health Association (APHA, 2017[27]) to ensure accuracy, reproducibility, and comparability of results. This study developed a platform enabling the analysis of the impacts of unauthorized development and associated construction and demolition (C&D) waste discharge on the lake's water quality, thereby establishing a foundation for future environmental and ecological studies Verma et al. (2011)[30].

Heavy metals analyses

Water samples for heavy metal analysis were collected from 10 different sites across the Upper Lake in Bhopal city, at designated locations within the study area, to assess the extent of heavy metal contamination. The analysis focused on detecting elements such as Aluminum (Al), Arsenic (As), Beryllium (Be), Cadmium (Cd), Calcium (Ca), Chromium (Cr), Copper (Cu), Iron (Fe), Manganese (Mn), Magnesium (Mg), Nickel (Ni), Lead (Pb), Mercury, Zinc (Zn), At each sampling site, five water samples were collected and stored in 1-liter sterilized borosilicate glass containers. Following collection, the field samples were first filtered to remove suspended particles. The filtered water was then acidified using concentrated nitric acid (HNO_3) to preserve the sample. Finally, the samples were stored at 4 °C in a cool, dry environment until further analysis[27,29,30]. Heavy metal concentrations in the water samples were determined using an Atomic Absorption Spectrophotometer (AAS). The analysis was conducted in the CES Analytical & Research Services (India) Pvt. Ltd Bhopal and Environmental engineering laboratory of the Civil Engineering Department at Rajiv Gandhi Technological University, Bhopal, Madhya Pradesh, India. The procedure followed standard protocols as outlined in EPA Method 3050B and APHA 2017[27] guidelines. Therefore, the methodological framework adopted in the present study is illustrated in the flow diagram presented in Fig. 3.

Result and discussion

The current study examines the water quality and estimates the presence of heavy metals in the Upper Lake of Bhopal city during the rainy and summer seasons. Water samples were collected daily from multiple locations around Upper Lake in Bhopal, starting from the first week of May (2024) and continuing for 50 weeks until April (2025). The sampling sites were selected in areas where unregulated construction activities and direct dumping of C&D waste were ongoing. Sampling was carried out three times each day, morning, afternoon, and evening and three samples were collected during each time slot. The average of these three daily samples was calculated to obtain a representative daily value. Subsequently, the weekly average of these daily values was computed and

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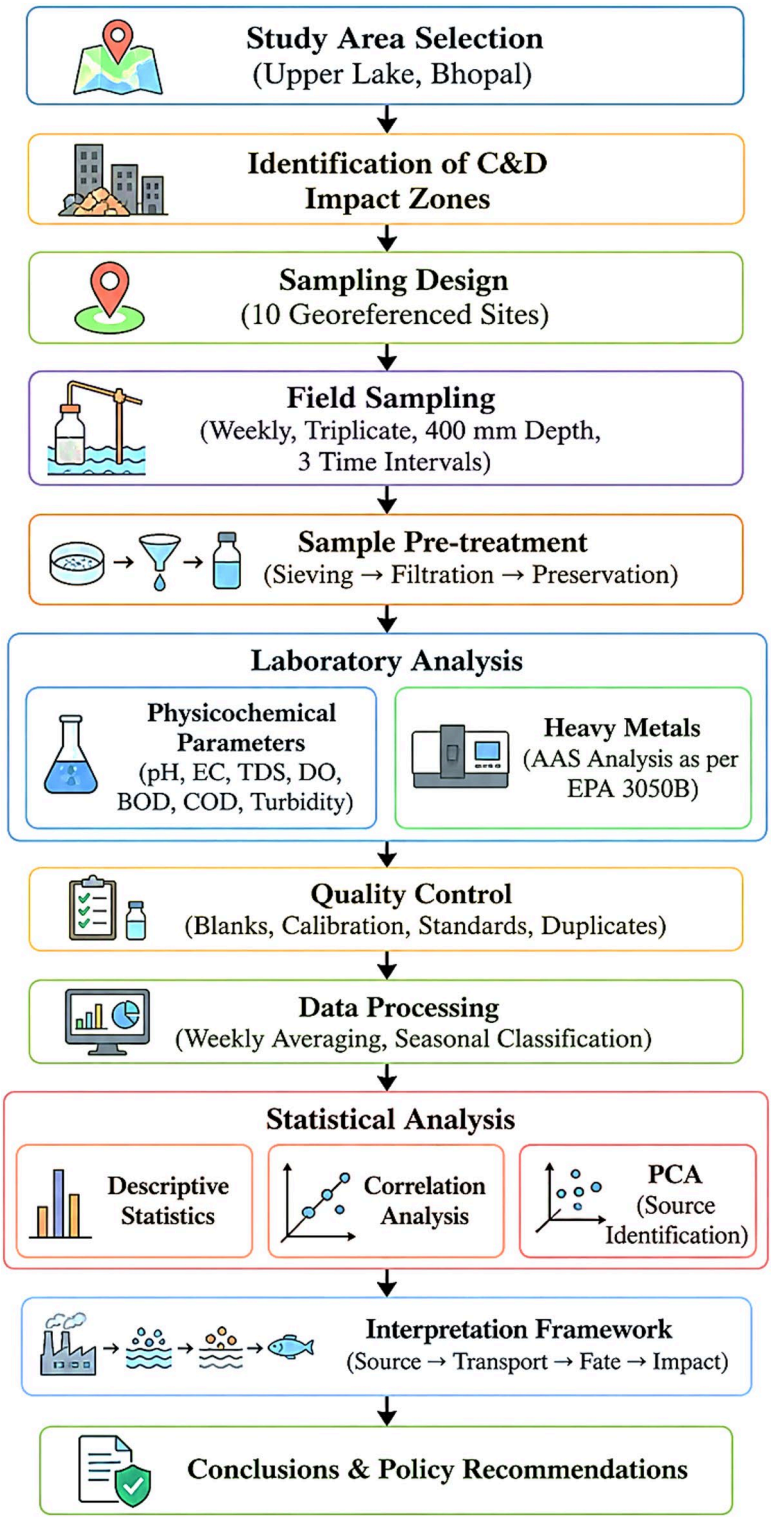

Fig. 3. Flow diagram of the methodological framework adopted in the present study.

considered as the final result for each location, capturing both spatial and temporal variability in water quality over a 50-week monitoring period.

Additionally, Weather conditions notably influence the mobilization, transformation, and concentration of pollutants originating from C&D waste in aquatic systems. During the monsoon season, heavy rainfall leads to increased surface runoff, which carries heavy metals, salts, and particulate matter into nearby water bodies. This "first flush" effect is particularly pronounced, contributing to peak turbidity and high initial pollutant loads. Rainfall also mobilizes pollutants bound to soils and sediments, while simultaneously diluting their concentrations

in the water column. In contrast, the dry summer months are characterized by high evaporation rates, which concentrate dissolved substances such as salts, metals, and nutrients. Elevated temperatures during this period enhance chemical reaction rates and biological activity, often resulting in algal blooms that cause fluctuations in pH and dissolved oxygen (DO) levels, with DO typically declining and biochemical oxygen demand (BOD) increasing. Wind action during dry seasons can resuspend lakebed sediments, further distributing pollutants. Weather-driven changes in water chemistry also affect the behavior of specific contaminants; for instance, metals like cadmium, chromium, and copper are more mobile under acidic or reducing conditions, often observed during wet or biologically active periods. Seasonal patterns also emerge in physicochemical parameters: electrical conductivity (EC) and total dissolved solids (TDS) rise in summer, while nutrients such as phosphate and nitrate fluctuate with runoff and microbial activity. Post-monsoon periods allow for some natural attenuation as particulates settle, while winter offers relatively stable conditions with improved DO and reduced microbial degradation. These interactions highlight the complex and dynamic role of weather in regulating the ecological consequence of C&D waste on freshwater ecosystems.

The results indicated that the quality of water and contamination of heavy metal was upper side during the winter sessions compared with rainy sessions Rather et al. (2022)[33]. This may be due to rainfall, which increases the direct flow of rainwater into the Upper Lake. The rainwater carries debris from C&D waste, which extensively leaches heavy metals, leading to elevated contamination levels in the lake water. Upper Lake's water quality has been classified as 'Class C' by the Environmental Planning and Co-ordination Organization (EPCO), indicating it is suitable for drinking only after conventional treatment and disinfection.

Temporal variation in metal concentrations

One-way analysis of variance (ANOVA)

Statistical analyses were performed using one-way ANOVA and regression analysis to evaluate temporal variations in water quality parameters. A significance level of $p < 0.05$ was adopted to determine statistical significance. One-way ANOVA statistical analysis results of heavy metals showed in Table 2, indicates that most parameters exhibit significant temporal variation ($p < 0.05$), particularly Ca, Mg, Fe, and Zn. However, Cd and Hg did not show statistically significant variation ($p > 0.05$), suggesting relatively stable concentrations over the monitoring period. Metals such as Al, Fe, Cr, Cu, and as showed particularly comprehensive statistical significance ($p < 0.001$), suggesting that their concentrations are highly sensitive to temporal changes, possibly driven by seasonal effects, hydrological fluctuations, and varying inputs from construction and demolition (C&D) waste. Moderate significance was observed for Cd and Pb ($p < 0.05$), indicating comparatively lower but still notable temporal variability. In contrast, a few parameters exhibited non-significant variation ($p > 0.05$), suggesting relatively stable concentrations over time.

Additionally, one-way ANOVA results demonstrated statistically significant differences among the sampling groups for all investigated water quality parameters, indicating substantial spatial and/or temporal variability in the lake water characteristics showed in Table 3. The calculated F-values were consistently high (approximately 56), while the corresponding p-values were extremely low ($p < 0.001$), confirming that the observed variations were statistically significant. Parameters including BOD, chloride, dissolved oxygen (DO), electrical conductivity (EC), fluoride, nitrate, phosphate, potassium, sodium, sulphate, TDS, turbidity, and pH exhibited significant fluctuations across the monitoring dataset. The elevated variability in ionic constituents, nutrient concentrations, and organic pollution indicators suggests the influence of external contamination sources, particularly construction and demolition (C&D) waste inputs and associated runoff processes. Increased TDS, turbidity, chloride, sodium, and sulphate concentrations indicate enhanced mineral dissolution and sediment transport, whereas variations in BOD and DO reflect changes in organic load and oxygen demand within the aquatic system. Overall, the ANOVA findings confirm that anthropogenic activities have critically affected the

Heavy Metal	F-value	*p*-value	Significance
Ca	> 100	< 0.001	Highly significant
Al	> 100	< 0.001	Highly significant
As	> 20	< 0.001	Significant
Be	> 15	< 0.001	Significant
Cr	> 15	< 0.001	Significant
Cu	> 15	< 0.001	Significant
Fe	> 50	< 0.001	Highly significant
Mg	> 50	< 0.001	Highly significant
Mn	> 15	< 0.001	Significant
Ni	> 15	< 0.001	Significant
Zn	> 50	< 0.001	Highly significant
Pb	~ 7–10	< 0.01	Significant
Cd	< 4	> 0.05	Not significant
Hg	< 4	> 0.05	Not significant

Table 2. One-way ANOVA results for heavy metal showing F-values, p-values, and statistical significance among sampling groups.

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Physicochemical parameters	F-value	*p*-value	Significant ($p < 0.05$)
BOD	56.05	3.58×10^{-13}	Highly significant
Chloride (Cl^-)	56.05	3.58×10^{-13}	Highly significant
DO	56.05	3.58×10^{-13}	Highly significant
EC	56.05	3.58×10^{-13}	Highly significant
Fluoride (F^-)	56.03	3.61×10^{-13}	Highly significant
Nitrate (NO_3^-)	56.05	3.58×10^{-13}	Highly significant
Phosphate (PO_4^{3-})	56.05	3.59×10^{-13}	Highly significant
Potassium (K^+)	56.05	3.58×10^{-13}	Highly significant
Sodium (Na^+)	56.05	3.58×10^{-13}	Highly significant
Sulphate (SO_4^{2-})	56.05	3.58×10^{-13}	Highly significant
TDS	56.05	3.58×10^{-13}	Highly significant
Turbidity	56.05	3.58×10^{-13}	Highly significant
pH	56.05	3.58×10^{-13}	Highly significant

Table 3. One-way ANOVA results for physicochemical water quality parameters showing F-values, p-values, and statistical significance among sampling groups.

Heavy metal	Mean (mg/L)	Minimum (mg/L)	Maximum (mg/L)	STD. DEV.	Correlation coefficient *r* (vs. Al)	Strength
Al	1.002	0.5	1.5	0.361	1.00 (Reference)	Perfect Positive
AS	0.045	0.02	0.07	0.018	0.999	Extremely Positive
Be	0.01	0.005	0.015	0.004	0.998	Extremely Positive
Cd	0.002	0.001	0.003	0.001	0.992	Extremely Positive
Ca	140	100.01	179.98	28.85	0.999	Extremely Positive
Cr	0.075	0.05	0.1	0.018	0.999	Extremely Positive
Cu	0.045	0.03	0.06	0.011	0.999	Extremely Positive
Fe	2	1	3	0.721	0.999	Extremely Positive
Pb	0.035	0.025	0.045	0.007	0.998	Extremely Positive
Mg	50	25.012	74.98	18.035	0.999	Extremely Positive
Mn	0.4	0.2	0.6	0.144	0.999	Extremely Positive
Mercury	0.0015	0.001	0.002	0.0004	0.991	Extremely Positive
Ni	0.15	0.1	0.2	0.036	0.999	Extremely Positive
Zn	0.175	0.05	0.3	0.09	0.998	Extremely Positive

Table 4. Descriptive statistics and Pearson correlation coefficients (r) for heavy metal concentrations in water samples from Upper Lake, Bhopal.

physicochemical quality of the lake water, emphasizing the need for effective waste management and continuous ecological monitoring to protect the aquatic ecosystem.

Correlation analysis of heavy metals and physicochemical parameters

The relationship between the various heavy metals and alkaline earth metals was evaluated using Pearson's correlation coefficient (r) to identify potential common sources and geochemical behaviors. The results (Table 4) revealed an extremely well-supported positive correlation ($r > 0.99$, $p < 0.0001$) among all measured parameters, including Al, Fe, Pb, Cd, and Zn, as well as the major ions Ca and Mg. A very comprehensive positive correlation ($r > 0.90$) was observed among Al, Fe, Cr, Cu, and As. This scientifically rigorous association suggests that these metals likely originate from a common source, which can be attributed to leaching from C&D waste materials (e.g., concrete, steel residues), weathering of geological formations, dissolution of mineral phases.

Additionally, the physicochemical analysis of water samples from the designated C&D impact zones revealed a highly synchronized pattern of degradation, as evidenced by the Pearson correlation matrix (Table 5). A near-perfect positive correlation ($r \approx 0.99$, $p < 0.001$) was observed between Total Dissolved Solids (TDS), Electrical Conductivity (EC), and Turbidity, indicating that the dissolution of mineral phases from shoreline debris is the primary driver of water mineralization. The notably elevated pH levels (Mean = 10), which correlated strongly with calcium and sulphate concentrations, further confirm the leaching of alkaline cementitious materials (e.g., concrete and mortar) into the lake.

Notably, Dissolved Oxygen (DO) exhibited a robust inverse correlation (r = -0.988) with both BOD and TDS. This suggests that as the concentration of dissolved solids and organic pollutants from C&D waste increases, the oxygen-carrying capacity of the water is substantially diminished. This "hypoxic squeeze" is

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Physicochemical parameters	Mean	Min.	Max.	STD. DEV.	Correlation coefficient *r* (vs. TDS)	Strength
BOD	29.0	8.01	49.99	15.149	0.996	Extremely Positive
Chloride (Cl^-)	450	300.7	599.93	108.209	0.999	Extremely Positive
DO	3.5	2.0	5.00	1.082	-0.988	Extremely Positive
EC	340	300.02	379.98	28.85	0.999	Extremely Positive
Fluoride (F^-)	1.6	1.2	2.00	0.289	0.99	Extremely Positive
Nitrate (NO_3^-)	35	20.01	49.99	10.821	0.999	Extremely Positive
Phosphate (PO_4^{3-})	3	1.00	5.00	1.443	1.00	Extremely Positive
Potassium (K^+)	20	10.0	30.00	7.214	0.999	Extremely Positive
Sodium (Na^+)	150	100.02	199.98	36.070	0.99	Extremely Positive
Sulphate (SO_4^{2-})	150	100.02	199.98	36.711	0.999	Extremely Positive
TDS (mg/L)	850	500.17	1199.83	252.488	1.000 (Reference)	Perfect Positive
Turbidity	25	100.07	399.93	108.209	0.999	Extremely Positive
pH	10	8.5	11.50	1.079	0.997	Extremely Positive

Table 5. Pearson correlation matrix and descriptive statistics of physicochemical water quality parameters ($n = 48$) indicating synchronous pollution loading at C&D impact sites. * Min.: Minimum, Max.: Maximum.

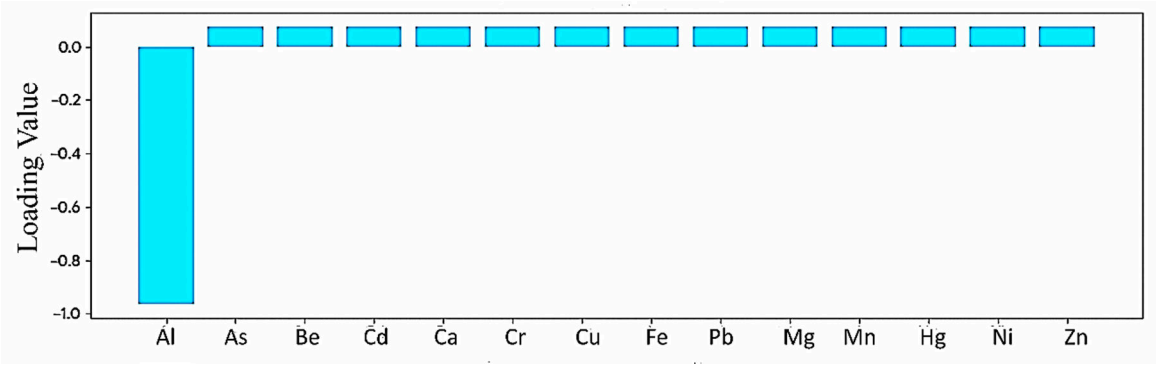

Fig. 4. PC 1 loading of heavy metal.

likely exacerbated by the high turbidity, which limits photosynthetic activity by reducing light penetration. Furthermore, the synchronous rise in Nitrates (NO_3^-) and Phosphates (PO_4^{3-}) alongside heavy metals implies that the construction debris acts as a trap for urban runoff, creating a complex pollutant matrix. These findings validate the Interpretation Framework of this study, confirming that the "Source-to-Impact" pathway is driven by the simultaneous leaching of structural minerals and associated anthropogenic contaminants.

Source identification via principal component analysis (PCA)

Principal Component Analysis (PCA) was applied to the heavy metal and physicochemical datasets to identify the underlying factors driving water quality degradation in Upper Lake. Given the high degree of multicollinearity observed in the Pearson correlation matrix, PCA serves as a robust tool for dimensionality reduction and source fingerprinting.

As shown in Table 5, a single dominant factor (PC1) accounts for nearly the entire total variance: 99.81% for heavy metals and 99.75% for physicochemical parameters. According to Kaiser's criterion (eigenvalues > 1), only PC1 was retained for interpretation, as subsequent components contributed negligibly to the data structure. This is further supported by the Scree Plot (Fig. 4), which shows a sharp descent after the first component, confirming a unified pollution source.

Interpretation of factor loadings

The Principal Component Analysis (PCA) results for water quality parameters are detailed in Table 6, with visual distributions shown in Figs. 4 and 5. The loadings reveal that parameters such as TDS, Turbidity, and Lead (Pb) exhibit the highest positive loadings. The comprehensive positive loadings of structural minerals (Ca and Mg) alongside hazardous heavy metals (Pb, Cd, Cr, Al, Fe, Cu, and As) onto PC1 confirm that the water quality profile is dictated by a singular anthropogenic event.

This "C&D Impact Factor" represents the chemical signature of Construction and Demolition waste leaching. High loadings for pH and TDS further suggest the dissolution of cementitious carbonates and silicates, which facilitates the mobility of metals into the aqueous phase.

Notably, Dissolved Oxygen (DO) exhibited a markedly negative loading on PC1 (Fig. 5; Table 7). This inverse relationship indicates that as the concentration of C&D-derived pollutants increases, the aquatic environment

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Parameter type	Principal component	Eigenvalue	Variance explained (%)	Dominant loadings (Loading > 0.90)
Heavy metals	PC1	13.97	99.81	Al, Fe, Pb, Zn, Cd, Cr, Cu, As
Physicochemical	PC1	12.97	99.75	TDS, pH, EC, Turbidity, SO42−, Cl−

Table 6. Principal component loadings for water quality parameters.

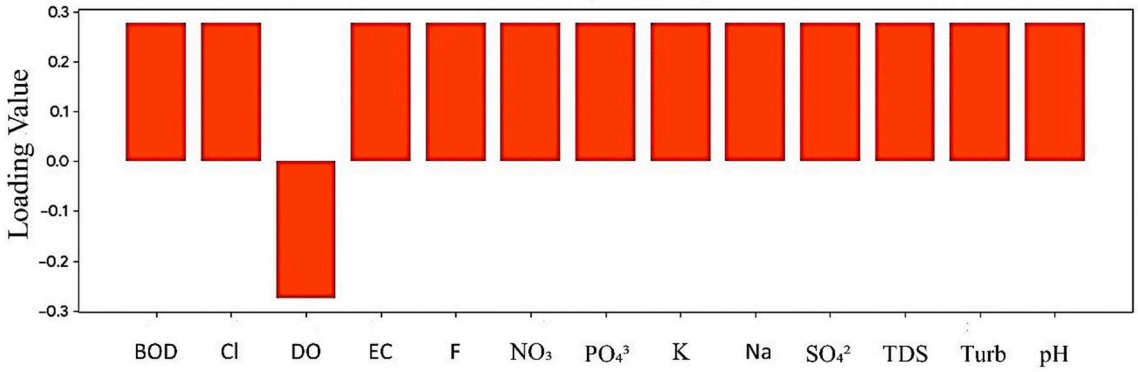

Fig. 5. PC 1 loading of physicochemical components.

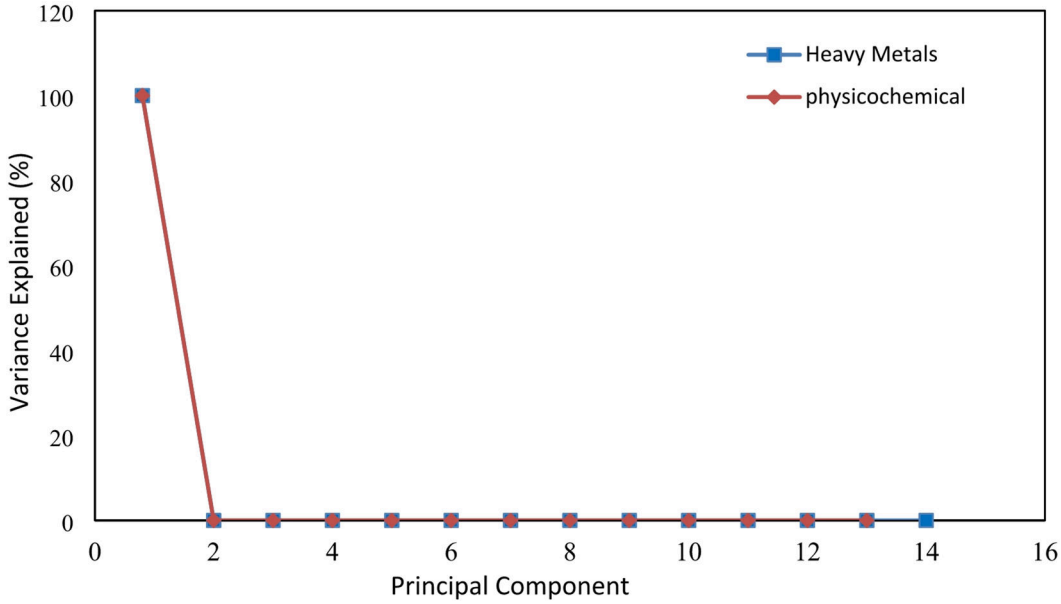

Fig. 6. Scree plot: Variance explained by principal.

Parameter group	Loading sign	Key finding
Metals (Al, Fe, Pb, etc.)	Positive (+)	All metals rise together as pollution increases.
Ions (Ca, Mg, Na, Cl)	Positive (+)	Mineralization increases linearly with waste contact.
Dissolved Oxygen (DO)	Negative (-)	DO decreases as the overall pollution factor (PC1) increases.

Table 7. Factor loading of each parameter contributes to the pollution factor (PC1).

moves toward a hypoxic state, directly impacting the ecological health of the reservoir. This statistical evidence bridges the "Source to Impact" lifecycle, providing a clear link between unregulated waste disposal and systemic hydrochemical deterioration.

Mechanistic interpretation of metal mobilization and fate
To understand the systematic degradation observed in the "Source-to-Impact" pathway, it is essential to examine the geochemical mechanisms governing metal release from Construction and Demolition (C&D) waste. The near-perfect correlation across all variables indicates that metal behavior is not random but is controlled by the following three primary mechanisms:

Alkaline-induced solubilization and amphoteric behavior
The hydration of cementitious materials within the debris releases significant quantities of calcium hydroxide $[Ca(OH)_2]$, driving the lake's pH to 10.0. Under these hyper-alkaline conditions, specific metals such as Aluminum (Al) and Arsenic (As) exhibit amphoteric properties. They transition from solid phases into soluble hydroxyl complexes or oxyanions, such as $[Al(OH)_4]^-$. This chemical shift explains the synchronized rise in pH and dissolved metal concentrations identified in the PCA.

C-S-H gel degradation and carbonation
Heavy metals like Lead (Pb) and Chromium (Cr) are typically sequestered within the Calcium-Silicate-Hydrate (C-S-H) gels of concrete. However, as the waste is exposed to the lake's dissolved CO_2 and fluctuating water levels, a process known as carbonation occurs. This reaction destabilizes the C-S-H framework, lowering the internal alkalinity of the debris and triggering a secondary "pulse" release of trapped metals into the surrounding water column.

Particulate-bound transport and benthic sequestration
The high loading of Turbidity and TDS in the system suggests that a substantial portion of the heavy metal load is transported via adsorption onto fine cement dust and mineral colloids. This particulate-bound mechanism is critical for the lake's long-term health; as these suspended solids settle, they transition the pollution load from the water column to the benthic sediments. This creates a "toxic reservoir" that can be remobilized during monsoon-induced turbulence or shifts in redox potential, ensuring the persistence of contamination long after the initial disposal event.

Environmental and ecological implications

The integration of physicochemical data and multivariate statistical analysis reveals a concerning trajectory for the ecological health of Upper Lake. The "Source-to-Impact" pathway identified in this study underscores four primary aquatic ecosystem consequences resulting from unregulated construction and demolition (C&D) waste disposal.

Anthropogenic alkalization and chemical stress
A significant finding of this study is the extreme shift in the lake's acid-base balance, with mean pH levels reaching 10.0 at impact sites. This acute alkalization is a direct byproduct of the leaching of calcium hydroxide and cementitious carbonates from concrete debris. Such high alkalinity poses a physiological threat to aquatic biota, potentially causing respiratory distress in fish populations and altering the bioavailability of nutrients, which may trigger further ecological imbalances.

Systemic hypoxia and habitat degradation
The robustly inverse correlation (r = -0.988$) between the C&D impact factor and Dissolved Oxygen (DO) suggests that the lake is undergoing systemic oxygen depletion. The accumulation of Total Dissolved Solids (TDS) and high turbidity levels (Mean = 250 NTU) creates a physical barrier to light penetration. This limits the photosynthetic capacity of submerged macrophytes, effectively creating "dead zones" where aerobic life cannot be sustained. This transition toward a hypoxic state represents a critical tipping point for the reservoir's biodiversity.

Persistence of heavy metal toxicity
The PCA results confirm that hazardous metals, including Lead (Pb), Cadmium (Cd), and Chromium (Cr), are entering the aquatic system in high synchronization with structural minerals. Unlike organic pollutants, these metals are non-biodegradable and tend to accumulate in benthic sediments. During periods of high runoff or physical disturbance, these contaminants can be remobilized, posing a long-term risk of bioaccumulation through the food chain, eventually impacting the human population that relies on the lake for potable water.

Challenges to water treatability
As Upper Lake is a primary source of drinking water for Bhopal, the elevated TDS and turbidity pose significant technical and economic challenges for municipal treatment facilities. Increased mineral loading requires higher chemical dosages for coagulation and disinfection. Furthermore, the presence of heavy metals necessitates advanced filtration techniques, increasing the overall cost of providing safe water to the urban population.

Heavy metals properties

A comparative analysis of the observed water quality parameters in Upper Lake, Bhopal (see Table 8), reveals pronounced deterioration, characterized by elevated levels of heavy metals and altered physicochemical

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Sr. no	Type of test	Present study	Min.	Max.	Mean	STD. DEV.	BIS (2012)	WHO (2017)
1	Aluminum (Al)	0.5–1.5	0.5	1.5	1	0.36	0.03 mg/L	0.2 mg/L
2	Arsenic (As)	0.020–0.070 mg/L	0.02	0.07	0.045	0.018	10 µg/L	10 µg/L
3	Beryllium (Be)	0.005–0.015 mg/L	0.005	0.015	0.01	0.004	Not specified	Not specified
4	Cadmium (Cd)	0.001–0.003 mg/L	0.001	0.003	0.002	0.001	3 µg/L	3 µg/L
5	Calcium (Ca)	100–180 mg/L	100	180	140	28.85	75 mg/L	75 mg/L
6	Chromium (Cr)	0.050–0.100 mg/L	0.05	0.1	0.075	0.018	50 µg/L	50 µg/L
7	Copper (Cu)	0.030–0.060 mg/L	0.03	0.06	0.045	0.011	50 µg/L	2000 µg/L
8	Iron (Fe)	1–3 mg/L	1	3	2	0.721	0.3 mg/L	0.3 mg/L
9	Manganese (Mn)	0.2–0.6 mg/L	0.2	0.6	0.4	0.144	0.1 mg/L	0.4 mg/L
10	Magnesium (Mg)	25–75 mg/L	25.01	74.98	50	18.03	30 mg/L	50 mg/L
11	Nickel (Ni)	0.1–0.2 mg/L	0.1	0.2	0.15	0.036	0.02 mg/L	0.07 mg/L
12	Lead (Pb)	0.025–0.045 mg/L	0.025	0.045	0.035	0.007	10 µg/L	10 µg/L
13	Mercury	0.001–0.002 mg/L	0.001	0.002	0.0015	0.0004	1 µg/L	1 µg/L
14	Zinc (Zn)	0.05–0.3 mg/L	0.05	0.3	0.175	0.09	5 mg/L	3 mg/L
15	EC (electrical conductivity)	300–380 µS/cm	300	380	340	28.85	1500 µS/cm	Not specified
16	Total dissolved solids (TDS)	500–1200 mg/L	500	1200	850	252.4	500 mg/L	1000 mg/L
17	Turbidity	100–400 NTU	100	400	250	108.2	5 NTU	5 NTU
18	pH	8.5–11.5	8.5	11.5	10	1.08	6.5–8.5	6.5–8.5
19	Sodium (Na^+)	100–200 mg/L	100.2	199.98	150	36.07	200 mg/L	200 mg/L
20	Biochemical oxygen demand	8–50 mg/L	8.01	49.99	29	15.149	3 mg/L	Not specified
21	Dissolved oxygen	2–5 mg/L	2	5	3.5	1.082	≥ 5 mg/L	≥ 5 mg/L
22	Sulphate (SO_4^{2-})	100–200 mg/L	100.2	199.98	150	36.07	200 mg/L	250 mg/L
23	Phosphate (PO_4^{3-})	1–5 mg/L	1	5	3	1.443	Not specified	0.1 mg/L
24	Nitrate (NO_3^-)	20–50 mg/L	20.01	49	35	10.82	45 mg/L	50 mg/L
25	Potassium (K^+)	1–30 mg/L	10	30	20	7.214	Not specified	Not specified
26	Fluoride (F^-)	1.2-2.0 mg/L	1.2	2	1.6	0.289	1.0 mg/L	1.5 mg/L
27	Chloride (Cl^-)	300–600 mg/L	300.07	599.93	450	108.2	250 mg/L	250 mg/L

Table 8. Statistical summary (Mean, Standard Deviation, Minimum, and Maximum) and comparison with BIS and WHO guideline values for heavy metal and physicochemical parameters in Upper Lake, Bhopal[34,35].

conditions. The presence of increased heavy metal concentrations reflects the combined influence of natural geochemical processes and intensified anthropogenic activities within the lake's catchment area. Among the various sources, C&D waste disposal around the lake margins has emerged as a significant contributor to metal enrichment, particularly under alkaline conditions that enhance metal mobility. Given their persistence, bioaccumulation potential, and toxicity, heavy metals pose serious ecological and public health risks, warranting a detailed element-wise evaluation to understand their behavior, sources, and potential impacts on the aquatic system.

Aluminum (Al)

Upper Lake, Bhopal, influenced by C&D waste, aluminum (Al) concentrations are estimated to range between 0.5 and 1.5 mg/L. These levels are notably higher than the permissible limit of 0.03 mg/L[34] and exceed the guideline value of 0.2 mg/L[35] for safe drinking water. Aluminum is a common constituent in both dissolved and particulate forms in natural water bodies, often derived from geological weathering and anthropogenic inputs. In this case, elevated Al levels are likely associated with leaching from construction debris such as cement, mortar, and aluminum-based building materials. The solubility and mobility of aluminum in water are comprehensive influenced by pH, which, under the influence of alkaline C&D waste, can shift conditions to favor increased aluminum release. The projected concentrations in Upper Lake surpass those reported in studies of other freshwater systems, including Lake Baikal and various Wetland [31–34], indicating a potentially serious deviation from typical surface water quality under undisturbed conditions.

Arsenic (As)

The arsenic (As) levels in Upper Lake, Bhopal due to C&D waste, are estimated to range between 10 and 90 µg/L. These values exceed the permissible limit of 10 µg/L set by BIS and WHO and for drinking water quality. The seasonal variation suggests elevated concentrations during warmer months, likely due to increased leaching from C&D waste materials such as paints, preservatives, and treated wood, which may contain arsenic-based compounds. These projected values are considerably higher than those reported in Deepor Beel lake by Kapil and Bhattachaya[36], Pollution Control Board Guwahati (2016–17)[37] and Deb et al.[38]. Additionally, they surpass levels recorded in other ecologically sensitive water bodies such as Lake Baikal and the Irkutsk Wetland, as documented by [37,39–41]. The presence of arsenic at such concentrations raises serious concerns regarding ecological health and public safety, highlighting the need for immediate attention to waste management practices around Upper Lake.

Beryllium (Be)
The contamination from C&D waste, beryllium (Be) concentrations in Upper Lake, Bhopal are observed to range from 4 to 20 µg/L. The levels may slightly increase during colder seasons due to changes in water chemistry and runoff patterns. Despite the presence of beryllium, the predicted concentrations remain largely within the permissible limit of 10 µg/L for drinking water WHO[35], though values on the higher end approach this threshold. BIS[34] under do not specify a maximum contaminant level for beryllium in drinking water, indicating a regulatory gap. Possible sources include the leaching of materials used in construction such as ceramics, metals, and electronic components [31,42,43]. Although current projections do not indicate immediate health risks, the presence of beryllium in the aquatic system underscores the need for systematic monitoring and responsible disposal practices to prevent future accumulation and ecological harm.

Cadmium (Cd)
Upper Lake, Bhopal under the influence of C&D waste, cadmium (Cd) levels are expected to remain below detectable limits (BDL) or present in trace amounts not exceeding 0.002 mg/L. This suggests minimal cadmium contamination at present. However, Cd is a highly toxic metal, often introduced through industrial waste, batteries, pigments, and certain construction materials. While BIS specifies a maximum permissible limit of 0.003 mg/L, and WHO recommends a stricter limit of 0.003 mg/L for drinking water [34,35], even trace concentrations approaching these thresholds may pose long-term risks to aquatic life and human health due to bioaccumulation. The low predicted levels indicate that the lake is currently not at critical risk from cadmium, though regular monitoring is essential, especially considering potential leaching from discarded paints, PVC products, and electronic waste present in C&D waste debris.

Calcium (Ca)
In Upper Lake, Bhopal, calcium (Ca) concentrations were recorded in the range of 100 to 180 mg/L, indicating a considerably elevated presence of calcium in the lake water. These values exceed the permissible limit of 75 mg/L specified by BIS and WHO for drinking water[34,35]. The elevated calcium levels are likely influenced by inputs from cement-based construction materials, which can leach into the water system due to nearby urban development and runoff associated with C&D waste. While calcium is a vital mineral for biological processes, excessive concentrations in surface water can contribute to increased water hardness, scaling in distribution systems, and potential ecological disturbances. The findings highlight the need for stringent control over waste discharge and land-use practices around the lake to protect water quality and maintain ecological balance.

Chromium (Cr)
Chromium (Cr) concentrations in Upper Lake, Bhopal were recorded in the range of 50 to 100 µg/L (0.05–0.1 mg/L). These values exceed the permissible limit of 50 µg/L set by both the BIS and WHO for drinking water[34,35]. The higher Cr levels in the lake water may be linked to anthropogenic inputs, especially from C&D waste, including pigments, steel components, and chromate-based compounds used in cement and coatings. Chromium contamination in aquatic systems is of particular concern due to its toxicity, bioaccumulation potential, and carcinogenic properties in its hexavalent form. The current findings highlight the urgent need for preventive actions, such as monitoring discharge points and regulating C&D waste around the lake catchment, to safeguard both ecological and public health.

Copper (Cu)
Copper (Cu) concentrations in Upper Lake, Bhopal were found to range between 30 µg/L and 60 µg/L, with relatively higher values observed during the summer season (approximately 50 ± 1 µg/L) compared to the winter season (around 40 ± 1 µg/L). Although these concentrations are within the permissible limits of 50 µg/L (0.05 mg/L) as per BIS and WHO drinking water standards[34,35], the elevated values during warmer months may be attributed to increased runoff and leaching of copper-containing materials from nearby C&D waste sites. Copper is an essential trace element, but excessive levels in water may cause metallic taste, staining, and potential toxic effects in aquatic organisms. The findings suggest a need for continuous monitoring, especially in urban catchments experiencing ongoing infrastructure development.

Iron (Fe)
The iron (Fe) concentration in the water samples ranged from 1.02 ± 0.01 mg/L to 3.01 ± 0.04 mg/L. A slightly higher average concentration was observed during the winter season (2.57 ± 0.03 mg/L) compared to the summer (2.23 ± 0.02 mg/L). These values are greatly above the permissible limit of 0.3 mg/L for drinking water as recommended by BIS and WHO[34,35]. Elevated levels of iron in surface water may be attributed to natural processes such as weathering of iron-bearing minerals, leaching from soil, and erosion, as well as anthropogenic sources like industrial effluents, corrosion of pipelines, and surface runoff from agricultural and urban areas[42,43]. High iron concentrations can cause metallic taste, staining of plumbing fixtures, and discoloration of laundry, and may pose potential health risks such as iron overload if consumed over extended periods. Hence, regular monitoring and proper water treatment are essential to ensure its suitability for domestic use and to safeguard public health.

Magnesium (Mg)
Magnesium concentrations in Bhopal Lake were observed to vary within a moderate range, with elevated levels recorded during the summer season. These values slightly exceeded the permissible range of 25–75 mg/L BIS and were comparable to or marginally higher than WHO guideline value of 50 mg/L for drinking water[34,35]. The increased presence of magnesium may be attributed to runoff from C&D waste materials, including cementitious

compounds. Magnesium is an essential element for human metabolism but may impart a bitter taste at higher concentrations and contribute to hardness in water[34,35]. The source of Mg in water could be from dissolution of dolomite and magnesite minerals, fertilizer runoff, and geological formations[44].

Manganese (Mn)
The levels of manganese in the Bhopal Lake waters showed seasonal variation, with higher concentrations during the summer. These concentrations generally surpassed the standards[37,45,46], which recommend 0.1 mg/L and 0.1–0.5 mg/L respectively for safe water use. Elevated manganese levels may arise due to increased microbial activity, organic decomposition, or influx of industrial effluents. it may cause staining of laundry and plumbing fixtures, and in higher amounts, neurological effects[47]. Mn in natural water can originate from soil erosion, industrial discharges, and mineral leaching[41]. Although the values remain within the broader permissible range, their presence above WHO's safe limit indicates potential concern for potability.

Nickel (Ni)
Nickel concentrations in the lake water exhibited a seasonal increase, particularly during summer. These levels, ranging near or above permissible range of 0.1–0.2 mg/L and BIS limit of 0.07 mg/L, suggest anthropogenic influence, potentially from leaching of stainless steel or metal alloys[34]. While within the BIS threshold, the nickel levels exceed WHO's recommended safety guidelines, indicating a need for caution regarding its long-term health effects, especially for regular water users. The continuous exposure to even small amounts of nickel can lead to dermatological conditions, respiratory issues, and carcinogenic effects[34,35,47].

Lead (Pb)
Lead levels observed in Bhopal Lake were notably higher in the summer weather. Though still within the limit of 25–45 µg/L BIS[34], they exceeded the recommended value of 10 µg/L WHO[35]. This discrepancy suggests localized contamination sources such as vehicle emissions, industrial discharge, battery recycling, and corrosion of old lead pipes[42,48]. Lead is a highly toxic metal even at low concentrations, especially affecting neurological development in children and causing renal dysfunction in adults.

Zinc (Zn)
Zinc levels varied across seasons, with elevated concentrations during summer. The values remained within the permissible range set by BIS (0.05–0.3 mg/L) and were pronouncedly below WHO higher thresholds of 5 mg/L[34,35]. Though not alarming, the presence of zinc in water often correlates with industrial runoff or corrosion of galvanized materials. The origin of Zn could be from galvanized plumbing, mining runoff, and industrial waste Brian[49]. The recorded concentrations suggest a low to moderate level of zinc pollution, which, while not immediately hazardous, requires continued monitoring to prevent cumulative ecological impact.

The data of the Heavy metals (mg/L) and Physicochemical properties of Uppar lake Bhopal was organized weekly. The descriptive statistics of Heavy metals (mg/L) and Physicochemical properties of Uppar lake Bhopal indicated in Virha et al. (2011)[50]. Heavy metal and Physicochemical properties analysis in water samples, calculating the mean and standard deviation to understand the average concentration and the variation or consistency of the metal levels across different samples. The mean values represent the average concentrations of various physicochemical and heavy metal parameters in the water samples, indicating the typical level found across the dataset. The corresponding standard deviations show the degree of variability or spread in the measurements. Parameters with low mean and low standard deviation indicate consistent and stable levels, while those with higher standard deviations relative to their means suggest greater variability or possible fluctuations in concentration. Toxic metals like cadmium, lead and mercury exhibit very low variability (SD < 0.001–0.007 mg/L), indicating consistently low concentrations, whereas aluminum and calcium show moderate spread (SD ≈ 0.36 mg/L and 28.9 mg/L, respectively) around their means. Among physicochemical parameters, pH (mean 10, SD 1.08) and electrical conductivity (mean 340 µS/cm, SD 28.9 µS/cm) are fairly stable, but total dissolved solids and turbidity display higher variability (SD ≈ 252 mg/L and 108 NTU), suggesting fluctuating particulate or ionic loads.

Impact of seasonal weather on heavy metal mobility and water quality

The seasonal distribution of heavy metals and physicochemical properties in the studied and indicated in Fig. 7, water body shows significant changes influenced by weather and leaching from C&D waste Virha et al. (2011)[50]. Water samples were collected daily from multiple locations around Upper Lake in Bhopal, starting from the first week of May (2024) and continuing for 50 weeks until April (2025). Metals like Al, As, Cd, Cr, Cu, Fe, Pb, Ni, and Zn increase during the rainy season due to enhanced runoff and pollutant solubility[42,43]. In summer, moderate, with Mn and Mg sometimes higher due to evaporation and dry-weather leaching. Winter shows a decline in heavy metals, likely because of reduced microbial activity and lower mobility. Physicochemical factors such as turbidity, BOD, phosphate, and nitrate peak in rainy season and drop in winter, while dissolved oxygen rises in winter due to cooler temperatures WHO, 2017[35]. Elevated chloride, sulfate, and sodium in winter and rain may result from delayed leaching of ions from alkaline C&D waste[49]. These findings emphasize the need for season-specific monitoring and control in urban waters impacted by C&D activities.

Additionally, the heat map visualization of seasonal impacts on various water quality elements in Bhopal's Upper Lake, influenced by C&D waste, is presented in clearly illustrates how different elements respond to seasonal variations, with each cell indicating the relative impact level, ranging from low to high, across the summer, monsoon, and post-monsoon periods[50]. Sharma et al. (2021) indicated that elements such as Aluminum, Arsenic, and Cadmium exhibit a significant increase during the monsoon season, likely due to surface runoff and increased acidity, while elements like Calcium and Mercury are more affected during the

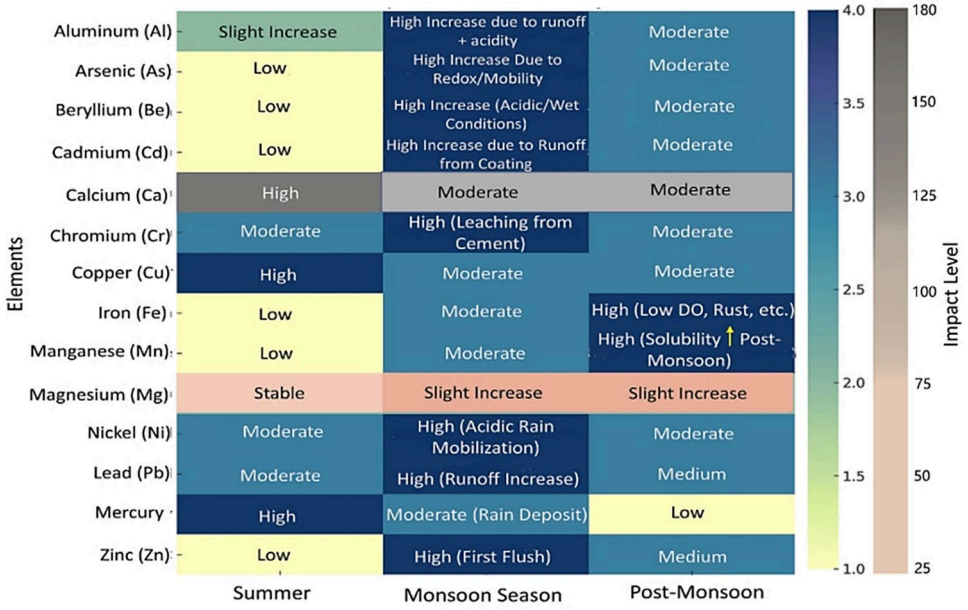

Fig. 7. Heatmap visualization of seasonal impacts on various water quality elements in Bhopal's Upper Lake due to construction and demolition (C_o and D_e) waste.

summer months[51]. This visual tool aids in identifying seasonal patterns and enhances the understanding of how elemental concentrations in surface water systems are influenced by both seasonal changes and anthropogenic activities.

Distribution analysis of physicochemical and heavy metal parameters

The histogram analysis of weekly water quality parameters for heavy metals and Physicochemical parameters of Bhopal Lake over a one-year period illustrated in Figs. 8 and 9. The analysis results presented a comprehensive understanding of the lake's hydrochemical variability. Heavy metals such as Cadmium (Cd), Lead (Pb), Arsenic (As), and Chromium (Cr) displayed right-skewed and multimodal distributions, indicating episodic pollution likely resulting from industrial effluents, vehicular runoff, or improper waste disposal practices, as reported in other urban lake studies[51,52]. Parameters such as Electrical Conductivity (EC), Total Dissolved Solids (TDS), and pH showed relatively normal distributions, reflecting the stable geochemical background of the lake and consistent ionic contributions over time[53]. Notably, Biological Oxygen Demand (BOD) exhibited frequent peaks, while Dissolved Oxygen (DO) showed instances of decline, suggesting organic pollution and biochemical stress on aquatic ecosystems, which is consistent with findings from similar urban freshwater systems[54]. Nutrient parameters such as Nitrate, Phosphate, and Sulphate showed moderate variability, potentially influenced by storm water runoff, agricultural drainage, and sewage intrusion[55]. The distributions of essential ions like Calcium (Ca), Magnesium (Mg), and Sodium (Na) were relatively stable but reflected underlying lithological and anthropogenic contributions. These patterns highlight the temporal variability and pollution vulnerability of Bhopal Lake, underscoring the need for targeted monitoring and management interventions. Furthermore, the statistical distributions presented in Fig. 8. Fig 9 can serve as a foundation for machine learning-based prediction of water quality parameters under varying sustainable scenarios[56].

Temporal dynamics of water quality parameters and comparative analysis with recent literature

The water quality analysis of Upper Lake, Bhopal reveals a concerning trend of elevated concentrations of various physicochemical and heavy metal parameters when compared with permissible limits prescribed by BIS and WHO guideline[34,35], as well as earlier reported studies (see Table 8). Aluminum concentrations ranged from 0.5 to 1.5 mg/L, extensively exceeding the BIS limit of 0.03 mg/L and WHO limit of 0.2 mg/L, and surpassing previously observed levels of 0.42–0.91 mg/L[51,53]. Arsenic levels (20–70 µg/L) also surpassed the safe limit of 10 µg/L, aligning with earlier findings of 18–65 µg/L[38,39]. Similarly, cadmium (1–3 µg/L), chromium (50–100 µg/L), lead (25–45 µg/L), nickel (0.1–0.2 mg/L), and mercury (1–2 µg/L) were found to approach or exceed national and international safety thresholds, indicating potential risks to aquatic life and public health[47].

The concentrations of nutrients and ions such as phosphate (1–5 mg/L), nitrate (20–50 mg/L), and chloride (300–600 mg/L) also exceeded WHO recommended limits[35], suggesting anthropogenic inputs from agricultural runoff and sewage discharge[42]. The lake exhibited high turbidity (100–400 NTU) compared to the permissible 5 NTU, and elevated BOD levels (8–50 mg/L) far beyond the safe limit of 3 mg/L, indicating severe organic pollution and a potential threat to aquatic oxygen balance[42,57]. Dissolved oxygen (DO) levels were found to be in the range of 2–5 mg/L, below the acceptable minimum of 5 mg/L, reflecting a stressed aquatic ecosystem[47].

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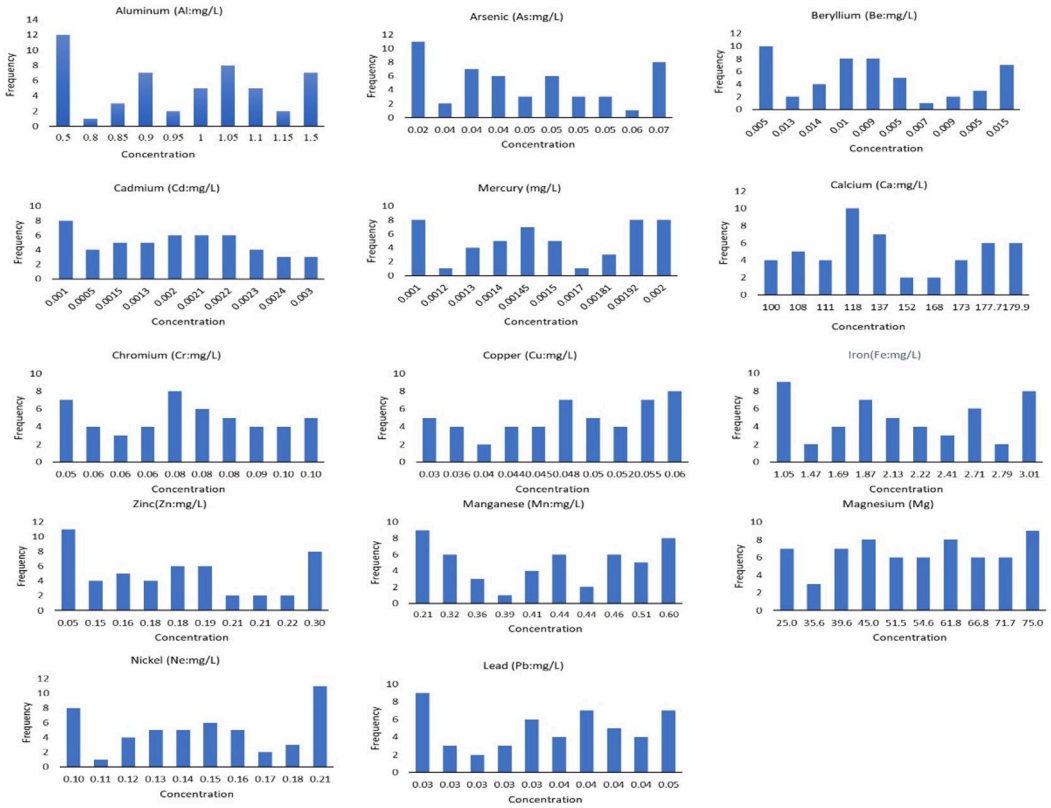

Fig. 8. Histogram of weekly concentrations heavy metal parameters Bhopal Lake over one year.

These findings indicate a marked degradation in the lake's water quality compared to previous assessments [50,58,59] possibly due to increased urban runoff, untreated wastewater inflow, and the absence of systematic pollution control measures. While earlier studies may have sampled from general lake zones, the present study focuses on regions directly impacted by human activity, such as discharge points and agricultural zones, which likely contributes to the observed variation in contamination levels. The consistent exceedance of BIS and WHO thresholds across several parameters underlines the urgent need for integrated lake management strategies and pollution mitigation to restore and preserve the ecological integrity of Upper Lake.

The Fig. 10 presents the weekly variations in the concentrations of key physico-chemical and heavy metal parameters in the water samples collected from Bhopal Lake. The trend analysis shows dynamic changes in water quality parameters over time, reflecting both seasonal influences and anthropogenic activities. Parameters such as Electrical Conductivity (EC), Total Dissolved Solids (TDS), and Chloride (Cl^-) showed moderate temporal variability and remained within the permissible limits prescribed by BIS and WHO [34,35]. The consistent levels of EC and TDS suggest the influence of continuous but regulated ionic loading, possibly from domestic drainage or groundwater interaction.

On the other hand, heavy metals such as Aluminium (Al), Iron (Fe), and Lead (Pb) displayed significant fluctuations, with certain peaks surpassing BIS and WHO guideline values[34,35], indicating periodic contamination events. These may be attributed to surface runoff during rainfall, discharge of untreated domestic or industrial effluents, and sediment resuspension[42,43]. The concentration of Lead (Pb), in particular, exceeded the WHO permissible limit of 10 µg/L during certain weeks, signaling potential public health risks BIS.

The dissolved oxygen (DO) levels exhibited an inverse relationship with Biochemical Oxygen Demand (BOD), reflecting microbial decomposition of organic matter and nutrient enrichment. Weeks showing low DO and high BOD levels suggest episodes of organic pollution, possibly due to sewage inflow[60]. The presence of elevated Nitrate (NO_3^-) and Phosphate (PO_4^{3-}) concentrations in some weeks also supports this, as these nutrients are commonly linked to agricultural runoff and domestic wastewater. Prolonged eutrophic conditions indicated by nutrient spikes may promote algal growth, further reduc ing DO and affecting aquatic biodiversity[47,57].

Additionally, Turbidity and Iron (Fe) levels rose critically in some samples, indicating sediment disturbance and high particulate matter load, particularly after rainfall events. While Arsenic (As) and Mercury (Hg) remained mostly within safe limits, their detection even at low concentrations warrants attention due to their potential for bioaccumulation and chronic toxicity. In contrast, most of the parameters adhered to the limits recommended by BIS and WHO[34,35]. However, the episodic rise in critical pollutants like Pb, NO_3^-, PO_4^{3-}, and BOD points to localized contamination sources. These findings align with earlier studies on Bhopal Lake by Chouhan et al. (2009)[55],; Kapil N. (2013)[56], which emphasized the vulnerability of urban lakes to seasonal and anthropogenic influences.

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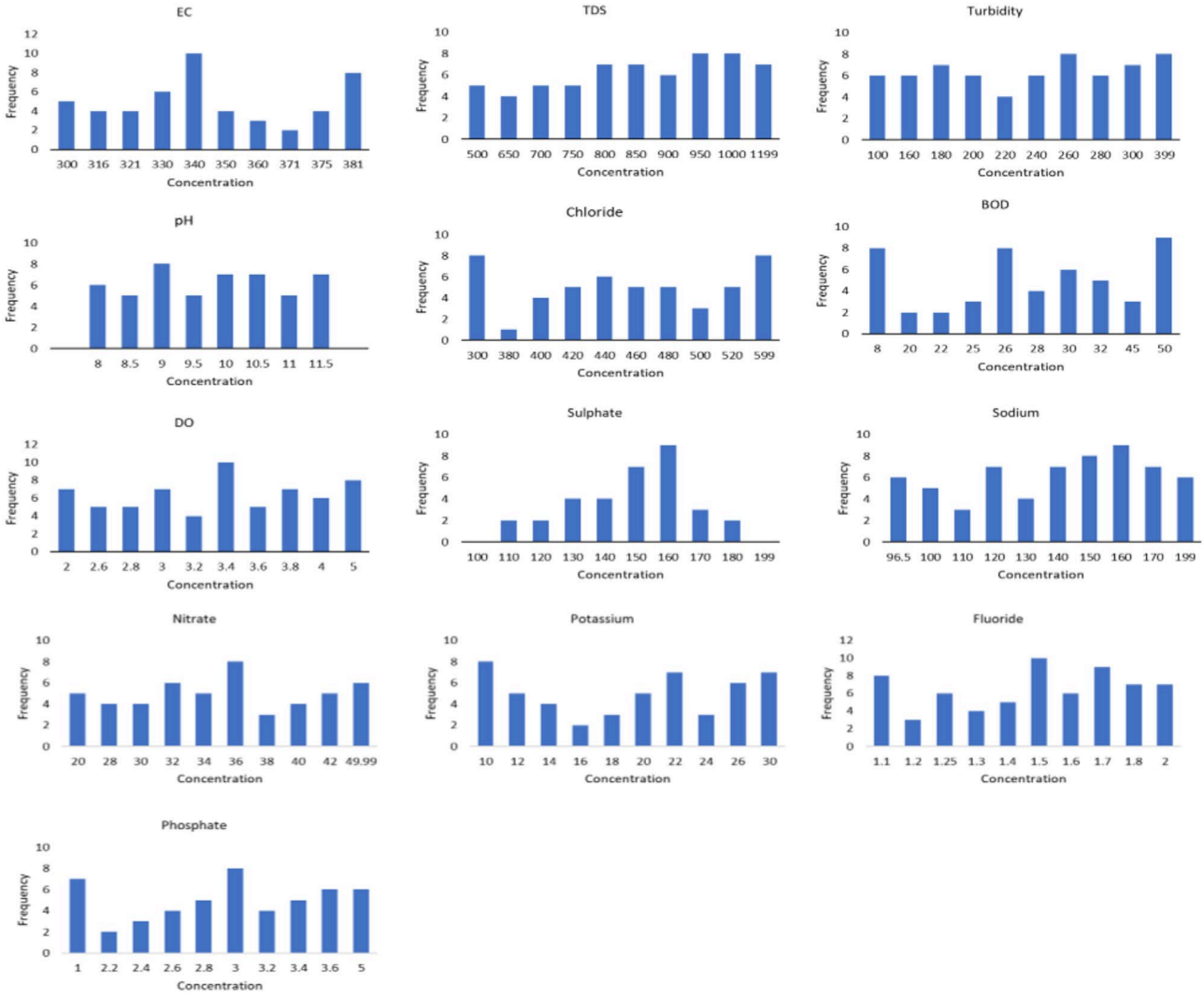

Fig. 9. Histogram of weekly concentrations of physicochemical parameters in Bhopal Lake over one year.

Additionally, to contextualize the hydro-chemical dynamics observed in the Upper Lake, the findings of this study were benchmarked against the most recent global research (2022–2025) concerning urban geochemical cycles and anthropogenic stressors. As summarized in Table 9, our results regarding extreme alkalization and heavy metal mobilization provide a robust field-scale validation of emerging theories on cement-water interactions and molecular-scale leaching kinetics. By aligning local spatiotemporal data with these high-impact international frameworks, this research establishes the Upper Lake as a critical case study for understanding the long-term ecological risks of unregulated construction and demolition C&D waste disposal in rapidly urbanizing regions.

Conclusions

The present study provides a comprehensive assessment of the impact of construction and demolition (C&D) waste on the water quality of Upper Lake, Bhopal, through a year-long spatiotemporal monitoring program conducted from May 2024 to April 2025. The findings clearly demonstrate that unregulated disposal of C&D waste along the lake margins has significantly altered the physicochemical characteristics and heavy metal profile of the aquatic ecosystem permissible limits BIS and WHO. Elevated concentrations of major ions, turbidity, total dissolved solids (TDS), and several toxic metals, including Al, As, Cr, Fe, Pb, and Ni, indicate substantial anthropogenic contamination associated with cementitious materials, construction debris, and urban runoff. Many parameters exceeded the permissible limits prescribed by BIS and WHO standards, highlighting potential ecological and public health risks.

Seasonal analysis revealed that meteorological conditions scientifically rigorous govern pollutant transport and transformation within the lake system. Monsoon-driven runoff enhanced the mobilization of particulate matter, nutrients, and heavy metals into the lake, while summer evaporation intensified ionic concentration and alkalinity. The observed increase in turbidity, BOD, nitrate, phosphate, and metal concentrations during rainy periods confirms that storm-water runoff from C&D waste affected zones acts as a major pathway for

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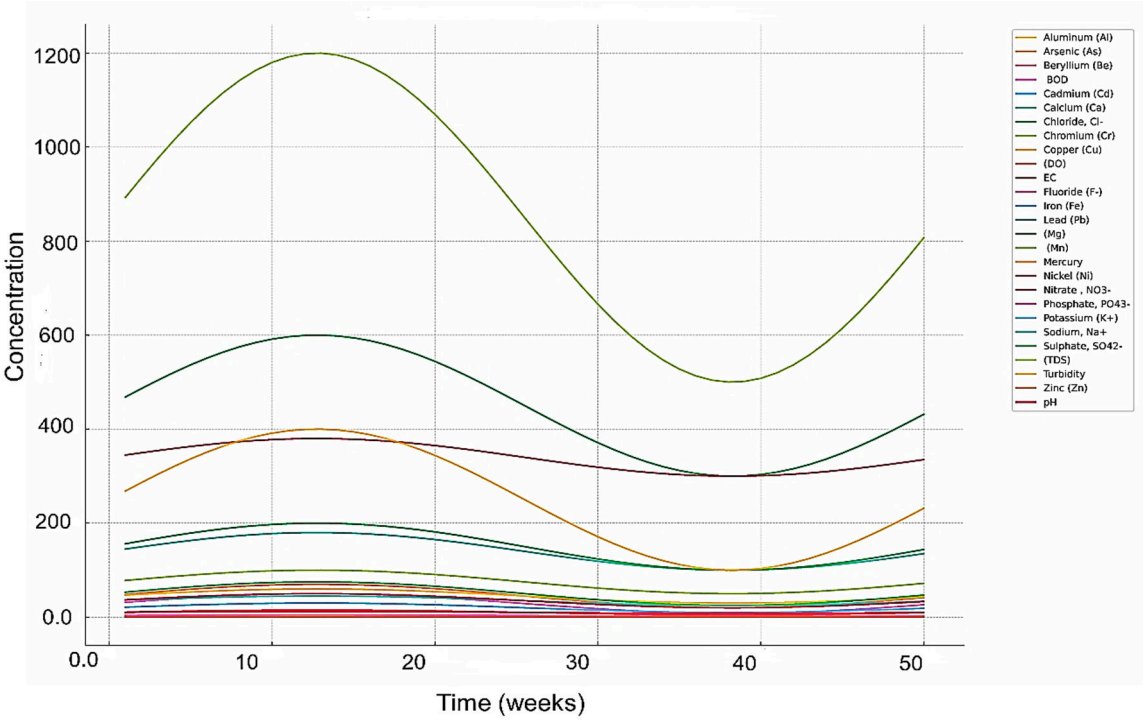

Fig. 10. Weekly variations in the concentrations of key physico-chemical and heavy metal parameters in the water samples collected from Bhopal Lake.

Reference	Domain / focus	Key finding or methodology	Relationship to present study (Upper Lake, Bhopal)
World Bank (2022)[35]	Global waste trends	C&D waste accounts for ~30% of urban solid waste in developing economies.	Validates the socio-economic scale of the dumping observed in Bhopal as a Tier-II city.
Silva et al. (2022)[4]	Circular economy	Lack of recycling infrastructure leads to "leakage" into environmentally sensitive buffer zones.	Provides the regulatory context for the unauthorized shoreline disposal documented here.
Wang et al. (2023)[23]	Geochemical fingerprinting	Identifies a "Construction Signature" in urban water, distinct from natural weathering.	Aligns with our PCA results, where PC1 (99.81% variance) confirms a dominant anthropogenic source.
Aggarwal et al. (2025)[2]	Health risk assessment	Evaluates pediatric vulnerability to Pb and as via multi-exposure pathways in urban lakes.	Supports our toxicological assessment regarding the high risks of Lead (0.045 mg/L) for local populations.
Xia et al. (2024)[5]	Urban geochemistry	Describes "Anthropogenic Alkalization" driven by cement-water interactions.	Validates our extreme pH observations (Mean: 10.0) as a predictable chemical shift in C&D-impacted waters.
Andrade et al. (2026)[7]	Leaching kinetics	C&D deposits act as "chronic leaching batteries" with a steady-state pollutant flux.	Justifies our year-long monitoring approach, confirming that the impact is persistent, not episodic.
(Manahan, 2017; Hiscock & Bense, 2014; Jain & Sharma, 2006)[42,44,53]	Molecular mechanisms	High pH triggers the mobilization of amphoteric metals through hydroxyl complexes.	Provides the mechanistic proof for the high levels of Aluminum and Arsenic found in our samples.
US EPA (2024)[26]	Regulatory standards	Lowered Lead action level (10 ppb) and updated pH-dependent metal toxicity criteria.	Provides the global benchmark against which our results (45 ppb Lead) are evaluated as a critical risk.

Table 9. Alignment of current study with recent high-impact literature (2022–2025).

contamination. In contrast, lower dissolved oxygen (DO) levels and elevated BOD values reflected increasing organic and biochemical stress within the aquatic environment.

Statistical analyses further validated the severity and consistency of contamination. One-way ANOVA demonstrated highly significant temporal and spatial variations ($p < 0.001$) for almost all physicochemical and heavy metal parameters, confirming the comprehensive influence of external pollution sources. Pearson correlation analysis revealed near-perfect positive relationships among TDS, EC, turbidity, major ions, and heavy metals, suggesting a common anthropogenic origin linked to C&D waste leachates. The highly inverse correlation between DO and pollution indicators further emphasized the progressive degradation of aquatic health and the development of hypoxic conditions.

Principal Component Analysis (PCA) identified a single dominant pollution factor explaining more than 99% of the total variance, confirming that the deterioration of water quality is primarily controlled by a unified anthropogenic source associated with C&D waste disposal. The substantially positive loadings of calcium, magnesium, TDS, turbidity, pH, and toxic metals on PC1 establish a clear "C&D impact signature" within the

lake ecosystem. Mechanistic interpretation further demonstrated that alkaline leachates from cementitious debris promote metal solubilization, while particulate-bound transport and sediment deposition contribute to long-term contaminant persistence and remobilization.

The ecological implications of these findings are substantial. Elevated alkalinity, persistent heavy metal contamination, high turbidity, and declining dissolved oxygen collectively threaten aquatic biodiversity, accelerate habitat degradation, and increase the risk of bioaccumulation through the food chain. Moreover, the deterioration of raw water quality creates additional technical and economic burdens for municipal water treatment systems, particularly because Upper Lake serves as a major drinking water source for Bhopal city.

In summary, this study establishes Upper Lake as a critical example of the ecological consequences of unmanaged urban C&D waste disposal in rapidly developing regions. The integration of long-term monitoring, multivariate statistical analysis, and mechanistic interpretation provides a robust scientific framework for understanding the source–transport–fate–impact relationship of pollutants in urban freshwater systems. The findings extremely emphasize the urgent need for strict regulation of C&D waste disposal, implementation of sustainable waste recycling and management practices, routine water quality surveillance, and restoration strategies to safeguard the ecological integrity and drinking water security of Upper Lake and similar urban lakes worldwide.

Data availability

All data are available within the manuscript.

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Author contributions
A.S. conceived the idea and methodology of this study. S. S. B. conducted the literature review and data analysis in supervision. S. S. B wrote the manuscript with inputs. A.V summarized and edit the manuscript. All authors reviewed the final version of this draft and approved it.

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Declarations

Competing interests
The authors declare no competing interests.

Additional information
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Subject: ***Amendment in the Zoning Regulations of Development Plans – Prohibited Activities.***

Public Notice: CCP(NCR)/2026/394-II/1989 **Dated: 30.09.2026**

PUBLIC NOTICE

The Department of Town and Country Planning, the Urban Local Bodies Department, and various Metropolitan Development Authorities are vested with the statutory powers to prepare and publish Development Plans under the provisions of the Haryana Scheduled Roads and Controlled Areas Restriction of Unregulated Development Act, 1963; the Haryana Municipal Corporation Act, 1994; the Haryana Municipal Act, 1973; the Gurugram Metropolitan Development Authority Act, 2017; the Faridabad Metropolitan Development Authority Act, 2018; the Panchkula Metropolitan Development Authority Act, 2021; the Sonipat Metropolitan Development Authority Act, 2023; and the Hisar Metropolitan Development Authority Act, 2024.

Now, under Phase-2 of Compliance Reduction & De-regulation Exercise of Govt. of India, deliberations are being held to implement the recommendations for specified priority areas. Among these, one of the priority areas is regarding allowing the 'Demand Driven' uses by the State in all land use zones with the spirit of 'Everything is permitted until prohibited' and for allowing construction approvals accordingly.

Consequently, the matter has been deliberated to amend the existing Zoning Regulations of Development Plans (Appendix B) and it has been decided to introduce a prohibited list of activities for different major land use zones under Zoning Regulations of the Development Plans, by replacing the existing practice of having permissible activities for these land use zones as mentioned in 'Appendix B' of Explanatory Note. Further, 'Appendix A' of the Explanatory Note of all published Development Plans will be deleted.

However, before finalizing the amendment as indicated in 'Appendix B', notice is hereby given that the proposed zoning regulations of Development Plan shall be taken into consideration by the Government on or after expiry of a period of thirty days from the date of publication of this Public Notice together with objections and suggestions, if any, which may be received by the Director, Town and Country Planning Department, Haryana [addressed to Chief Coordinator Planner (NCR)], 2nd Floor, Nagar Yojana Bhawan, Sector 18A, Madhya Marg, Chandigarh, from any person in writing and/or through email on: **ccpncrhry.zrobjections@gmail.com** before the expiry of the period so specified.

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"Appendix B

Except the following prohibited uses, all other activities shall be permissible in the respective land use zones in accordance with the prevailing policy parameters:

A. Residential Zone:

i) Industrial Units except local service industry
ii) Industrial Colonies
iii) Waste-to-energy plants, recycling units
iv) Ready Mix Concrete Plants & hot mix plants
v) Cyber Parks/Information Technology Parks/Information Technology Units, Data Centres
vi) Integrated multi-model logistic parks, integrated inland container depots/custom bounded areas, logistics parks, warehouses, storage and Gas Godown
vii) Wholesale business establishments
viii) Transport Nagar and Transport depots
ix) Airports and Air Stations, Standalone Skyport/Helipad
x) Railway yards, railway station and siding
xi) Bus terminal, bus depot, truck parking/transport hub and related ancillary activities and workshops
xii) Goods terminal/loading and unloading areas
xiii) Drainage and Sanitary installations including Sewage Treatment Plants and disposal works
xiv) Solid Waste Management sites/C&D Waste Management sites/Bio-Medical Waste Management sites
xv) Cremation/burial grounds
xvi) Slaughter house, dairy farm, cattle pond, tanneries, fish markets
xvii) Dairy and poultry farming
xviii) Mining, quarrying and stone crushing operations.
xix) Any Obnoxious or hazardous trade, including those involving explosives

B. Commercial Zone:

i) Residential colonies
ii) Industrial Units except local service industry
iii) Industrial Colonies
iv) Waste-to-energy plants, recycling units
v) Cyber Parks/Information Technology Parks/Information Technology Units, Data Centres
vi) Integrated multi-model logistic parks, integrated inland container depots/custom bounded areas, logistics parks
vii) Drainage and Sanitary installations including Sewage Treatment Plants and disposal works
viii) Solid Waste Management sites/C&D Waste Management sites/Bio-Medical Waste Management sites
ix) Gas installations and Gas works
x) Cremation/burial grounds
xi) Slaughter house, cattle pond, tanneries

xii) Agricultural, Horticultural, dairy and poultry farming
xiii) Mining, quarrying and stone crushing operations.
xiv) Any Obnoxious or hazardous trade, including those involving explosives.

C. Industrial Zone:

i) Residential and commercial colonies
ii) Educational Establishments
iii) Agricultural, Horticultural, dairy and poultry farming

D. Transport and Communication Zone:

i) Residential and commercial colonies
ii) Red category industrial units
iii) Waste-to-energy plants, recycling units
iv) Cyber Parks/Information Technology Parks/Information Technology Units
v) Institutional uses
vi) Agricultural, Horticultural, dairy and poultry farming

E. Public and Semi-Public Zone:

i) Industrial Units and Industrial Colonies
ii) Residential and commercial colonies
iii) Waste-to-energy plants, recycling units
iv) Cyber Parks/Information Technology Parks/Information Technology Units,
v) Integrated multi-model logistic parks, integrated inland container depots/custom bounded areas, logistics parks, warehouses, storage and Gas Godown
vi) Wholesale business establishments
vii) Transport Nagar and Transport depots
viii) Goods terminal/loading and unloading areas
ix) Solid Waste Management sites/C&D Waste Management sites/Bio-Medical Waste Management sites
x) Gas installations and Gas works
xi) Slaughter house, cattle pond, tanneries, fish markets
xii) Agricultural, Horticultural, dairy and poultry farming

F. Public Utility Zone:

i) Residences and residential colonies
ii) Commercial colonies
iii) Commercial establishments including hotels etc.
iv) Educational institutes
v) Health Institutes
vi) Socio Cultural, Religious & Recreational activities
vii) Clubs, Community centers, Banquet hall etc.
viii) Industrial Units and Industrial Colonies
ix) Service Garage and display centres
x) Cyber Parks/Information Technology Parks/Information Technology Units, Data Centres

xi) Integrated multi-model logistic parks, integrated inland container depots/custom bounded areas, logistics parks, warehouses, storage and Gas Godown
xii) Transport Nagar and Transport depots
xiii) Dairy and Poultry farming

G. Open Space Zone:

All other activities except parks, green belts, water bodies& sports related activities, public utility services, fuel stations, public transport related infrastructure, recreational related activities, crematories/burial grounds.

H. Agriculture Zone:

i) Residential and commercial colonies
ii) Red category industrial units
iii) Information Technology Establishments except Data Centres

Apart from the above, in the areas earmarked for Natural Conservation Zone and the Special Zone, all activities, other than those permissible in the respective Development Plans shall be prohibited.

Further, the Director may prohibit any other use, in public interest, in addition to the prohibited activities specified above in the major land use zones. In addition, the Government, in public interest, may relax any restrictions with respect to any use/activity in any zone in terms of provisions of section 7A of the Haryana Scheduled Roads and Controlled Areas Restriction of Unregulated Development Act,1963."

Sd/-
Dr. J. Ganesan, IAS
Director General, Town & Country Planning,
Haryana, Chandigarh.

MANU/SC/0077/2026

Equivalent/Neutral Citation: 2026 INSC 77, 2026(1)RCR(Civil)732

IN THE SUPREME COURT OF INDIA

Civil Appeal No. 385 of 2026 (Arising out of SLP (Civil) No. 11480 of 2020), Civil Appeal No. 386 of 2026 (Arising out of SLP (Civil) No. 5971 of 2021), Civil Appeal No. 387 of 2026 (Arising out of SLP (Civil) No. 14797 of 2020) and Civil Appeal Nos. 872-874 of 2021 +

Decided On: 20.01.2026

Raj Singh Gehlot and Ors. **Vs.** Amitabha Sen and Ors. ..(+)

Hon'ble Judges/Coram:
J.B. Pardiwala and Sandeep Mehta, JJ.

Counsels:
For Appellant/Petitioner/Plaintiff: Samar Vijay Singh, AOR, Preetika Dwivedi, AOR, Abhisek Mohanty, Adv., Ansh Rajauria, Adv. and Karanjawala & Co., AOR

For Respondents/Defendant: Preetika Dwivedi, AOR, Abhisek Mohanty, Adv., Ansh Rajauria, Adv., Kamini Jaiswal, AOR, Rani Mishra, Adv., Aditi Pandey, Adv., Niharika Ahluwalia, AOR, Kanika Agnihotri, Adv., Tushar Mehta, Solicitor General, Lokesh Sinhal, Sr. A.A.G., Noopur Singhal, Adv., Samar Vijay Singh, AOR, Madhav Sinhal, Adv., Sabarni Som, Adv., Nikunj Gupta, Adv., Aman Dev Sharma, Adv., Ishika Gupta, Adv., Sarthak Arya, Adv., Gaj Singh, Adv., Ashta Singh, Adv., Gurmeet Singh Makker, AOR, K.M. Nataraj, A.S.G., Shailesh Madiyal, Sr. Adv., Mukesh Kumar Maroria, AOR, Anmol Chandan, Adv., Sharath Nambiar, Adv., Balaji Srinivasan, Adv., T.S. Sabarish, Adv., Piyush Beriwal, AOR, Varun Chaug, Adv., Shagun Shahi, Adv., Meera Chugh, Adv., Aisha Singh, Adv., Yash Tyagi, Adv., Vikash Tyagi, Adv., Kartik Sharma, Adv., Ali Mohammed Khan, Adv., Saurav Kumar, Adv., Ruchita Srivastava, Adv., Aishwarya Bhati, A.S.G., Ruchi Kohli, Adv., Megha Karanwal, Adv., Preeti Rani, Adv., Digvijay Dam, Adv., Raman Yadav, Adv., N. Visakamurthy, AOR, Arvind Kumar Sharma, AOR, Sushil Tekriwal, Adv., Mamta Tekriwal, Adv., Venkateswara Rao Anumolu, AOR, Uttara Babbar, Sr. Adv., Guneet Singh Sidhu, Adv., Ayush Shah, Adv., Aakash Deep Singh, Adv. and Jasmeet Singh, AOR

Case Note:
Civil - Delicensed land - Commercial construction - Dispute concerning Group Housing Project where land licensed for residential colony under Haryana Development and Regulation of Urban Areas Act, 1975was partially delicensed and permitted to be used for large commercial complex - Apartment owners challengedlegality of permissions, alleging statutory violations, fraud on planning law, and collusion between developer and State authorities - High Court allowed writ petition and invalidated permissions- Hence, present appeal - Whether permissions granted for commercial construction on delicensed land were legally sustainable.

Facts:

The appeals arose from a long-running dispute concerning the Group Housing Project where land licensed for a residential colony under the Haryana

Development and Regulation of Urban Areas Act, 1975was partially delicensed and permitted to be used for a large commercial complex. Apartment owners challenged the legality of the permissions, alleging statutory violations, fraud on planning law, and collusion between the developer and State authorities. The High Court allowed the writ petition and invalidated the permissions. The High Court held that Delicensing orders, orders granting license/permission passed after submission of Deed of Declaration were hereby quashed.

Held, while allowing the appeal:

(i) There was no averment whatsoever to the effect that the flat owners, including the writ Petitioners, were unaware of the contents of the Apartment Buyers' Agreement. Rather they are completely silent on this most vital aspect of the case which flows from the contractual obligations of the parties. On the contrary, the Appellants-developers took a specific and categorical plea in their reply that the township had been developed strictly in accordance with the area and specifications stipulated in the Apartment Buyers Agreement as well as the approved layout plan. It was only for the first time in the rejoinder that the writ Petitioners sought to propound a new theory, namely, that the Apartment Buyers Agreement had been drafted by the Appellants-developers to serve their own interests, allegedly taking advantage of a dominant position. According to the Respondents, the said agreement could, therefore, not be enforced to the detriment of the apartment owners.[59]

(ii) The finding recorded by the High Court that any agreement between the parties could not override the law laid down to regulate the regulations and to prevent hazardous development, was also contrary to record. It bears reiteration that the Apartment Buyers' Agreement was never put to challenge in the writ proceedings. That apart, it is a matter of serious concern that the High Court proceeded to entertain and effectively sustain a challenge to the said agreement, despite the absence of any foundational pleadings, and that too after the lapse of more than a decade from its execution.[62]

(iii) The present writ petition came to be filed almost eight years after the mall and Hotel had been constructed and had become fully operational. In this backdrop, the gross delay in approaching the High Court constituted a material and decisive factor, which by itself ought to have disentitled the writ Petitioners to any sort of discretionary relief. However, the High Court seems to have totally ignored this material aspect of the case which, goes to the root of the matter.[70]

JUDGMENT

Sandeep Mehta, J.

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A.CIVIL APPEALS @ SLP(C) NO(S). 11480 OF 2020; SLP(C) NO(S). 5971 OF 202 SLP(C) NO(S). 14797 OF 2020

1. Heard.

2. Leave granted.

3. At the outset, it would be apposite to clarify that Civil Appeal Nos. 872-874 of 2021, though tagged together, emanate from the orders passed by the National Green Tribunal in Original Application No. 238 of 2015. The said appeals pertain exclusively to allegations of environmental violations and issues falling within the specialised jurisdiction of the National Green Tribunal. In view thereof, and having regard to the distinct factual matrix and legal considerations involved, the said appeals have been examined independently and are being dealt with separately from the present batch of matters.

4. The above captioned appeals arise out of judgment and order dated 10th July, 2020 passed by the High Court of Punjab and Haryana at Chandigarh[1] in Civil Writ Petition No. 20330 of 2015 and involve overlapping questions of facts and law and hence, the same have been heard together and are being decided by this common judgment.

5. The tabular chart of parties in these appeals is noted hereinbelow for the sake of convenience:

S. No.	NAME OF PARTY	POSITION OF PARTIES	
		Before High Court	Before this Court
A. Civil Appeal @ SLP(C) No(s). 11480 of 2020			
1.	Mr. Raj Singh Gehlot	Respondent No. 1	Appellant No. 1
2.	M/s Ambience Private Limited (Formerly Ambience Limited)	Respondent No. 2	Appellant No. 2

	through its Managing Director Mr. Raj Singh Gehlot		
3.	M/s Ambience Developers and Infrastructure Private Limited through its Authorized Person Mr. Raj Singh Gehlot	Respondent No. 3	Appellant No. 3
Vs			
1.	Mr. Amitabha Sen	Petitioner No. 1	Respondent No. 1
2.	Mrs. Dipika Sen	Petitioner No. 2	Respondent No. 2
3.	The Chief Secretary, Government of Haryana, Vice-Chairman, Haryana Development Urban Authority	Respondent No. 8	Respondent No. 3
4.	The Chief Administrator Haryana Urban Development Authority	Respondent No. 9	Respondent No. 4
5.	The Chief Town Planner Town and Country Planning Department,	Respondent No. 10	Respondent No. 5
6.	Mr. A.K. Ganju	Respondent No. 4	Respondent No. 6
7.	A.K. Ganju & Associate	Respondent No. 5	Respondent No. 7
8.	Mr. Rajeev Khanna	Respondent No. 6	Respondent No. 8
9.	Grid Architecture Interiors Private Limited	Respondent No. 7	Respondent No. 9
B. Civil Appeal @ SLP(C) No(s). 5971 of 2021			
1.	Kohler India Corporation Private Limited, through its Authorized Signatory Sh. Dhiraj Mishra	Not a party	Appellant
Vs			
1.	The Chief Secretary, Government of Haryana, Vice-Chairman, Haryana Development Urban Authority	Respondent No. 8	Respondent No. 1
2.	M/s Ambience Developers and Infrastructure Private Limited through its Authorized Person Mr. Raj Singh Gehlot	Respondent No. 3	Respondent No. 2
3.	Mr. Raj Singh Gehlot	Respondent No. 1	Respondent No. 3
4.	M/s Ambience Private Limited (Formerly Ambience Limited) through its Managing Director Mr. Raj Singh Gehlot	Respondent No. 2	Respondent No. 4
5.	Mr. A.K. Ganju	Respondent No. 4	Respondent No. 5
6.	A.K. Ganju & Associate	Respondent No. 5	Respondent No. 6
7.	Mr. Rajeev Khanna	Respondent No. 6	Respondent No. 7
8.	Grid Architecture Interiors Private	Respondent	Respondent

	Limited	No. 7	No. 8
9.	The Chief Administrator Haryana Urban Development Authority	Respondent No. 9	Respondent No. 9
10.	Dr. Amitabha Sen	Petitioner No. 1	Respondent No. 10
11.	Mrs. Dipika Sen	Petitioner No. 2	Respondent No. 11
C. Civil Appeal @ SLP(C) No(s). 14797 of 2020			
1.	The Chief Town Planner Town and Country Planning Department	Respondent No. 10	Appellant
Vs			
1.	Dr. Amitabha Sen	Petitioner No. 1	Respondent No. 1
2.	Mrs. Dipika Sen	Petitioner No. 2	Respondent No. 2
3.	Mr. Raj Singh Gehlot	Respondent No. 1	Respondent No. 3
4.	M/s Ambience Ltd.	Respondent No. 5	Respondent No. 4
5.	M/s Ambience Developers and Infrastructure Private Limited	Respondent No. 6	Respondent No. 5
6.	Mr. A.K. Ganju	Respondent No. 7	Respondent No. 6
7.	A.K. Ganju & Associate	Respondent No. 8	Respondent No. 7
8.	Mr. Rajeev Khanna	Respondent No. 9	Respondent No. 8
9.	Grid Architecture Interiors Private Limited	Respondent No. 10	Respondent No. 9
10.	The Chief Secretary, Government of Haryana Vice-Chairman, Haryana Development Urban Authority	Respondent No. 11	Respondent No. 10
11.	The Chief Administrator, Haryana Urban Development Authority	Respondent No. 12	Respondent No. 11

6. Appellant No. 1-Raj Singh Gehlot[2] is the authorized representative of the Appellant No. 3-M/s. Ambience Developers and Infrastructure Private Limited[3], and also serves as the Managing Director of Appellant No. 2-M/s. Ambience Private Limited.[4]

I. BRIEF FACTS

7. Civil Appeal @ SLP(C)No. 11480 of 2020 is treated as the lead matter and reference to facts and issues is being made therefrom for the purpose of disposal of the batch of appeals.

8. Before proceeding further, it would be apposite to set out, a brief chronology of dates and events which are necessary and relevant for proper adjudication of the present appeals-:

LIST OF DATES AND EVENTS	
DATE	PARTICULARS

23.10.1991	M/s. HLF Enterprises (P) Limited[5] was incorporated.
1991-1992	M/s. HLF Ltd, acquired 22.98 acres of land in Nathupur, Gurgaon.
17.02.1992	M/s. HLF Ltd. applied for a license to set up a residential colony at Village Nathupur, Gugraon.
09.07.1993	An agreement was executed between M/s. HLF Ltd. and Director, Town and Country Planning Department, Chandigarh, Haryana[6], granting M/s. HLF Ltd. permission to develop a residential colony.
15.07.1993	License No. 19 of 1993 was granted by DTCP to M/s. HLF Ltd. for setting up a residential colony on 18.98 acres.
30.03.1994/June, 1994	Appellant-Raj Singh Gehlot, joined M/s. HLF Ltd. as a Director along with Mohan Singh Gehlot and Narender Mohan Gupta with effect from 30th March, 1994 and upon clearance of all dues, the Appellant-Raj Singh Gehlot acquired complete control of M/s. HLF Ltd. in June, 1994.
1994-95	M/s. HLF Ltd. submitted building plans to the DTCP for approval to develop a residential colony on the first 10.98-acre parcel under License No. 19 of 1993.
07.09.1994	M/s. HLF Ltd. sought Change of Land Use approval from the DTCP to develop a five-star hotel & recreational complex on 4 acres land comprising Khasra Nos. 3 and 529.
15.09.1994	DTCP issued CLU No. G/688-10DP-94/1011 for developing a hotel, recreational, and cultural complex over 4 acres in Khasra Nos. 3 and 529.
24.07.1995	DTCP sanctioned the Layout and Building Plan of Ambience Lagoon Complex/Residential colony on 10.98 acres of land.
11.12.1995	M/s. HLF Ltd. applied to the DTCP for a license over 106.175 acres (excluding the earlier 22.98 acres) to develop an integrated colony with residential, commercial, and ancillary facilities.
06.05.1996	DTCP approved the Ambience Lagoon Complex layout and building plans on 10.98 acres in Phase-I, post-renewal of License No. 19 of 1993.

March-April, 2000	Advertisements were given in newspaper for the Ambience Lagoon Housing Project.
18.07.2000	M/s. HLF Ltd. sought DTCP's license to develop a commercial complex on 8 acres.
28.09.2001	DTCP issued letter of Intent to de-license 8 acres of land out of license No. 19 of 1993.
16.10.2001/18.10.2001	License No. 8 of 2001 was granted by the DTCP on 16.10.2001 for the development of a commercial colony on 8 acres of land and same came to be notified on 18th October, 2001.
18.10.2001	DTCP de-licensed area of 8 acres and licensed the M/s. HLF Ltd. to develop commercial complex on 8 acres.
20.10.2001	Apartment Buyers' Agreement was entered between M/s. HLF Ltd. and Respondent Nos. 1 & 2.
31.12.2001/10.01.2002	DTCP issued occupancy certificate followed by a Part completion certificate.
31.01.2002	M/s. HLF Ltd. obtained DTCP's permission to construct B1 and C1 (EWS) blocks on the remaining area of 10.98 acres in Ambience Lagoon Complex.
31.01.2002	DTCP sanctioned the Building Plans of a commercial complex on 8 acres of land.
05.02.2004	DTCP approved the application dated 11th December, 1995 for development of an integrated residential-commercial colony over 106.175 acres, pursuant to which License Nos. 13-18 of 2004 were granted.
09.11.2004	DTCP approved Ambience Island's zoning plan for mixed-use development over 132.06 acres.
-	In the mid-2000s, M/s. HLF Ltd. was re-named as Ambience Developers and Infrastructure Private Limited.
01.03.2005	DTCP approved the consolidated/composite layout plan of integrated township on 132.065 acres.
-	C-1 block, originally sanctioned as EWS flats, was converted into a regular apartment block, leading to an additional utilization of 0.85 acres from Licence No. 2 of 2004 and

	increasing the area of the residential colony to 11.83 acres.
31.03.2005	Residents of Ambience Island Lagoon Apartments filed Consumer Complaint No. 28 of 2005 before National Consumer Disputes Redressal Commission[7] against the Appellants-developers seeking directions to execute and register sale deed.
14.03.2007	The commercial complex was made operational after the issuance of Occupation Certificate by the DTCP.
25.03.2009	Appellant No. 3-Ambience Developers submitted deed of declaration Under Section 2 read with section 11 of the Haryana Apartment Ownership Act, 1983 for land admeasuring 11.83 Acres.
01.02.2010	Ambience Lagoon Apartments Residents Welfare Association[8] instituted a Civil Suit No. 27 of 2010[9].
09.02.2010	The Civil Judge ordered that no illegal construction be carried out on the land allotted to the Plaintiff association and this was subsequently stayed by the High Court on 22nd February, 2010.
2010	ALARWA filed Civil Writ PetitionNo. 15817 of 2010[10] before the Punjab and Haryana High Court challenging the delayed filing of the Deed of Declaration.
01.09.2010	DTCP sanctioned the construction of commercial complex on Plot No. 3 admeasuring 5.81 acres, comprised in Khasra Nos. 536 and 526 and forming part of the License Nos. 13 and 14 of 2004.
31.05.2011	High Court dismissed the 2010 writ petition.
31.01.2012	ALARWA filed Civil Writ PetitionNo. 2147 of 2012 seeking quashing of Memo No. 10894 dated 01st September, 2010.
16.03.2015	2010 civil suit came to be dismissed as withdrawn.
03.06.2015	Original Application No. 238 of 2015 was filed before National Green Tribunal[11] seeking restoration of damaged parks/open spaces; compliance with earlier NGT's order

	dated 10th April, 2015 in the case "Vardhaman Kaushik v. Union of India"; and payment of suitable compensation, after the first Original Application No. 160 of 2015 was directed to be withdrawn.
08.07.2015	This Court, in Writ Petition (C) No. 338 of 2015, directed Respondent Nos. 1 & 2 to approach the High Court.
06.09.2015	Respondent Nos. 1 & 2 approached the High Court by filing Civil Writ Petition No. 20330 of 2015.
05.05.2016	Shri Mohan Singh, District Town Planner submitted his report before the NGT in Original Application No. 238 of 2015.
16.08.2016	NGT appointed a Court Commissioner to inspect the site.
19.09.2016	Court Commissioner submitted the report.
11.05.2018	Consumer Complaint No. 28 of 2005 before NCDRC was dismissed as the complainants chose to file individual complaints instead of contesting jointly.
29.04.2019	NGT directed the Ministry of Environment, Forest and Climate Change[12] to file report with respect to environmental compensation.
07.11.2019	MoEF&CC quantified environmental compensation at Rs. 68,51,250/-.
09.01.2020	Appellant No. 3-Ambience Developers was directed by the NGT to pay interim compensation of Rs. 68,51,250/-.
16.01.2020	High Court disposed of the Civil Writ Petition No. 2147 of 2012.
11.02.2020	NGT ordered revision of MoEF&CC's compensation assessment and appointed a Joint Expert Committee comprising of MoEF&CC, Central Pollution Control Board, and Indian Institute of Forest Management, Bhopal.
13.02.2020	NGT dismissed the Review Petition.
10.07.2020	High Court delivered impugned judgment and order in Civil Writ Petition 20330 of 2015.
03.12.2020	Joint Expert Committee recommended imposition of fine of Rs. 138.83 crores, Rs. 10.33 crores environmental compensation, withholding 25-50% of

	profits, and possible demolition of the commercial complex.
05.08.2021	Pursuant to the order dated 16th January, 2020, the DTCP passed an order dated 5th August, 2021, which is subject matter of challenge in Civil Writ Petition No. 6047 of 2025 before the High Court.
29.12.2023	CBI filed chargesheet before the Court of Chief Judicial Magistrate, Panchkula.

9. M/s. HLF Ltd. was incorporated on 23rd October, 1991, inter alia, with the primary objective of carrying on the business of hotel construction, colonisation and development, including acting as builders, town planners, decorators, and developers of resorts and amusement parks. M/s. HLF Ltd. acquired a parcel of land admeasuring 22.98 acres at village Nathupur, District Gurgaon, Haryana. On 17th February, 1992, M/s. HLF Ltd. moved an application to the Director, Town and Country Planning Department, Chandigarh, Haryana, seeking permission to set up a residential colony on the aforesaid tract of land. It was specifically mentioned at Serial No. 9 of the said application, that the applicant intended to establish a residential colony (group housing society) over an area measuring 18.98 (19) acres from the above chunk of land. The said application culminated into an agreement dated 9th July, 1993 executed between M/s. HLF Ltd. and the DTCP, pursuant to which M/s. HLF Ltd, was granted License No. 19 dated 15th July, 1993 for development of a residential colony on 18.98 acres of land.

10. The Appellant-Raj Singh Gehlot, joined M/s. HLF Ltd. as a Director along with Mohan Singh Gehlot and Narender Mohan Gupta with effect from 30th March, 1994. Upon clearance of all dues and completion of other formalities, the Appellant-Raj Singh Gehlot acquired complete control of M/s. HLF Ltd. in June, 1994.

11. The Appellants-developers have set up a case that the layout plan for this residential colony, later named as Ambience Lagoon Group Housing, was sanctioned on 24th July, 1995 and in this plan, there is a clear indication that the residential colony would be constructed on an area of 10.98 acres of land.

12. M/s. HLF Ltd. was having other parcels of land in the surrounding areas and hence, another application dated 11th December, 1995 was moved on its behalf seeking grant of license in respect of land admeasuring 106.175 acres, distinct from and in addition to the aforesaid tract of 22.98 acres, for development of an integrated colony comprising residential and commercial complexes along with ancillary services. It is the case of the Appellants-developers that the said application was duly considered and accepted by the DTCP and the development plans submitted along with the application were approved on 5th February, 2004, pursuant to which License Nos. 13 to 18 of 2004 came to be granted.

13. The Appellants-developers issued advertisements for the Ambience Lagoon Housing Project in newspapers in March-April, 2000. The Appellants-developers unequivocally maintain that in these advertisements, it was never projected or promised that the residential colony would be constructed on entire 18.98 acres of land and that rather, the approved layout plan clearly manifested that the project would be coming up over 10.98 acres of land only.

14. Another application was submitted by M/s. HLF Ltd. in July, 2000 to the DTCP seeking de-licensing of 8 acres out of total 18.98 acres of land covered under License No. 19 of 1993. The language of the said application would be relevant and germane for decision of these appeals and hence, the same is reproduced hereinbelow for the sake of convenience:

HLF ENTERPRISES PRIVATE LIMITED

Dated: 18.07.2000

To

The Director,

Town & Country Planning Haryana,

Aayojana Bhawan, Sector 18-A,

Madhya Marg, Chandigarh.

Sub: APPLICATION FOR ISSUANCE OF LICENCE TO DEVELOP COMMERCIAL COMPLEX/COLONY ON 8 ACRES OF LAND BY DELICENSING THIS 8 ACRES OF LAND BEING PHASE-II OF RESIDENTIAL GROUP HOUSING COLONY ON TOTAL 18.98 ACRES OF LAND UNDER LICENCE NO.19 OF 1993 BY M/S, HLF ENTERPRISES PVT. LTD.

Dear Sir,

With due respect, it is submitted that we have been issued Licence No. 19 of 1993 dated 9.7.1993 to set up a residential group housing colony on 18.98 acres of land and CLU to set up hotel, recreational and cultural complex on 4 acres of land vide Memo No. 10011 dated 15.9.94 at our "Ambience Island" project tin the revenue estate of Village Nathupur, NH-8, District Gurgaon. Zoning plans of the residential group housing colony and hotel recreational and cultural complex were sanctioned by your office vide Memo No. 14510 dated 29.12.1994 and Memo No. 394 dated 10.01.1995 respectively. **However, keeping in view the topography and site conditions of the licenced land and your stipulation to obtain a fresh clearance from the drainage department, 18.98 acres of land of residential group housing colony for construction purposes was bifurcated into two phases i.e, Phase-l and Phase-II comprising of 10.98 acres and 8 acres of land respectively. The development and construction of Phase I of the group housing colony is going on in full swing as per plan sanctioned by the competent authority in your esteemed office vide Memo No. 8903 dated 6.5.1996**. The above said licence to set up group housing colony and CLU to set up hotel project have duly been renewed from time to time and are valid as on date.

We further applied in 1995 & 1996 for issuance of additional licence to develop the land owned by our different group companies in "Ambience Island" in Special Zone allowing group housing, commercial, institutional and recreation & entertainment uses.

Schematic layout plan of the said colony was submitted to the department earmarking the total area of "Ambience Island" complex i.e., licenced area of

22.98 acres and area of 106.175 acres applied to be licenced for various purposes allowed in special zone.

This area of 8 acres presently licenced for setting up residential group housing colony is to be developed in Phase II of licence No. 19 of 1993 and is adjoining to hotel, recreational and cultural complex, therefore, it shall be more prudent, convenient, practicable and viable to develop a shopping, commercial and recreational complex on this land. Norms of town planning definitely favour such type of blended, balanced and mixed development of the area. Moreover, it is also necessary to develop this 8 acres of land as a shopping, commercial and recreational complex keeping in view the overall perspective and layout of the "Ambience Island" project. It is also significant to submit that the development and construction of Phase-I of residential group housing colony on 10.98 acres of land under Licence No. 19 of 1993 is going on in full swing and it is likely to be habituated very soon. Development of hotel project is also likely to be commenced on as the building plans of the project have already been got sanctioned in July, 2000. In this respect, it is noteworthy that no other development of commercial nature is coming up at present in the Special Zone. Moreover, Special Zone being having all the locational advantages e.g, nearest to Indira Gandhi International Airport, National Capital Region of Delhi and so many posh South Delhi colonies and it being facing lush green farm houses in village Rajokri and situated immediately on Delhi Haryana border at the outskirts of Delhi or NH-8, must consist of an ultra modern shopping, commercial and recreational complex. It shall serve the purpose of decongesting of the national capital region of Delhi by relocating of the existing and prospective offices of Government, Semi-Govt, Multinational and Private corporations in upcoming Satellite Township of Gurgaon as conceptualise din the NCR Act and Plan. It is also submitted that the international chains of hotel are not comfortable with the development of residential apartment complex on the land immediately adjoining to the land of hotel, recreational and cultural complex and they are insisting us to develop the proposed ultra modern international standard and size of shopping-cum-commercial and office complex on this 8 acres of adjoining land. We, therefore, propose to develop the abovesaid 8 acres of land as a ultra modern shopping and commercial complex comprising of shops, offices, marketing, recreational and entertainment outlets.

Keeping these aspects in mind, we propose to develop an ultra modern shopping, commercial, office and recreational complex on the abovesaid 8 acre of land to have natural blending with the existing CLU for hotel, recreational and cultural complex on 4 acres of land and with this object, we request your goodself:

1. To delicense the licenced area of 8 acres of Phase II of group housing colony under Licence No. 19 of 1993 dated 9.7.1993 and simultaneously to issue licence to set up a commercial colony on this delicensed 8 acres of land. It may please be noted that the delicensing of the land is co-terminus with the issuance of licence to set up the commercial colony on this land as per provisions of Haryana Development & Regulation of Urban Areas Act, 1975. We are filing requisite application in Form LC-I for issuing us the licence to set up and to develop the proposed shopping, commercial and recreational complex/colony on this 8 acres of land. All other relevant

documents/papers/ information as per rules are also submitted alongwith the Form LC-1.

2. To allow us to adjust the proportionate amount of external development charges (EDC) alongwith interest, licence application fee and scrutiny charges already paid by us for the abovesaid 8 acres of land requested to be delicensed being part of the total licenced land of 18.98 acres under Licence No. 19 of 1993 towards the amount of EDC, licence application fee and scrutiny charges payable by us for issuance of licence to set up the proposed shopping, commercial and recreational complex/colony on abovesaid 8 acres of land as per prevalent policy of the Government. It is, significant to submit that the department has followed this policy in past in several cases. It is submitted for your ready reference and perusal that we have deposited all installments of external development charges alongwith interest amounting to Rs. 806.33 lacs in respect of the total licenced area of 18.98 acres of land under group housing colony including this 8 acres of land now to be delicensed.

3. To allow us to deposit the differential amount of EDC, licence application fee and scrutiny charges on issuance of your in principal approval to our abovesaid request in order to avoid any complication as it is the case of considering the issuance of licence for our already licenced land. We hereby undertake and assure to pay these charges/fee to the Government immediately on demand.

It is also pertinent to mention that for the area of 8 acres proposed to be delicensed and afterwards to be licenced for setting up the proposed shopping, commercial and recreational complex/colony, the defence authorities and irrigation department have already issued their respective No Objection Certificates/clearances which are on record of your department, therefore, for consideration and issuance of abovesaid licence, no further permission/clearance need to be obtained by us either from the defence authorities or from the irrigation department. However, we shall comply with the conditions/stipulation laid in the above No Objection Certificate/clearance issued by these authorities/department.

We, therefore, request your goodself to get our application for setting up of a commercial colony on 8 acres of land processed by the competent authority in your office at the earliest. We further request that in case your goodself require any further information, detail, explanation, document, undertaking, affidavit and bond etc. in this respect, please do let us know for compliance.

Thanking you,
Yours faithfully,
For HLF ENTERPRISES PVT. LTD.
Sd/-
(RAJ SINGH GEHLOT)
Director
Encl: 1) Form LC-I alongwith requisite documents, certificates, details, informations and explanation for issuance of licence to set up commercial colony on 8 acres of land.

15. The aforesaid application seeking de-licensing was acknowledged and accepted by the DTCP vide Memo No. 13948 dated 18th October, 2001 whereby an area admeasuring 8 acres out of the total licensed area of 18.98 acres was formally de-

licensed, resulting in the licensed area under License No. 19 of 1993 being curtailed to 10.98 acres, matching with the approved layout plan for the residential colony.

16. The DTCP issued a permission letter dated 16th/18th October, 2001 authorising M/s. HLF Ltd. to raise a commercial complex over the de-licensed area admeasuring 8 acres in the revenue estate of Village Nathupur, Gurgaon, Haryana. The same came to be published by Endst. No. SDP 2001/13959 dated 18th October, 2001. While Respondent Nos. 1 and 2 contend that the permission to construct the commercial complex was granted on 16th October, 2001, prior to the de-licensing order dated 18th October, 2001, the Appellants-developers assert that the permission attained the cloak of legality only vide notification issued on 18th October, 2001, and not on 16th October, 2001.

17. Shortly thereafter i.e, on 20th October, 2001, Respondent No. 1-Amitabha Sen and Respondent No. 2-Dipika Sen, entered into an Apartment Buyers' Agreement with M/s. HLF Ltd. for the purchase of a flat/apartment in Ambience Lagoon.

18. The construction was commenced and part completion certificate was issued by the DTCP on 10th January, 2002 in respect of Ambience Lagoon Housing Project. The DTCP, vide Memo No. 2161 dated 31st January, 2002 sanctioned the building plans for construction of a commercial complex over the land area admeasuring 8 acres which had been de-licensed and re-licensed in October, 2001. It is the case of the Appellants-developers that construction of the integrated commercial complex comprising of the Leela Ambience Hotel over 4 acres of land and Ambience Mall/Ambience Commercial Tower-I over 8 acres of land was commenced sometime in the year 2002 and concluded in the year 2007.

19. On 25th March, 2009, Appellant No. 3-Ambience Developers filed a Deed of Declaration Under Section 2 read with Section 11 of the Haryana Apartment Ownership Act, 1983, with respect to land admeasuring 11.83 acres stating that the external roads were specifically excluded from the scope of common areas.

20. The flat owners of Ambience Lagoon formed an association named Ambience Lagoon Apartments Residents Welfare Association. Few members of the ALARWA instituted a Civil Suit No. 27 of 2010[13] Under Section 34 of the Specific Relief Act, 1963 before the District Court at Gurgaon, Haryana, seeking a declaration that there were flagrant illegalities and statutory violations in the development of the Ambience Lagoon Housing Project, arraying the Chief Secretary, Government of Haryana, and others as Defendants. Notably, the Appellants-developers were not impleaded as party to the said suit at the time of its institution. Subsequently, an application Under Order I Rule 10 of the Code of Civil Procedure, 1908 was moved, which came to be allowed by the trial Court vide order dated 17th March, 2010, and Appellant No. 3-Ambience Developers was impleaded as Defendant No. 9 in the said civil suit. It is pertinent to note that Respondent No. 1-Amitabha Sen, was representing ALARWA in the said proceedings in the capacity of an advocate.

21. In the meantime, the DTCP, vide Memo No. ZP--318/JD(BS)/2010/10894 dated 01st September, 2010, acting on an application dated 9th June, 2010 submitted by Appellant No. 3-Ambience Developers, sanctioned the construction of commercial complex on Plot No. 3 admeasuring 5.81 acres, comprised in Khasra Nos. 536 and 526 and forming part of the License Nos. 13 and 14 of 2004, subject to specified terms and conditions.

22. Respondent No. 1-Amitabha Sen and Respondent No. 2-Dipika Sen, in the capacity of flat owners, approached this Court by way of writ petition Under Article 32 of the Constitution of India being Writ Petition (C) No. 338 of 2015 alleging that the Appellants-developers had put up constructions in violation of the applicable building laws and without obtaining the requisite sanctions from the concerned authorities. This Court vide order dated 8th July, 2015 relegated them to approach the High Court for ventilating their grievances. Pursuant thereto, Respondent No. 1-Amitabha Sen and Respondent No. 2-Dipika Sen,[14] instituted the captioned Civil Writ Petition No. 20330 of 2015 before the High Court of Punjab and Haryana at Chandigarh wherein the following reliefs were sought:

> a) Issue Writ, Order or Direction to the Respondents to stop illegal construction of the commercial complex on the land earmarked for the Ambience Lagoon Complex and seal the commercial building forthwith to prevent any further construction thereon; and
>
> b) Issue Writ, Order or Direction to the Respondent for the demolition, of the illegally constructed commercial complex; and
>
> c) Order CBI to investigate the illegal usurpation of Land by the Builder in active connivance with the Public Authorities and the Engineers and the Architects; and
>
> d) Issue Writ, Order or Direction to the Respondents to strictly maintain the 35% Ground Floor coverage and the maximum FAR for a Group Housing as stipulated by and under the law for the said Ambience Lagoon Apartment Complex; and
>
> e) Issue Writ, Order or Direction to the Respondent for handing over the peaceful possession of the land measuring 18.98 acres, including the Ambience Mall to the Petitioners along the other Apartment Owners of the Ambience Lagoon Complex, and
>
> f) Pass any other order(s) or direction(a) as the Hon'ble Court may deem fit and proper under the facts and circumstances of the case.

23. It is pertinent to mention that ALARWA had also instituted Civil Writ PetitionNo. 2147 of 2012[15] before the High Court, seeking the following relief:

> (i) Issue an appropriate writ, order or direction quashing Memo No. 10894 dated 01.09.2010 (Annexure P-11) granting permission to the construction plans of commercial building to Respondent No. 9 by District Town Planner on behalf of Chairman Building Plan Approval Committee.

24. The Appellants-developers raised an objection to the maintainability of Civil Writ Petition No. 2147 of 2012 on the ground that a civil suit had already been filed in year 2010 seeking the very same reliefs and was pending before the competent civil Court. In response, the said 2010 civil suit was unconditionally withdrawn and disposed of as such vide order dated 16th March, 2015, without any liberty having been sought or granted to approach any other forum. The said order is reproduced hereinbelow:

> Resolution on behalf of Smt. Anita for withdrawing the present suit filed. Heard. Keeping in view the statement dated 12.3.2015, the present suit is hereby dismissed as withdrawn. File be consigned to record room, after due

compliance.

25. An application for amendment of Civil Writ Petition No. 2147 of 2012 was filed on 12th February, 2016. The said writ petition ultimately came to be disposed of by Division Bench of the High Court of Punjab and Haryana at Chandigarh vide order dated 16th January, 2020 which is very relevant for the present controversy and is reproduced hereinbelow for the sake of ready reference:

> Grievance of the Petitioner inter alia is that after grant of licence dated July 15, 1993, Annexure P-1 by the Director, there was a declaration to raise a construction of apartments buildings, apartment complex, club building and building for economically weaker sections of the society. There was no mention of any commercial activity to come up. However, vide order dated September 1st, 2010, Annexure P-11, wherein it is mentioned that the Director, Town and Country Planning allowed raising construction of commercial building over the land. This is despite the fact that there is no mention in the licence pursuant to which the builder can be allowed to raise commercial project.
>
> **At the outset, Mr. Mittal, learned State counsel submits that the matter shall be reconsidered by the Director General, Urban Estates, Department of Town and Country Planning within three months and a speaking order shall be passed which shall be duly conveyed to the Petitioner.**
>
> It is made clear that while reconsidering the issue, order Annexure P-11 shall not stand in the way of the concerned authority.
>
> Disposed of.
>
> (Emphasis supplied)

26. The Civil Writ Petition No. 20330 of 2015 came to be decided by the High Court vide judgment and order dated 10th July, 2020 which is the subject matter of challenge in these appeals. For the sake of ease and convenience, it would be essential to reproduce the relevant extracts from the said judgment:

> At the border or Delhi-Gurgaon village Nathupur is situated. Due to increasing shortage of space in Delhi, builders thronged to Gurgaon with various housing projects. Certain builders, including the present one, floated companies to buy land in village Nathupur and other adjacent villages with the avowed purpose of developing housing projects. Apparently, this move was welcomed by the State Government as well. It had in fact already enacted a statute known as Haryana Development and Regulation of Urban Areas Act, 1975 within the framework of which such housing projects could be set-up/developed. This enactment was with a view to regulate the use of land in order to prevent ill-planned and haphazard urbanization in or around the towns and for development of infrastructure.
>
> The builder identified a piece of land measuring 18.93 acres in village Nathupur and submitted an application for establishing a group housing project thereon. The firm HLF Enterprises made an application in form LC-1 Under Rule 3(1) of the Haryana Development and Regulation of Urban Areas Rules, 1976 (hereinafter referred to as the 1976 Rules). A copy of the application is on record. Surprisingly, perusal thereof shows that builder at the outset made

certain changes/interpolations in the application dated 17.2.1992 itself. The format for the application is provided in rule 3(1) of the 1976 rules. The application was required to be filled in form in LC-1. Clause 2(v) whereof reads as under:

> (v) Layout plan of the colony on a scale of 1 centimetre to 10 metre showing the existing and proposed means of access to the colony, the width of streets, sizes and types of plots, site reserved for open spaces, community buildings and schools with area of each and proposed building lines on the front and sides of plots.

However, in the application the builder made changes as per his will and submitted an application which was not in the prescribed format. This would be evident by plain reading of the various clauses of the actual application submitted by the builder. Form LC-1 is reproduced hereunder:

> Form LC-I [see rule 3(1)]
>
> Registered
>
> To
> The Director,
> Town and Country Planning, Haryana,
> Chandigarh.
>
> Sir,
>
> I/ We beg to apply for grant of licence to set up a residential/ industrial /Commercial colony at _____ at tehsil and district _____ The requisite particulars are as under:
>
> **1.** to 10 xxx xxx
>
> **2.** I/ We enclose the following documents in triplicate:
>
> > (i) Copy or copies of all title deeds and/or other documents showing the interest of the applicant in the land under the colony, along with a list of such deeds and/or other documents.
> >
> > (ii) a copy of the shajra plan showing the location of the colony along with the names of revenue estate, Khasra number of each field and the area of each field.
> >
> > (iii) A guide map on a scale of not less than 10 centimetres to 1 Kilometre showing the location of the colony in relation to surrounding geographic features to enable the identification of the site.
> >
> > (iv) A survey map of the land under the colony on a scale of 1 centimetre to 10 metres showing the spot levels at distance of 30 metres and where necessary, contour plans. The survey will also show the boundaries and dimensions of the said land, the location of streets, buildings, and premises within a distance of at least 30 metres of the said land and existing means of

access to if from existing roads.

(v) Layout plan of the colony on a scale of 1 centimetre to 10 metres showing the existing and proposed means of access to the colony, the width of streets, sizes and types of plots, sites reserved for open spaces, community buildings and schools with area under each and proposed building lines on the front and sides of plots.

(vi) An explanatory note explaining the salient feature of the proposed colony, in particular the sources of water supply arrangement for disposal and treatment of storm and sullage water and site for disposal & treatment of storm and sullage water.

(vii) Plans showing the cross-sections of the proposed roads showing in particular the width of the proposed carriage ways, cycle tracks and footpaths, green verges, position of electric poles and of any other works connected with such roads.

(viii) Plans as referred to in clause (vii) above indicating in addition the position of sewers, storm water channels, water supply and other public health services.

(ix) Detailed specifications and designs of road works shown in clause (vii) above and estimated cost thereof.

(x) Detailed specifications and designs of sewerage, storm-water and water supply schemes with estimated cost of each.

(xi) Detailed specification and design for disposal and treatment of storm and sullage water and estimated cost of works.

(xii) Detailed specification and designs for electric supply including street lighting.

3 to 5 xx xx xx

[Amenities

6. I/We solemnly affirm that the particulars given in para 1 above are correct to the best of my/ our knowledge and belief.

Dated :

Place :

Your faithfully

Attested : Oath Commissioner/Magistrate,

Ist Class

(Name and address)

It was mandatory for the builder to apply as per the above format, however, in the application submitted by him, many changes were made. Same would be evident from a perusal thereof. Relevant part thereof is being reproduced hereunder:

HRY. DEV. & REGULATION OF URBAN AREA RULES, 1976

Form LC-I

[see rule 3 (1)]

To

The Director,
Town and Country Planning Department,
Haryana, Chandigarh.

Sir,

We beg to apply for grant of licence to set up a residential colony at Village Nathupur, Distt. Gurgaon, Haryana.

The requisite particulars are as under:

1 to 6 xxx xxx

7 . Details of movable/immovable Property held by the applicant:	Land admeasuring 23 acres, bearing khasra no.2/2,3,4,5,528,529,530,531,532,533,535,527 at Village Nathupur, Distt. Gurgaon.
8.Whether the application had ever been granted permission to set up a colony under any other law, if so, details thereof:	No.
9.Whether the applicant has ever established a colony or is establishing a colony and if so, details thereof:	Not done earlier intends to establish a residential complex (Group Housing on 19 acres. Land out of mentioned above.

We enclose the following documents in triplicate:

(i) Copy or copies of all title deeds and/or other documents showing the interest of the applicant in the land under the proposed colony, along with a list of such deeds and/or other documents.

(ii) a copy of the shajra plan showing the location of the colony along with the names of revenue estate, Khasra number

of each field and the area of each field.

(iii) A guide map on a scale of not less than 10 centimetres to 1 Kilometre showing the location of the colony in relation to surrounding geographic features to enable the identification of the site.

(iv) A survey map of the land under the colony on a scale of 1 centimetre to 10 metres showing the spot levels at distance of 30 metres and where necessary, contour plans. The survey will also show the boundaries and dimensions of the said land, the location of streets, buildings, and premises within a distance of at least 30 metres of the said land and proposed building lines on the front and sides of plots.

(v) An explanatory note explaining the salient feature of the proposed colony, in particular the sources of water supply arrangement for disposal and treatment of storm water and sullage water.

(vi) Plans showing the cross-sections of the proposed roads showing in particular width of the proposed carriage ways, cycle tracks and footpaths, green verges, position of electric poles and of any other works connected with such roads.

(vii) Plans as referred to in clause

(viii) above indicating in addition the position of sewers, storm water channels, water supply and other public health services.

(ix) Detailed specifications and designs of road works shown in clause (vii) above and estimated cost thereof.

(x) Detailed specifications and designs of storm-water and water supply schemes with estimated cost of each.

(xi) Detailed specification and design for disposal and treatment of storm and sullage water and estimated cost of works.

(xii) Detailed specification and designs for electric supply including street lighting.

A comparison of the prescribed format in LC-1 and the application submitted by the builder purportedly in form LC-1 shows that he omitted clause (v) from the application which provides for submission of a lay out plan of the colony on a scale of 1 centimetre to 10 metre showing the existing and proposed means of access to the colony, the width of streets, sizes and types of plots, site reserved for open spaces, community buildings and schools with area of each, besides proposed building lines on the front and sides of plots. He made changes in clause (iv) and omitted the line "..... and existing means of access to it from existing roads" and instead substituted the same by "....proposed building lines on the front and sides of plots." In a clever move he projected as if the application contained all (xii) clauses envisaged by rule 3(1). A careful perusal,

however, shows that one para i.e. para 2(v) with regard to lay out plan is missing which was mandatory. Strangely, this application was accepted by the authorities as such and licence was granted. It is inconceivable that concerned authorities failed to notice the stark omissions, interpolations and tampering with the basic document required for purpose of initiation of a project. This is fortified from the fact that during the course of hearing when we asked the authorities to produce the original record they straightway referred to licence No. 19 granted on 9.7.1993 to M/s HLF Enterprises. Para 3(a) thereof reads as under:

> (a) That the colony is laid out to conform to the approved layout plan and development works are executed according to the designs and specifications shown in the approved plan accompanying this licence.

On being asked to refer to the lay out plan stated to be accompanying the licence, the State counsel showed his inability. He sought instructions from the officials of the department, who were present in court, they had no option but to admit that there was no lay-out plan available on record either with the licence or with the application submitted by the builder. It is thus not a matter of chance that in the initial application submitted by the builder that very para was omitted which referred to the lay out plan. It appears, the builder never intended to submit the lay out plan as his intention from the very beginning was just not to establish a housing project but other commercial buildings within the area sanctioned for group housing. We find it difficult to accept that all these clever tactics went unnoticed by the department. On the other hand, it points to their active connivance from the very initiation of the project. Needless to say that this fraudulent exercise had a cascading effect on the project resulting into non-adherence to FAR, lack of open spaces, reduced width of streets and absence of community buildings and schools etc. This was a result of omission of clause 2(v) from the application which was not submitted as per format LC-1 (Under Rule 3 of the 1976 rules). We are constrained to draw a conclusion that the possibility of builder acting in collusion with the authorities and duping innocent buyers of apartments cannot be ruled out. It appears they were made to sign on the dotted line in the Builder-Buyer Agreement, oblivious of the probable mischief by the builder in connivance with State officials.

In this context it is apposite to refer to section 3(2) of the 1975 Act which is as below:

> **3.** [(I) xxx xxx
>
> (2) On receipt of the application Under Sub-section (I), the Director shall, among other things, enquire into the following matters, namely:
>
> (a) title to the land;
>
> (b) extent and situation of the land;
>
> (c) capacity to develop a colony
>
> (d) the layout of a colony
>
> (e) plan regarding the development works to be executed in a colony;

and

(f) conformity of the development schemes of the colony land to those of the neighbouring areas.

A perusal of the aforesaid section shows that a duty is cast on the Director to enquire into the title of the land, extent and situation thereof, capacity to develop a colony and layout of the colony, plans of the works to be executed in the colony and conformity of the development scheme of the colony land to those of neighbouring areas. It is inexplicable how the Director conducted the enquiry in the absence of the layout plan of the colony which was admittedly not submitted by the builder. Even other related aspects could not have been enquired into as the builder interpolated form LC-1 as per his convenience. Needless to say that this appears to be a result of pre-conceived design and deceit.

A perusal of record further shows that on 6.5.1996, the Director, Town & Country Planning granted approval to erect building on 18.98 acre for group housing scheme in phase I in accordance with the building plan submitted by the builder. On the basis of this letter the builder issued a brochure in 1998 promising following amenities to the buyers:

Amenities and Facilities

24 hour water supply with 100% power back-up. Round-the-clock 3 Tier Security System with CCTVs and intercom. Cables, internet and Telephone wiring. One live telephone line with connection in every apartment. Club House with recreational facilities including indoor Badminton, Squash & TT courts, Gym, Billiard Room & Swimming Pool. Recreation space even for drivers. High speed elevators. Multi-level covered parking. More than 80% area reserved for open and community services. Total landscape surrounded by water falls, fountains and lagoons. Fully developed water body/channel for recreational facilities and recycling of water. Hassle-free property management services. Optimum space utilisation.

Prominent amongst the above promises made to the buyers was that 80% areas shall be reserved for open and community services out of 18.98 acres. It is pertinent to point out here that it is the requirement of rule 4 of 1976 rules as well. As per said rule 45% area is otherwise required to be kept as open area for roads, schools, community buildings etc. Same is reproduced as under:

4. Percentage of area under roads, open space etc. in layout plans [Sections 3(3) 4 and 24]-(1) In the layout plan of a colony, other than an industrial colony [or low-density-eco friendly colony], the land reserved for roads, open spaces, schools, public and community buildings and other common uses shall not be less than forty five percent of the gross area of the land under the colony;

Provided that the Director may reduce [after recording reasons therefor] this percentage to a figure not below thirty-five where in his opinion the planning requirements and the size of the colony so justify.

However, things did not stop here as suddenly an application came forth from

builder seeking delicensing of 8 acres of land out of 18.98 acres with further permission for erection of commercial complex thereon. Ignoring all statutory provisions and throwing caution to winds, the authorities acted more promptly than expected. The order granting permission on 8 acres of land to establish a commercial complex out of 18.98 acres was passed on 16.10.2001 while the order to delicense the same area was passed on 18.10.2001 i.e. two days before the order of delicensing, showing a preconceived plan for a commercial complex to be raised within the area licenced for residential complex. This led to a situation that almost every statutory provision contained in the Act and the Rules was violated resulting in a cascading effect compromising open spaces, roads, parks, community buildings and schools etc.

At this juncture the State counsel was asked to refer to the provisions under which the order of delicensing was passed by the authorities. He, however, candidly admitted that there was no such provision in the Act. He tried to justify this act by referring to clause 21 of the General Clauses Act that power to grant a licence also contains implied power to delicense as well. We, however, find the argument bereft of any merit or logic. The Act contains a specific provision for cancellation of licence in case the builder fails to comply with specific conditions of licence. If any such situation had arisen the only option with the authorities was to have invoked powers Under Section 8 of the Act and cancel the licence. In this context the term 'delicensing' is a misnomer. Besides, provisions of the statute have to be strictly interpreted as they exist. Reference to clause 21 of General Clauses Act is only an ex post facto justification and an after-thought. Law is settled on the point that State affidavit/plea cannot augment or add to the orders passed by the authority. The reasons, if any, have to be contained in the order itself as same would only be subject to judicial review. No authority by adopting a circuitous route can circumvent the settled legal position.

This court finds equally absurd the stand of the State as spelt out in response to information sought under RTI (supplied vide memo No. RTI-648/613 dated 15.1.2010) by the office of Director, Town & Country Planning, Annexure P-43, same reads as under:

> Since the Director is empowered under the Act to grant a license and undertake regulatory functions for development of a colony, it is an implied function of the Director to allow an exit route to a developer who is not interested to pursue the development of a project and wishes to withdraw from its obligations. The Director after ensuring that no public interest is harmed, allow such withdrawal after forfeiture of scrutiny fees, licence fees, conversion charges etc. Though at times the same land can be again considered or grant of separate licence. The entire process of grant of licence or change of project is at times referred as "delicensing" though such item does not exist in the Act/Rules.

The aforesaid stand of the Department which aims to provide exit plan to the builder by delicensing part of the housing project (8.0 acre) out of total 18.98 acres for establishing commercial complex is clearly in derogation to the object of the 1975 Act. Such a plea is preposterous in view of provisions of Section 8 which confer enough power on the State to deal with a situation in which a builder is unwilling to complete the project as sanctioned. It is noteworthy that

in the reply dated 15.1.2010, Annexure P-43, the State has clearly admitted that no item such as 'delicensing' exists in the Act/Rules. Thus, origin of power, if any, can be traced to Section 8, which, however, does not deal with delicensing. It contemplates only cancellation of licence and obligations of the Director, Town & Country Planning, thereafter.

There is no dispute about the fact that the provisions of Haryana Apartments Ownership Act, 1983 are also attracted to a group housing project sanctioned under 1975 Act. This finds mentioned in clause 27 of the Builder-Buyer Agreement as well. As per section 6(1) and (2) thereof, the undivided interest of each apartment owner in the common area would be in the percentage expressed in the Deed of Declaration. The percentage of undivided interest of each apartment owner as expressed in the Deed of Declaration has to have a permanent character and cannot be altered without consent of the apartment owners expressed in an amended declaration duly executed and registered as provided. By resorting to delicensing and sanction of the commercial project the authorities completely ignored the vested right of the apartment owners and acted in flagrant violation of section 6 (1) and (2) of 1983 Act. Section 6(1) and (2) read as under:

> **6.** Common areas and facilities-
>
> (1) Each apartment owner shall be entitled to an undivided interest in the common areas and facilities in the percentage expressed in the declaration. Such percentage shall be computed by taking as a basis the value of the apartments in relation to the value of the property; and such percentage shall reflect the limited common areas and facilities.
>
> (2) The percentage of the undivided interest of each apartment owner in the common areas and facilities as expressed in the declaration shall have a permanent character and shall not be altered without the consent of all of the apartment owners and expressed in an amended declaration duly executed and registered as provided in this Act. The percentage of the undivided interest in the common areas and facilities shall not be separated from the apartment to which it appertains and shall be deemed to be conveyed or encumbered with the apartment even though such interest is not expressly mentioned in the conveyance or other instrument.

This apart as per section 2 of the 1983 Act, the builder had to submit a Deed of Declaration within 90 days of being granted part completion under the rules framed under 1975 Act and in case of failure to do so, penalties as provided Under Section 24-A would be attracted. The said section lays down that builder who does not file Deed of Declaration within the period specified Under Section 2 would be punished with imprisonment which may extend to three years and also fine of not less than Rs. 50,000/- and Rs. 10,000/- for each day of continuing offence. From the record it is evident that part completion certificate was granted to the builder vide memo no.5DB-2002/927 dated 10.01.2002 Under Rule 16 of 1976 Rules. However, Deed of Declaration was submitted by the builder on 25.3.2009. It is inexplicable as to why authorities did not resort to the provisions of Section 24-A of the 1983 Act forthwith on expiry of the prescribed period which would be considered as date of offence Under Section 24-A of the Act. Said provision leaves no room for doubt that failure to submit

the Deed of Declaration within the period prescribed attracts a penalty of Rs. 50,000/- straight-way whereafter it is considered a continuing offence inviting a penalty of 10,000/- per day.

The conclusion is inescapable that the submission of Deed of Declaration was intentionally delayed for so many years as there appears to be dishonest intention of the builder from the very inception of project to dupe the buyers by raising a commercial complex within the space sanctioned for group housing project. The design to develop a commercial complex was never divulged either by the builder or State authorities to the innocent buyers at any stage. An ambiguous term was used in the Builder-Buyer agreement that 8.0 acre was reserved for "future development". It is beyond comprehension how builder himself could reserve a part of the area (8.0 acres) out of 18.98 acres for future development. The builder acted in a manner as if he was not governed by any Enactment/Rules. In view of same, the reliance placed by the counsel for the builders repeatedly on Builder-Buyer agreement is absurd. An agreement between parties cannot override the law lay down to regulate urbanization and to prevent ill-planned and haphazard development.

As regards delicensing of an area of 3.9 acres vide order dated 1.9.2010 this court does not intend to give any finding on the same, it being subject matter of CWP No. 2147 of 2012 wherein the matter is pending before the concerned authority. The Petitioners, in the instant petition, however, maintained that they were left with 7.9 acres out of 18.93 acres meant for housing project.

The probability of connivance between the builder and the Department cannot be ruled out in view of delicensing of area meant for residential purposes and allocating the same to commercial projects. Entire sequence of events points to a prior meeting of minds between the builder and the officials who dealt with the matter. Apart from above, the fact that there has been undue enrichment of the builder perhaps with the active involvement of the State officials, cannot be ignored by this Court. Such enrichment is not just in violation of various enactments but also a loss to public exchequer at the cost of general public, the apartment buyers in particular. However, this aspect needs to be investigated by an expert agency. The entire record leaves no room for doubt that various authorities, builders and probably some facilitators got unnatural gains with impunity making the entire scheme contained in Acts and Rules with respect to setting up a group housing project a mockery. Unjust enrichment has been defined by the Courts as retention of benefit by one to the loss of another or retention of money or property of another against the fundamental principles of justice, equity and good conscience. A person is enriched if he has received a benefit and is unjustly enriched if retention of benefit would be illegal. Such enrichment occurs if he has retained money for benefits which actually belonged to another (See Indian Council for Enviro-Legal Action v. Union of India, MANU/SC/0837/2011 : 2011:INSC:498 : (2011)8 SCC 161).

As regards the action of the authorities in "delicensing" area meant for housing project, the same can be termed as nothing but a colourable exercise of power. It is settled position that when a custodian of power is influenced in its exercise by considerations outside those for promotion of which the power is vested, such exercise amounts to colourable exercise of power (see State of Punjab v. Gurdial Singh, MANU/SC/0433/1979 : 1979:INSC:222 : (1980)2 SCC 471). It is settled proposition of law that fraud on power vitiates the State action. If

State seeks to do some action indirectly though it has no power to do it directly, such action cannot be sustained. In other words, fraud vitiates all actions (see Uddar Gagan Properties Ltd. v Sant Singh, MANU/SC/0590/2016 : 2016:INSC:425 : (2016)11 SCC 378).

In Kerala State Coastal Zone Management Authority v. State of Kerala Maradu Municipality & Ors, MANU/SC/0808/2019 : 2019:INSC:651 : (2019)7 SCC 248, setting up of a resort was challenged as the same was set up within 200 meters of the High Tide Line, construction activities whereof are strictly restricted under the provisions of Coastal Regulations Zones. Permission from Kerala State Coastal Zone Management Authority was not sought. The resort was set up on the basis of permission granted by local Panchayat. Kerala High Court found the action illegal and directed demolition of the resort. It rejected the argument that resort would promote tourism in Kerala and it had immense potential for creation of jobs. It held that notification issued under the Environment Protection Act was meant to protect the environment and bring about sustainable development. It held that the law of the land was meant to be obeyed and enforced. The fait accompli of the construction made in teeth of notification was unsustainable. Hon'ble Supreme Court upheld the view of the Kerala High Court.

In the case in hand, no justification whatsoever is forthcoming for delicensing of part of the area meant for housing project for commercial purpose and a huge mall (Ambience Mall) having been allowed to be raised thereon. We are, thus, faced with a similar situation as in Kerala case (supra) due to flagrant violation of provisions of 1975 Act which are meant to prevent ill-planned and haphazard urbanization in or around towns.

In Rameshwar and Ors. v. State of Haryana and Ors. MANU/SC/0237/2018 : 2018:INSC:227 : (2018)6 SCC 215, Hon'ble Supreme Court found that State sought to acquire land issuing notification by the process contemplated under Land Acquisition Act. Certain private builders, however, purchased the land from land owners at higher price post issuance of notification and thereafter State denotified the same. It is thus observed that this action led to unjust enrichment of individuals and revealed unholy nexus between the builder and the State authorities. It found that where power is conferred to achieve a particular purpose, same has to be exercised reasonably and in good faith. Where power is exercised for extraneous or irrelevant considerations, it would unquestionably be a colourable exercise of power. It further held that State had enabled the builder to enter the field after initiation of acquisition to seek colonization of the land covered by acquisition defeating the objective for which the land was acquired. The Supreme Court thus declared the action of State illegal and also ordered CBI investigation into the matter. It would be relevant to reproduce the order of Hon'ble Supreme Court passed while disposing of Writ Petition (Civil) No. 338 of 2015 on 8.7.2015 filed by the instant Petitioners, which is as below:

> Upon hearing the learned Counsel for the Petitioners and upon perusal of the papers, we find that the main allegation, along with other allegations, in the petition is that the Respondent-Builder has put up construction in violation of the Building Bye-laws and without having proper sanction from the concerned authority.

> In the aforesaid circumstances, it would be proper if the Petitioners ventilate their grievance before the High Court. If the Petitioners approach the High Court, the High Court will do the needful to prevent the construction activities if the same are in violation of the Building Bye-laws or if the construction is being put up without getting building plans sanction.
>
> We are sure that if the High Court finds that the irregularities are committed, the same will be looked into quite seriously and shall take appropriate action against all persons including the builders and erring officers as soon as possible.
>
> With the above directions, the writ petition stands disposed of.

Though irregularities, as pointed out above, at the time of initial submission of application sans the layout plan and drastic changes made in the format by the builder, it cannot be disputed that the original idea was to set up group housing complex on entire 18.93 acres. The court thus feels that the rights of the residents of the housing project need to be preserved. The court cannot countenance blatant violation of statutory provisions and erection of buildings, particularly commercial in nature, conceived by a builder for unjust enrichment, at the cost of general public. It cannot turn a blind eye to such illegal actions and possible collusion between private builder and State authorities. The interpolations and/or tampering with the application form and record is, however, a matter of investigation. We thus have no option but to hold that the order delicensing part of residential area for commercial purpose is without authority of law and needs to be quashed. As regards, the illegal actions and offence, if any, made out, and possible collusion between the builder and State authorities, a separate investigation is necessary by an independent agency.

We thus hold as under:

> (a) Delicensing orders dated 18.10.2001 (Annexure P-9), orders granting license/permission vide order dated 16.10.2001 (Annexure P-10) and dated 01.09.2010 (Annexure P-13) passed after submission of Deed of Declaration on 25.03.2009 (Annexure P-8) are hereby quashed;
>
> (b) In view of our findings in the foregoing paragraph, the State shall take necessary consequential steps forthwith;
>
> (c) In view of the fact that the responsibility has to be fixed it is further directed that the Central Bureau of Investigation would investigate the entire issue after registering a formal FIR by a team of Officers to be chosen by the Director, CBI within six weeks from today. An effort shall be made to complete the entire investigation within six months and a status report be submitted in sealed cover within three months.

The original record of HUDA be retained in the safe custody of Registrar (Judicial). CBI shall be at liberty to move an application for obtaining the record after it begins its proceedings.

27. Hence, these appeals have been instituted challenging the above judgment.

28. It is relevant to mention here that pursuant to the order dated 16th January, 2020, the DTCP passed a detailed order dated 5th August, 2021 whereby, the action of de-licensing and grant of permission for construction of the disputed commercial project over 8 acres of land and the commercial and office complex on 5.81 acres of land have been found to be within the four corners of law. The said order is reproduced hereinbelow for ready reference:

> **11.** On the basis of the orders of Hon'ble High Court and hearing granted to the Petitioners alongwith the developer company the following three issues have emerged:
>
> A. Whether, the impugned orders dated 01.09.2010 with regard to approval of building plan is against the provision of licence no. 19 of 1993.
>
> B. Whether, the impugned orders are against the deed of declaration.
>
> C. Whether, the area of licence no. 19 of 1993 was reduced by 3.9 acres on account of impugned orders dated 01.09.2010.
>
> D. Whether, the De-licensing of 8.00 acres land forming part of licence no. 19 of 1993 was permissible.
>
> E. Whether, the Deed of Declaration filed by the licencee is in order.
>
> **12.** I have heard the Petitioner as well as the licencee company and gone through the relevant record. The findings/decision is as under:
>
> **A. Whether, the impugned orders dated 01.09.2020 with regard to approval of building plan is against the provision of licence no. 19 of 1993.**
>
> a. The main contention in the writ petition was that commercial building was being constructed and the licence was not granted for commercial purpose, directly against licence no. 19 of 1993 granted by the Department. It has also been alleged that the commercial building has become property of apartment owners who have purchased the apartment in the residential colony by virtue of Haryana Apartment Ownership Act, 1983. The reference made in the Petitioner is with regard to commercial plot no. 3 of the integrated colony measuring 132.06 acres for which building plans were approved on 01.09.2010.
>
> b. Licence no. 19 of 1993 dated 09.07.1993 was(sic) granted to HLF Enterprises Pvt. Ltd. Seeting up of group housing colony over an area measuring 18.98 acres under the provision of Section 3 of Act of 1975. The Khasra no. of licence no. 19 of 1993 were 527, 528, 529, 530, 531, 532, 533, 534, 535, 2/2/1 and 3 min north. The building plans were approved on 06.05.1996 for an area of 18.98 acres. An area measuring 8 acres (phase-II) was reserved for further expansion.
>
> c. The occupation certificate was granted for building blocks A to M, basement and club to group housing under licence no. 19 of 1993 on 31.12.2001 and thereafter, part completion certificate Under Rule 16 of Rules of 1976 was granted on 10.01.2002.

d. The area measuring 8 acres reserved for further expansion was de-licenced and re-licenced by granted of licence for setting up of commercial colony on 16.10.2001. The de-licensing and re-licensing was done with the approval of Government in reference to the legal opinion of Law & Legislative Department which is reproduced as under:

> .... Power to grant licence also included power to withdraw or refuse withdrawal. It is, however, made clear that the authority would have been within its right to refuse withdrawal of the original licence or even grant of fresh licence. However, there is nothing in the Act debarring the authority for issuing a fresh licence after allowing withdrawal of original licence.....

e. The licence no. 8 of 2001 and orders of de-licensing were issued on 18.10.2001. The Khasra nos, of licence no. 08 of 2001 are 527min, 528, 529 south west min, 530 min, 531 min, 534 min. The Khasra no. of licence no.19 of 1993 for an area measuring 10.98 acres after de-licensing are 529 min, 531 min, 532, 533, 534 min, 535, 2/2/1 and 3min norther.

f. Subsequently, licence no. 12 of 2002 was granted to develop commercial colony for an area measuring 4 acres on 05.06.2002.

g. Thereafter, licence no. 1 & 2 of 2004 for an area measuring 0.317 acres and 0.05625 acres respectively were granted on 08.01.2004. Thereafter, licence no. 3 of 2004 for 0.985 acres was granted on 14.01.2004 and then licence no. 13 to 18 of 2004 was granted for 106.17 acres on 05.02.2004 and licence no. 23 of 2004 dated 11.02.2004 was granted for area measuring 10.552 acres.

h. The khasra no. of licence no. 13 of 2004 are **536**, 537, 538,541, 543, 544, 562, 563, 564, 539, 540, 542, 545, 546, 561 and khasra no. of licence no. 14 of 2004 are 577, 578, 579, 580, 582, 583, 584, 585, 586, 587, 588, 589, 433, 435, 448, 449, 450, **526**.

i. After the grant of the above mentioned licenses zoning plan of integrated group housing/commercial colony namely Ambience Island measuring 132.06 acres including licence no. 19 of 1993 and subsequent licences was issued on 09.11.2004, wherein an area measuring 79.10 acres under the use of residential group housing and 52.965 acres for commercial purpose were allowed.

j. A master layout plan for the integrated colony over an area measuring 132.065 acres was also approved. For proper identification of the land of integrated colony, the entire 'Ambience Island' 1322.06 acres was divided by the colonizer into 29 plots for residential, commercial and institutional purposes as per approved Master Layout Plan on 01.03.2005. As per the Master layout Plan, Lagoon Residential Apartment Complex was assigned Plot no. 29, whereas, the area for which building plans were approved on 01.09.2010 for commercial purpose was assigned plot no. 3 having area 23500 Sq. mtr (5.807 acres).

k. Occupation Certificate for two towers Block BI & CI was granted on

02.03.2005.

l. The plot no. 3 is not part of the licensed area of licence no. 19 of 1993 granted to develop a group housing colony over an area measuring 18.98 acres. The plot no. 3 has been constructed on part of khasra no. **536** and **526** of village Nathupur, District Gurugram. From the perusal of the land schedule of licence no. 13 of 2004 and licence no. 14 of 2004, it is revealed that khasra no. 536 is part of licence no. 13 of 2004 and khasra no. 526 is part of licence no. 14 of 2004. **Hence, the plot no. 3 is not constructed over the land forming part of licence no. 19 of 1993.**

m. The Hon'ble High Court of Punjab and Haryana has quashed the approval of building plans as approved on 01.09.2010 vide orders dated 10.07.2020 passed in CWP No. 20330 of 2015. The Department has already filed SLP No. 14797 of 2020 for challenging the orders of the Hon'ble High Court. The Hon'ble Apex Court vide orders dated 08.310.2020(sic) in SLP No. 11480 of 2020 filed by the licencee company has ordered that no coercive steps be taken by any of the authorities.

Accordingly, I do not find any merit for quashing approval of building plan approved vide memo dated 01.09.2010 (P-11) as the same is not part the licence no. 19 of 1993 granted for area measuring 18.98 acres.

The building plans cannot be restored after the approval of same have been quashed by Hon'ble High Court vide orders dated 10.07.2020 passed in CWP No. 20330 of 2015.

B. Whether, Deed Declaration filed by the licensee is in order.

a) Haryana Apartment Ownership Act, 1983 was enacted to provide for the ownership of an individual apartment in a building and to make such apartment heritable and transferable property and matters connected therewith. As per the provisions of Section 2 of Act of 1983, DOD is required to be filed within a period of 90 days from the dame of grant of occupation certificate/part completion certificate/completion certificate. The provision of Section 2 are reproduced are as under:

> The provisions of this Act shall apply to every apartment lawfully constructed for residential purposes, integrated commercial complexs, flatted factories, Information Technology Industrial Unit, Cyber Park and Cyber City for the purpose of transfer of ownership of an individual apartment in a building whether constructed before or after the commencement of this Act. In case of licenses issued under the Haryana Development and Regulation of Urban Areas Act, 1975 (8 of 1975), the owner of such property/building shall duly execute and get registered a declaration within a period of ninety days after obtaining part completion/completion certificate under the rules framed under the Haryana Development and Regulation of Urban Areas Act, 1975 (8 of 1975), or occupation certificate under the rules framed under the Punjab Scheduled Roads and Controlled Areas Restricted of Unregulated Development Act,

> 1963 (41 of 1963), whichever is earlier, in case of property/building falling in the area developed by the Haryana Urban Development Authority, the owner of such property/building shall duly execute and get registered a declaration within a period of ninety days after obtaining occupation certificate of the building under regulations framed under the Haryana Urban Development Authority Act 1977 (13 of 1977). In case of property/building where the owner has already obtained part completion/completion certificate or occupation certificate under the rules and regulations framed under the said Acts, the period of ninety days shall take effect from the commencement of this Act.

b) DOD is required to be filed for building containing 5 or more apartments and the definition of building is reproduced as under:

> building" means a building containing five or more apartments or two or more buildings, each containing two or more apartments, with a total of five or more apartments for all such buildings and comprising a part of the property;

c) The "common areas and facilities" unless otherwise provided in the declaration or lawful amendments thereto have been defined in Section 3(f) of Act of 1983. Since, DOD has been filed in the present case, therefore, common areas and facilities shall be considered as per DOD.

d) The DOD has been examined in reference to the provisions of the Act of 1983. It has been observed that the DOD has been filed on 25.03.2009 for an area measuring 11.83 acres having khasra Nos. 529 South West, 530, 531, 532, 533, 534, 535, 2/2/1 under licence no.19 of 1993, whereas, actually the Lagoon Residential Complex extends beyond the boundary of licence no. 19 of 1993.

e) It has also been mentioned in the DOD that the Lagoon Residential Complex is part of the integrated township, Ambience Island being developed on 132.065 Acres. The details of khasra nos. mentioned in the DOD are of licence no. 19 of 1993 and licence no. mentioned in the DOD is also licence no.19 of 1993.

f) The area of 11.83 acres mentioned in the DOD is in accordance with the FAR consumed and as per the as built drawings. The perusal of the Shajra plan of the area of the as built drawing super imposed on the Shajra plan reveals that part of the said land forms part of Khasra no. **536 min**, which has not been mentioned in the DOD.

g) As per Section 13 of Act of 1983, the DOD is required to be registered by Sub-Registrar under the Indian Registration Act, 1908. In the present case, the DOD has been registered by Sub-Registrar, Gurugram.

h) Since, the licence no. 19 of 1983 has become part of integrated township having an area of 132.065 acres and the integrated layout plan was also issued on 01.03.2005, therefore, the licence nos. of all the licences forming part of 132.065 acres should have been mentioned

in the DOD and also the revenue details for the area for which DOD was filed. Therefore, the mentioning of licence no. 19 of 1993 only with its land schedule is not correct and thus requires amendment.

Accordingly, the licensee is directed to file amendment DOD by rectifying the revenue particulars and license no. by including additional licenses on which the constructed has been raised beyond the licensed area forming part of licence no. 19 of 1993.

Apart from the above, it was observed that Ambience Developers and Infrastructure Pvt. Ltd. had filed the DOD on 25.03.2009 with a substantial delay. The notice for taking penal action against the licensee was issued on 06.11.2020. In reference to the notice, the licensee made representation viz-a-viz legal provisions and requested for hearing before taking penal action. The request of the licensee has been accepted and hearing has been granted on 13.04.2021. The subsequent action after issuance of notice shall be taken after hearing the licensee company.

C. Whether, the impugned orders are against the Deed of Declaration.

DOD is required was filed for an area measuring 11.83 acres for the group housing colony. As deliberated in part 10-A above, the land forming part of plot no.3 is separate from the land of licence no.19 of 1993. Hence, impugned orders with regard to approval of building plans of plot no. 3 area not related the DOD filed for Lagoon Residential Complex.

D. Whether, the area of licence no. 19 of 1993 was reduced by 3.9 acres on account of impugned orders dated 01.09.2010.

The DOD was filed for an area measuring 11.83 acres and the Petitioner has worked out the reduced area measuring 3.9 acres by excluding the area under fencing measuring 7.96 acres from 11.83 acres. The Petitioner has not referred to the actual area of plot no.3, which is 5.807 acres. As deliberated in para 12-A above, the land forming part of plot no. 3 is separate from the land of licence no. 19 of 1993. **Hence, the area of licence no.19 of 1993 was not reduced by 3.9 acres on account of impugned orders dated 01.09.2010.**

E. Whether, the De-licensing of 8.00 acres land forming part of licence no. 19 of 1993 was permissible.

a) The licence no. 19 of 1993 was granted to develop group housing colony over an area measuring 18.98 acres. The building plans of the group housing colony was approved on 06.05.1996 and 8.00 acres of land was reserved for future expansion as phase-II. However, subsequently a request was submitted by the licensee wherein be requested to de-license 8.0 acre land from the already granted license and to re-licence the same for setting up of commercial colony.

b) The matter was examined and on the basis of earlier advice of Law and Legislative Department, Haryana, the request was considered. This advice is in consonance with Clause 21 of the General Clauses Act, 1897. The above advice of Law and Legislative Department of the State was categorically mentioned which processing the case of 8.00 acres of

Group Housing land for de-licensing and for re-licensing the same land for commercial complex which was permissible activity in the special zone earmarked in the Final Development Plan prevailing at that time.

c) In order to make explicit provision in the law, amendment has been carried out by the State Legislature by inserting Sub-section (3A) in Section 3 of Haryana Development and Regulation of Urban Areas Act, 1975 (hereinafter referred to as 'Act of 1975') which is effective from 30th January 1975 and notification in this regard has been issued on 14.09.2020. The inserted provision in the Act of 1975 is as under-

> (3A) "Where, by virtue of any section of this Act, power to grant any license or issue any notification, order, rule or direction is conferred, then that power shall include power exercisable in like manner and subject to terms and conditions, as may be prescribed, to add to, amend, vary, suspend, withdraw or rescind such licence or such notification, order, rule or direction or to de-licence".

d) The Statement of Objects and Reasons before enactment of the inserted provision as appended to the Bill passed by the State Legislature duly clarifies that the Bill was proposed primarily to make express statutory provisions to clarify certain provisions of the Haryana Development and Regulation of Urban Areas Act, 1975 by drawing upon the land down law in provision of Section-21 of the General Clauses Act, 1897 and Section-20 of the Punjab General Clauses Act, 1956 and to validate various actions taken and being taken by the Department as a consequence which would have the effect of reconciling the conflicting judicial pronouncements on the issue. **Hence, no ambiguity w.r.t. de-licensing remains as on with regard to de-licensing of 8.00 acres land forming part of licence no. 19 of 1993.**

11. The matter is decided with the directions given in the para 10-B above. These orders are appealable Under Section 19 of Haryana Development and Regulations of Urban Areas Act, 1975.

Final orders reserved on 19.10.2020 are pronounced today. To be communicated to the all concerned.

(Emphasis Supplied)

29. The aforesaid order was challenged before the High Court in Civil Writ Petition No. 4573 of 2022, which was disposed of as withdrawn on 9th March, 2022 with liberty to exhaust the statutory remedy Under Section 19 of the Haryana Development and Regulation of Urban Areas Act, 1975[16], pursuant where to Appeal No. 19 of 2022 was filed and stands rejected vide order dated 24th October, 2024 on the ground of non-maintainability and lacking in merit. The said order is under challenge in Civil Writ Petition No. 6047 of 2025, pending consideration before the High Court of Punjab and Haryana at Chandigarh.

II. ARGUMENTS ON BEHALF OF APPELLANTS

30. Shri Abhishek Manu Singhvi, and Shri Mukul Rohatgi learned Senior Counsel,

representing the Appellants-developers, vehemently and fervently contended that the High Court has fallen in grave error in entertaining the Civil Writ Petition No. 20330 of 2015 which was filed after long and unexplained delay of more than 10 years for oblique purposes and mala fide motives. It was submitted that the flat owners' association i.e, ALARWA had earlier instituted Civil Writ Petition No. 2147 of 2012 seeking almost identical reliefs, which came to be disposed of by the High Court vide order dated 16th January, 2020. The impugned judgment, however, completely glosses over the earlier order, thereby rendering the High Court's approach self-contradictory. Furthermore, the High Court erred in entertaining a highly belated writ petition involving gravely disputed questions of fact, at the instance of the writ Petitioners who are well versed in law, Respondent No. 1-Amitabha Sen being a practising Advocate. In rendering the impugned decision, the High Court misread the documentary record and misconstrued the material facts.

31. It was submitted that in the original application dated 17th February, 1992, filed by M/s. HLF Ltd, a generic reference was made that the residential colony would be built on 18.98 acres of land. However, the Appellants-developers, at the very inception, intended to bring up the Ambience Lagoon Housing Project on 10.98 acres of land only. The approved layout plan for the Ambience Lagoon Housing Project clearly portrayed that it would be set up on 10.98 acres of land only. The entire thrust of the High Court's decision that the area of 8 acres, de-licensed vide order dated 18th October, 2001 was also meant for Ambience Lagoon Housing Project, is patently erroneous and contrary to record. It was urged that the burden was on the writ Petitioners before the High Court to establish by unimpeachable material that the entire 18.98 acres of land was meant for the residential colony. The finding recorded by the High Court that no layout plan was filed at the time of submission of the permission to construct is also erroneous and contrary to record. The approved layout plan dated 24th July, 1995 was available right from the inception and a copy thereof had been submitted on record by the Appellants-developers with their reply to the captioned Civil Writ Petition No. 20330 of 2015. Attention of this Court in this regard was drawn to paragraph Nos. 5 and 6 of the said reply, which reads as below:

> **5.** That after having obtained the license no. 19/1993 for the development of group housing colony, the Respondent No. 3 in 1994-95 decided to develop group housing colony on 10.98 acres of land, in the first phase and accordingly submitted an application for sanction on building plan for development of group housing colony only on 10.98 acres of land. The balance 8 acres of land was reserved by Respondent No. 3 for further development. The land admeasuring 10.98 acres and 8 acres were clearly bifurcated, identified and demarcated not only on paper but also at site. Copy of the said plan showing 3 parcels of land i.e. 10.98 acres, 8 acres and 4 acres is annexed herewith and marked as Annexure 'R-3/6'.
>
> **6.** That under the sanctioned plan, the Respondent No. 3 were to provide 24 mtrs wide access road from NH-8. The area of land utilized for the said access road came to 4.20 acres. The group housing colony along with internal roads, EWS apartments, school and sewage treatment were to be developed on the balance 6.78 acres of land. The hatched plan showing separate areas of the access road of 24 mtrs. and other components and group housing complex is annexed herewith and marked as Annexure 'R-3/7'. As per norms of Town and Country Planning, 15% of the area was left for greens.

32. It was vehemently and fervently urged that the duly approved layout plan clearly

indicated that the residential colony would be constructed only on 10.98 acres of land.

33. Shri Abhishek Manu Singhvi, learned Senior Counsel, while drawing attention of the Court to Apartment Buyers' Agreement dated 20th October, 2001 executed between M/s. HLF Ltd. and the writ Petitioners (Respondent No. 1-Amitabha Sen and Respondent No. 2-Dipika Sen), submitted that the said agreement expressly mentioned the Appellants-developers' intention to develop the Lagoon Residential Apartments Complex over an area admeasuring 10.98 acres out of the total licensed land of 18.98 acres in Phase-I, and that the building plans for the said Phase-I development had been duly sanctioned and approved by the competent authority in the office of the DTCP. On this basis, it was contended that the writ Petitioners were, from the very beginning, fully aware of the scope of the licensed development and the phased manner in which the project was to be executed, thereby repelling the aspersions of fraud, concealment or illegality levelled in the writ petition in relation to the construction of the subject housing project. There was no averment in the writ petition that the builder promised in the Apartment Buyers' Agreement that the housing project would be developed over an area of more than 10.98 acres of land.

34. Learned Senior Counsel Shri Singhvi and Shri Rohatgi strenuously contended that there was no violation of the applicable building bye-laws in the construction of the residential colony. They asserted that the stipulated requirement of maintaining 80% open spaces, public amenities and green areas had been duly complied with, within the 10.98 acres of land earmarked for the residential colony and the development is completely in conformity with the project brochure, and the approved layout plan. They urged that the High Court's conclusion to the contrary, is unreasonable, arbitrary and against the material on record.

35. It was further contended that the construction of the Ambience Mall/Ambience Corporate Office Tower-I over 8 acres of land and the Leela Ambience Hotel over 4 acres of land, which together comprise the integrated commercial complex on Plot No. 1, commenced in the year 2002 and was completed by 2007. The writ Petitioners and other flat owners were well aware of the said construction activities undertaken throughout this period of five years. Yet they chose to remain silent for this long period and it was only in the year 2010 that the construction of the commercial complex was challenged for the first time, by way of a civil suit, which was subsequently dismissed as withdrawn. Civil Writ Petition No. 2147 of 2012, filed by ALARWA, raising similar concerns culminated in a direction by the High Court noting that the issues relating to the alleged violations in construction of the projects would have to be examined by the DTCP. Pursuant to such direction, the DTCP, after due consideration of material available on record, has passed a detailed reasoned order dated 5th August, 2021, expressly ruling out the concerns of illegality or violations in the impugned actions of the developer.

36. Moreover, the writ petition giving rise to the present appeals suffers from gross delay as the same was instituted in the year 2015. Notably, Respondent No. 1-Amitabha Sen had earlier represented ALARWA in Civil SuitNo. 27 of 2010 as its Advocate and hence the successive institution of proceedings by the same set of interested flat owners, choosing different forums at varying points of time, clearly demonstrates an intentional attempt at covering up for the delayed action and indulging in forum shopping, with the collateral objective of exerting pressure upon the Appellants-developers for extraneous and oblique motives. It was contended that such repeated invocation of jurisdictions demonstrates a calculated attempt to re-agitate settled issues and to pursue couched personal agenda under the guise of public interest litigation.

37. It was further contended that there was no element of illegality or criminality in the procedure followed by the Appellants-developers or the planning authority and thus the High Court committed manifest error in directing the Central Bureau of Investigation[17] to straightaway register an FIR. The said direction is in teeth of settled jurisprudential principles. The impugned judgment rests purely on conjectures and surmises, bereft of any credible or tangible basis justifying such a drastic direction.

38. They referred to the chargesheet dated 29th December, 2023 filed by the CBI in the Court of Chief Judicial Magistrate, Panchkula and urged that after thorough investigation, the agency found no criminality in grant of the original license; did not support the alleged absence of layout plan and held no substantive/tangible illegality in de-licensing/re-licensing process, zoning approvals, or delayed filing of Deed of Declaration. The chargesheet categorically records that both the de-licensing of the 8 acres and the grant of the fresh license were approved on the same date, i.e. 16th October, 2001, and the formal letters were dispatched on 18th October, 2001; consequently, it was not a case where the license for the commercial project was issued prior to the de-licensing of the said land. Moreover, the investigation revealed that commercial complex constructed on Plot No. 3 does not overlap on any part of land set apart for development of the residential colony. However, the investigation agency did return a finding that the Appellant-Raj Singh Gehlot and the Appellant No. 3-Ambience Developers concealed some material facts from flat owners while executing the Apartment Buyers' Agreement in October 2001, thereby committing offences of cheating and conspiracy Under Sections 420 and 120B of the Indian Penal Code, 1860. As per learned Senior Counsel, the said finding is patently erroneous and yet to be tested before the appropriate court and hence, the same cannot be read to the detriment of the Appellants-developers.

39. Learned Senior Counsel thus submitted that the conclusions drawn by the High Court in the impugned judgment are manifestly erroneous and contrary to record. Furthermore, most of the conclusions in the impugned judgment have not been found substantiated pursuant to extensive investigation conducted by the CBI and by the DTCP while passing the detailed reasoned order dated 5th August, 2021.

40. It was further submitted that the High Court has contradicted itself while deciding the writ petition holding the actions of the Appellants-developers to be in contravention of law while specifically observing that the issues could not be decided because the order dated 1st September, 2010 passed by the DTCP was subject matter of challenge in 2012 Writ Petition.

41. Learned Senior Counsel appearing for the Appellants-developers urged that the High Court gravely erred in entertaining a writ petition involving seriously disputed questions of fact while exercising its jurisdiction Under Article 226 of the Constitution of India. They urged that a writ petition ought not to be entertained, particularly where the issues raised require detailed evaluation of evidence and factual determination beyond the scope of writ proceedings.

42. It was further submitted that all the issues raised in the writ petition have been extensively examined by the competent authority i.e. DTCP who passed a detailed reasoned order dated 5th August, 2021 wherein, the actions of de-licensing and the consequent grant of permission to raise the commercial complex on 8 acres of land have been found to be within the legal framework. The said order is under challenge before the High Court in Civil Writ Petition No. 6047 of 2025, and hence, the findings recorded in the impugned judgment would prejudice the Appellants-developers gravely

and may also influence the outcome of the said writ petition. Hence, it was submitted that the impugned judgment deserves to be quashed and set aside leaving it open for the High Court to examine the legality and validity of the order dated 5th August, 2021 in the pending writ petition.

43. Shri Tushar Mehta, learned Solicitor General, along with Shri Lokesh Sinhal, learned A.A.G, representing the Appellant-Chief Town Planner, Town and Country Planning Department, in Civil Appeal @ SLP(C) No(s). 14797 of 2020, submitted that the expression "de-licensing" is a misnomer in law. Shri Mehta contended that a "license" under the 1975 Act is essentially a permission regulating the use of land for any of the purposes falling within the definition of a "colony" Under Section 2(c) of the 1975 Act. What is colloquially referred to as "licensing" is, in substance, nothing but permission for change of land use. Such permission, it was argued, can validly be granted, modified, or regulated from time to time in accordance with law, including by permitting a modification of the purpose of land use or by simply accepting the surrender of the license by the coloniser.

44. Learned Solicitor General relied upon the provisions of General Clauses Act, 1897 to contend that the power to grant a license, by necessary implication includes the power to withdraw, modify, or rescind the same. It was submitted that the DTCP, being the competent authority to grant a license for land use, is equally empowered to de-license the land or to bifurcate a license into residential and commercial components, in accordance with the applicable statutory framework.

45. Learned Solicitor General further submitted that the State Legislature has now enacted Haryana Development and Regulation of Urban Areas (Second Amendment and Validation) Act, 2020[18] as a legislative measure validating actions taken by the DTCP under the 1975 Act. The 2020 Amendment expressly recognises that the power to grant licenses includes the power to modify, suspend, revoke, or de-license them, in sync with Section 21 of the General Clauses Act, 1897, and retrospectively validates actions taken earlier in good faith, without conferring any new authority. He thus urged that the impugned judgment is unsustainable in the eyes of law.

46. Shri Mehta further submitted that, upon an enquiry pursuant to the impugned judgment passed by the High Court, it has come to light that as many as 58 projects have been developed in a similar fashion pursuant to de-licensing undertaken in exercise of statutory powers. He submitted that if the impugned judgment is allowed to stand, all such projects, which were brought up long back, would be exposed to serious jeopardy.

47. Ms. Madhavi Divan, learned Senior Counsel appearing for the Appellant-Kohler India Corporation Private Limited[19] in Civil Appeal @ SLP (C) No(s). 5971 of 2021, submitted that the said Appellant had purchased commercial premises situated on the 6th floor of Ambience Corporate Office Tower-I from Appellant No. 3-Ambience Developers under a registered sale deed dated 27th September, 2007, for a total consideration exceeding Rs. 30.81 crores, along with applicable stamp duty and registration charges. It was contended that any coercive or precipitative action in respect of the said complex would directly and adversely affect the crystalized proprietary rights of the Appellant-Kohler India Corporation. It was further submitted that the Appellant-Kohler India Corporation had not been impleaded as a party to the original writ proceedings, despite being a bona fide purchaser for consideration.

48. They, thus, implored the Court to allow the appeals and set aside the impugned

judgment while leaving it open to the parties to pursue Civil Writ Petition No. 6047 of 2025 pending before the High Court.

III. ARGUMENTS ON BEHALF OF RESPONDENTS

49. Ms. Uttara Babbar, learned Senior Counsel and Ms. Kamini Jaiswal, learned Counsel, appearing for the respective Respondents, submitted that the Ambience Lagoon Housing Project was originally sanctioned over an area admeasuring 18.98 acres under License No. 19 of 1993. It was contended that the Appellants-developers, in collusion with State authorities, unlawfully reduced the residential area first to 10.98 acres and thereafter to 7.93 acres only by diverting the illegally de-licensed portions of the originally licensed area for construction of the Ambience Mall and other commercial complexes, thereby defeating the object of the original license and acting in patent violation of the governing statutory framework.

50. It was submitted that the Appellants-developers had made deliberate strategic interpolations in the original application form, specifically referring to the omission in Clause 2(v), which expressly required the submission of a layout plan. It was further contended that, notwithstanding the absence of a layout plan, the competent authorities proceeded to entertain the application and granted the license with closed eyes. According to the Respondents' counsel, such approval in the face of a mandatory statutory deficiency could not have materialized without active connivance and collusion on the part of the concerned officials.

51. It was further submitted by the learned Counsel that the 1975 Act does not contain any express or implied provision enabling the State authorities to de-license land once a license has been granted for a specific project and purpose. Any purported exercise of de-licensing is therefore wholly without jurisdiction, de hors the statutory framework and was rightly struck down by the High Court as contrary to the Act and the Rules framed thereunder.

52. Learned Counsel for the Respondents contended that, notwithstanding representations in the brochures assuring nearly 80% open and community areas, the subsequently raised illegal commercial constructions substantially increased ground coverage and correspondingly impinged upon green and open spaces of the residential colony. It was submitted that the progressive regression in the land area earmarked for the residential colony resulted in a gross violation of the permissible Floor Area Ratio[20], thereby imposing an excessive and unsustainable burden on the existing civic and infrastructural facilities in the residential colony.

53. It was argued that the Court Commissioner's report dated 19th September, 2016 submitted in pursuance of the order dated 16th August, 2016 passed by the National Green Tribunal, New Delhi[21] conclusively establishes that the portions of land areas earmarked as Green Area Nos. 10 and 11 in the sanctioned layout plan were never developed or maintained as green spaces on the ground. Instead, Green Area No. 10 stands encroached upon by a multi-storeyed commercial building, while Green Area No. 11 has been converted into a road and areas of private use. The report, being an independent factual verification ordered by the NGT, clearly demonstrates a gross deviation from the sanctioned plan and substantiates the allegations of misuse and illegal construction by the concerned Respondents. They thus implored the Court to dismiss the appeals and uphold the impugned judgment.

IV. DISCUSSION AND ANALYSIS

54. We have given our thoughtful consideration to the submissions advanced at the bar and have gone through the impugned orders and the material placed on record.

55. The main thrust of arguments of the writ Petitioners before the High Court was that there had been a blatant violation of the statutory provisions and the rules made thereunder while raising the residential colony and the commercial complex. The specific case set up by the writ Petitioners before the High Court was that while originally, the residential colony was sanctioned over land area admeasuring 18.98 acres, the construction was in fact carried out only on 10.98 acres of land. The writ Petitioners thus, prayed for demolition of the commercial complex on the ground that it had been constructed by encroaching on 8 acres of land which, according to them, was originally earmarked for the residential colony and the use thereof could not have been diverted for raising the commercial construction. They further sought a direction for a CBI investigation into the alleged usurpation of 8 acres of residential land by the Appellants-developers in active connivance with the concerned authorities. Additionally, a prayer was made for issuance of appropriate directions to the Appellants-developers to adhere to and maintain the prescribed ground coverage and the maximum FAR applicable to the group housing project under the governing statutory framework. In submissions before the High Court, the Appellants-developers as well as the State authorities, took a specific stand that out of the original land mass admeasuring 18.98 acres, an extent of 8 acres was de-licensed in accordance with law vide Memo No. 5DP-2001/13948 dated 18th October, 2001 and thereafter permission was diligently granted by the DTCP to construct a commercial complex on this chunk of land admeasuring 8 acres, which had been already been de-licensed, vide Endst. No. SDP 2001/13959 dated 18th October, 2001.

56. The High Court observed that despite the absence of a layout plan and the presence of serious omissions, deletions, interpolations and tampering in the original application form, allegedly benefiting the Appellants-developers, the authorities inexplicably accepted the defective application and granted the license without noticing such glaring irregularities. According to the High Court, the entire exercise was fraudulent, which in turn had a cascading effect on the Ambience Lagoon Housing Project, including non-adherence to FAR, lack of open spaces, insufficient width of streets/roads and total lack of essential community facilities such as schools and other public amenities. The High Court noted that the possibility of the Appellants-developers acting in collusion with the concerned authorities and duping innocent apartment buyers, could not be ruled out. The buyers were made to sign on the dotted line, as by using couched language, some misleading clauses were introduced by the Appellants-developers in the Apartment Buyers' Agreement, in connivance with the State authorities. The High Court concluded that as per the approval granted by the DTCP, the township was to be constructed on 18.98 acres of land from which 80% area was to be reserved for open and community services. The de-licensing of 8 acres out of the total land admeasuring 18.98 acres, and the subsequent grant of permission for raising the commercial complex thereon, were done in sheer violation of the extant statutory provisions, with the authorities acting more promptly than warranted. The order granting permission for construction of a commercial complex over 8 acres of land falling within 18.98 acres licensed area was passed on 16th October, 2001 whereas the order de-licensing the said 8 acres was issued subsequently on 18th October, 2001. The fact that permission preceded de-licensing by two days was held to indicate a preconceived and premeditated plan to raise a commercial complex within land originally licensed for residential colony. The High Court also held that the Town Planning authority had no power to de-license the land in respect of which a license had already been granted for a particular purpose, as there was no provision for de-licensing under the 1975 Act or rules framed thereunder.

It was further held that, by dint of such fraudulent action, the Appellants-developers stood unjustly enriched, while the flat owners were deprived of their legitimate entitlement to open spaces, amenities and green areas. It was accordingly concluded that the de-licensing order dated 18th October, 2001; the order granting license/permission dated 16th October, 2001 and the order dated 01st September, 2010 passed pursuant to submission of the deed of declaration dated 25th March, 2009, were illegal and hence, the same were fit to be quashed and struck down. The State was further directed to take all consequential steps; the CBI was directed to investigate the issues after registering a formal FIR and to submit a status report before the High Court in a sealed cover within the stipulated time.

57. From the foregoing narration of facts and circumstances, the following indisputable conclusions can be drawn.

58. That the Apartment Buyers' Agreement executed in the year 2001 unequivocally conveyed that the Ambience Lagoon Housing Project (residential colony) would be coming up on 10.98 acres of land out of the total licensed land of 18.98 acres in Phase-I.

59. Upon a careful examination of the pleadings in Civil Writ Petition No. 20330 of 2015, we find no averment whatsoever to the effect that the flat owners, including the writ Petitioners, were unaware of the contents of the Apartment Buyers' Agreement. Rather they are completely silent on this most vital aspect of the case which flows from the contractual obligations of the parties. On the contrary, the Appellants-developers took a specific and categorical plea in their reply that the township had been developed strictly in accordance with the area and specifications stipulated in the Apartment Buyers' Agreement as well as the approved layout plan. It was only for the first time in the rejoinder that the writ Petitioners sought to propound a new theory, namely, that the Apartment Buyers' Agreement had been drafted by the Appellants-developers to serve their own interests, allegedly taking advantage of a dominant position. According to the Respondents, the said agreement could, therefore, not be enforced to the detriment of the apartment owners.

60. At this stage, we may advert to the observations made by the Civil Judge, Junior Division, Gurgaon, Haryana in paragraph 13 of the order dated 10th September, 2014 while deciding the application filed by the ALARWA Under Order XXXIX Rule 2 of the Code of Civil Procedure, 1908, which read as under:

> Admittedly, the Plaintiff is claiming their right as per the said Apartment Buyers Agreement and they cannot go beyond the said Agreement. It is clearly mentioned in the said agreement that the Residential Apartment Complex is to be built on 10.98 acres of land out of the total licenced land i.e. 18.98 acres. As per the said Agreement service road is meant to be used by all complex residents and users of integrated township. Admittedly the said road is the only main road passing through the entire township and is a common road to be used by all occupants, visitors or other persons having interest in the township. In such circumstances, it cannot be said that balance of convenience lies in favour of the Plaintiff even if he proves the prima facie case in his favour. Further even if it is assumed or presumed that the said road is meant only for the Plaintiffs use then also the balance of convenience is also not in their favour.

61. We are of the considered view that, as the writ petition was instituted in the year

2015 containing allegations of the so-called misuse of dominant position by the Appellants-developers, the plea raised for the first time in the rejoinder that the writ Petitioners were compelled to sign the Apartment Buyers' Agreement by keeping them in dark is wholly unconvincing and untenable. The finding recorded by the High Court that the flat owners were made to sign on the dotted line is, ex facie, conjectural and unsupported by any pleadings or credible material or pleadings. Significantly, the apartment buyers did not plead, either in the writ petition filed in 2015 or in the earlier civil suit instituted in 2010, that any fraud, misrepresentation, coercion, or deceit had been practised in the execution of the Apartment Buyers' Agreement. In the absence of any foundational pleadings or credible evidence, the conclusion arrived at in the impugned judgment that the agreement was executed under misrepresentation of facts is wholly unjustified and unsustainable in law.

62. The finding recorded by the High Court that any agreement between the parties cannot override the law laid down to regulate the regulations and to prevent hazardous development, is also contrary to record. It bears reiteration that the Apartment Buyers' Agreement was never put to challenge in the writ proceedings. That apart, it is a matter of serious concern that the High Court proceeded to entertain and effectively sustain a challenge to the said agreement, despite the absence of any foundational pleadings, and that too after the lapse of more than a decade from its execution.

63. Though the writ Petitioners have taken a vacillating stand before the High Court and this Court with regard to the actual area on which the residential colony stands but from the material available on record, more particularly, the order dated 5th August, 2021 passed by the DTCP, it becomes crystal clear that the residential colony has been constructed on 11.83 acres of land which includes the extent of land utilised to develop the approach road.

64. Inspite of the seriously disputed questions of facts, the High Court seems to have been swayed by the unsubstantiated assertions of the writ Petitioners and proceeded to hold that the Appellants-developers had reduced the availability of green areas and amenities/facilities. For reaching to this conclusion, the High Court treated the residential colony as sanctioned over 18.98 acres.

65. We are of the firm view that the High Court has proceeded on a totally erroneous assumption that the residential colony was required to be developed over the entire 18.98 acres and not 10.98 acres. The above conclusion drawn is ex facie erroneous in face of the contract executed between the parties and the approved layout plan.

66. The observation of the High Court that the layout plan was not placed before it, is also contrary to the record. In a writ petition, which is decided on affidavits, the burden of establishing the existence of the facts asserted squarely lies upon the writ Petitioner, and such burden can be discharged only by placing clear and unimpeachable material on record. This Court in Bharat Singh v. State of Haryana MANU/SC/0047/1988 : AIR 1988 SC 534, while emphasising that a writ Petitioner is required to specifically plead and substantiate the supporting facts by placing cogent material on record, held as follows:

> **13.** As has been already noticed, although the point as to profiteering by the State was pleaded in the writ petitions before the High Court as an abstract point of law, there was no reference to any material in support thereof nor was the point argued at the hearing of the writ petitions. Before us also, no particulars and no facts have been given in the special leave petitions or in the

writ petitions or in any affidavit, but the point has been sought to be substantiated at the time of hearing by referring to certain facts stated in the said application by HSIDC. **In our opinion, when a point which is ostensibly a point of law is required to be substantiated by facts, the party raising the point, if he is the writ Petitioner, must plead and prove such facts by evidence which must appear from the writ petition and if he is the Respondent, from the counter-affidavit. If the facts are not pleaded or the evidence in support of such facts is not annexed to the writ petition or to the counter-affidavit, as the case may be, the court will not entertain the point**. In this context, it will not be out of place to point out that in this regard there is a distinction between a pleading under the Code of Civil Procedure and a writ petition or a counter-affidavit. While in a pleading, that is, a plaint or a written statement, the facts and not evidence are required to be pleaded, in a writ petition or in the counter-affidavit not only the facts but also the evidence in proof of such facts have to be pleaded and annexed to it. So, the point that has been raised before us by the Appellants is not entertainable. But, in spite of that, we have entertained it to show that it is devoid of any merit.

(Emphasis Supplied)

67. Respondent Nos. 1 and 2, being the writ Petitioners before the High Court, in our considered opinion, miserably failed to do so. On the contrary, it has been the consistent and emphatic case of the Appellants-developers that the layout plan was always available on record and had, in fact, been filed before the High Court along with their reply.

68. Upon examining the reply filed by the Appellants-developers to Civil Writ Petition No. 20330 of 2015, it is evident that a copy of the layout plan demarcating three distinct parcels of land, measuring 10.98 acres, 8 acres, and 4 acres respectively, was duly placed on record. Moreover, the writ Petitioners themselves have expressly referred to the said layout plan and relied upon its contents in their rejoinder, purportedly to demonstrate what they allege to be inconsistencies in the Appellants-developers' stand.

69. It is an undisputed position that the construction of the Ambience Mall/Ambience Commercial Tower-I over an area of 8 acres of land and the Leela Ambience Hotel over an area of 4 acres of land commenced in the year 2002, and both the projects were completed somewhere in the year 2007-2008. The flats in Ambience Lagoon Residential Colony had been occupied in the beginning of this period and thus, the flat owners cannot be expected to be ignorant of the construction activities going on in the area appurtenant to the residential colony. The rank silence and utter indifference shown by the flat owners in taking any action for a period of almost a decade for the alleged violation of their rights creates a serious doubt on the bonafides of the actions of the writ Petitioners. Admittedly, Amitabha Sen, writ Petitioner No. 1 before the High Court had represented the Plaintiff-ALARWA in Civil SuitNo. 27 of 2010, which was instituted in respect of an analogous dispute and was ultimately disposed of as withdrawn.

70. The present writ petition came to be filed in the year 2015, that is, almost 8 years after the Ambience Mall and the Leela Ambience Hotel had been constructed and had become fully operational. In this backdrop, the gross delay in approaching the High Court constituted a material and decisive factor, which by itself ought to have disentitled the writ Petitioners to any sort of discretionary relief Under Article 226 of the Constitution. However, the High Court seems to have totally ignored this material aspect of the case which, in our opinion, goes to the root of the matter.

71. Furthermore, in Civil Writ Petition No. 2147 of 2012, which raised overlapping and substantially similar issues, the Division Bench of the High Court, vide order dated 16th January, 2020, had directed the DTCP to examine the entire controversy and to pass a detailed and reasoned order. Pursuant thereto, the DTCP has passed a comprehensive order dated 5th August, 2021, and held that the approval of building plans for Plot No. 3-Ambience Corporate Office Tower 2, did not violate License No. 19 of 1993, as Plot No. 3 formed part of separate licenses (Licenses Nos. 13 and 14 of 2004) and not the original group housing license No. 19 of 1993. The DTCP also concluded that the de-licensing of 8 acres reserved for Phase-II expansion under License No. 19 of 1993 and its re-licensing for commercial use was legally permissible, being supported by prior legal opinion, Section 21 of the General Clauses Act, 1897, and expressly validated by the 2020 Amendment inserting Section 3(3A) in the 1975 Act with retrospective effect. It was further held that the area under License No. 19 of 1993 was not reduced by 3.9 acres by effect of the order dated 01st September, 2010. The Deed of Declaration, duly registered, was found to be broadly in conformity with the Haryana Apartment Ownership Act, 1983. Certain deficiencies were noted regarding incomplete disclosure of licenses forming part of the integrated township, for which amendment was directed and penalty was charged. Consequently, no merit was found in the challenge to the approval of building plans or the de-licensing action, subject to corrective steps being taken in respect of the Deed of Declaration. The said order conclusively determines the controversy in favour of the Appellants-developers.

72. Section 3(3A), introduced by the 2020 amendment retrospectively validating the disputed actions of the town planning authorities, is not under challenge before this Court, nor would it be appropriate to entertain any such challenge in the present proceedings, particularly when the said issue can be independently agitated by the parties before the appropriate forum, if they so desire.

73. Moreover, the High Court itself, while rendering the impugned judgment, expressly recorded that it would not enter into or examine the issues covered by the order dated 1st September, 2010. Notwithstanding the said self-imposed limitation, the High Court, at the stage of final adjudication, proceeded to hold that the entire action of the Appellants-developers, including the construction of the commercial complex, was in violation of law, and went on to quash the order dated 1st September, 2010. This, in our opinion, indicates a fundamental error in the impugned judgment.

74. It is also not in dispute that the order dated 5th August, 2021 passed by the DTCP in effect covering all the disputed issues is subject matter of assail in Civil Writ Petition No. 6047 of 2025, which is pending before the High Court and in case the impugned judgment is upheld, it would definitely prejudice the outcome of the said writ petition and effectively foreclose all available defences of the Appellants-developers.

75. We are further of the view that the direction given by the High Court to the CBI for registering the FIR was also uncalled for as the said direction was given on unverified and inconclusive material. Be that as it may, in the intervening period, the CBI registered the FIR and has since filed a report Under Section 173(2) of the Code of Criminal Procedure, 1973. In the said report, the act of de-licencing of 8 acres of land has been found to be in accordance with law. However, the only illegality attributed to the Appellants-developers pertains to the alleged misrepresentation in the Apartment Buyers' Agreement, in respect whereof the following findings have been recorded in the report:

(16.77) Investigation further revealed that the de-licencing & re-licencing of the

8 acre of land for commercial purpose was approved on 16.10.2001 and even then, the builder executed Builder-Buyer Agreement dated 20.10.2001 with Sh. Amitabha Sen & Smt. Dipika Sen, Petitioner of the instant matter in the Hon'ble High Court of Punjab & Haryana, without mentioning a word about the same.

(16.78) Investigations revealed that before the Builder-Buyer Agreement with Sh. Amitabha Sen, the builder had already applied for de-licensing 8 acres for commercial use and this fact was concealed from the buyer. Although the Builder-Buyer Agreement mentioned a license for a group housing colony on 18.98 acres, details about the application for commercial conversion and subsequent approval were omitted, misleading the buyer. The de-licensing & re-licensing of the 8 acres for commercial use was sanctioned on 16.10.2001. Surprisingly, on 20.10.2001, the Builder-Buyer Agreement with Sh. Amitabha Sen & Smt. Dipika Sen was executed without any mention of these crucial developments. Investigation has revealed that in the builder buyer agreement, it is, inter alia, mentioned that

> .....The company intends/plans to develop Lagoon Residential Apartments Complex on 10.98 acres of land out of total licensed land of 18.98 acres in phase-i building plans of which have already been sanctioned/approved by the Competent Authority at the Office of Director, Town & Country Planning, Haryana, Chandigarh.....

From the above, it is evident that it was clearly mentioned in the Builder-Buyer Agreement that the company holds licence to set up a group housing colony on 18.98 acre. However, the facts pertaining to filing of application for conversion to commercial licence for the rest of 8 acres and subsequent obtainment of the said commercial licence was concealed from the buyer.

(16.79) Investigation has revealed that M/s HLF Enterprises Pvt. Ltd. engaged in communication with the department well in advance of entering into the Builder-Buyer Agreement with buyer i.e. Sh. Amitabha Sen & Smt. Dipika Sen. Specifically. the builder had initiated the process of acquiring a license for the commercial use of 8 acres of land by submitting an application dated 18.07.2000 and subsequently, on 15.10.2001, he had complied with the conditions of LOI dated 28.09.2001 for issuance of license to develop the commercial colony on 8 acres of land by d licensing the same from the licenced group housing colony, even before the Builder-Buyer Agreement was executed. This crucial information, pertaining to the ongoing efforts to obtain a commercial license, was intentionally omitted from the subsequent agreements with buyer. Consequently, the Builder-Buyer Agreement, executed on 20.10.2001 with Sh. Amitabha Sen & Smt. Dipika Sen, failed to disclose the fact that the builder had sought de-licensing and re-licensing of the land for commercial purposes and finally he got the license, creating a situation where the true nature of the property was not transparently conveyed to the buyer.

(16.80) From the facts and circumstances discussed above, it is established that the Accused builder Raj Singh Gehlot, Director in M/s Ambience Developers & Infrastructure Pvt. Ltd. (formerly known as M/s HLF Enterprises Pvt. Ltd.) dishonestly & fraudulently during the period Oct, 2001 executed builder buyer agreement with the dishonest intention from the beginning, concealed material facts from the buyer and true nature of the property was not transparently conveyed to the buyer in order to deceive the buyer for purchasing the flats in

the said colony, thereby causing wrongful loss to buyer and wrongful gain to himself and the said company and thereby committed the offence of conspiracy and cheating punishable Under Section 120B r/w 420 of Indian Penal Code & substantive offence of 420 Indian Penal Code.

(16.81) Thus, the aforesaid facts disclosed commission of offence punishable Under Section 120B r/w 420 of Indian Penal Code & substantive offence of 420 Indian Penal Code on the part of the Accused company M/s Ambience Developers & Infrastructure Pvt. Ltd. (formerly known as M/s HLF Enterprises Pvt. Ltd.) through its director, and Sh. Raj Singh Gehlot.

(16.82) In view of the aforesaid, it is prayed that M/s Ambience Developers & Infrastructure Pvt. Ltd. (formerly known as M/s HLF Enterprises Pvt. Ltd.) through its director, and Sh. Raj Singh Gehlot may kindly be summoned and tried as per the provisions of law.

76. These findings are issues which would fall for consideration and adjudication before the competent court before which the chargesheet has been filed and as such, if the impugned judgment is allowed to stand, outcome of the trial may also be prejudiced.

V. CONCLUSION

77. In wake of the discussion made hereinabove, we are of the firm view that the impugned judgment dated 10th July, 2020 rendered by the High Court is, ex facie, unsustainable in facts and in law and hence, the same cannot be sustained. The same is, thus, set aside.

78. We make it clear that none of the observations made by us in this judgment may be treated as prejudicing the disposal of the Civil Writ Petition No. 6047 of 2025 pending before the High Court. The High Court shall proceed to consider and decide the said writ petition uninfluenced by this judgment.

79. The appeals are allowed accordingly. No order as to costs.

80. Pending application(s), if any, shall stand disposed of.

B. CIVIL APPEAL NO(S).872-874 OF 2021

81. Heard. Admit.

82. These civil appeals are directed against the orders dated 9th January, 2020 and 11th February, 2020 passed by the National Green Tribunal, Principal Bench, New Delhi in Original Application No. 238 of 2015 and order dated 13th February, 2020 passed in Review Application No. 10 of 2020 in the same O.A. By order dated 9th January, 2020, the NGT after considering the report of the Ministry of Environment, Forest, and Climate Change dated 22nd November, 2019 directed the Appellant, Ambience Developers & Infrastructure Pvt. Ltd.[22], to pay an interim environmental compensation of Rs. 68,51,250/-. Subsequently, vide order dated 11th February, 2020, NGT constituted a Joint Expert Committee comprising the MoEF&CC, Central Pollution Control Board and Indian Institute of Forest Management, Bhopal and directed the said committee to re-assess the environmental compensation. NGT, vide order dated 13th February, 2020, dismissed the application filed by the Appellant-Ambience Developers seeking review of the order dated 9th January, 2020.

I. BRIEF FACTS

83. The factual background of the present appeals being substantially similar to that of the connected appeals, the same is not being re-stated herein to avoid repetition.

84. The Original Application No. 238 of 2015 was instituted by the Respondent-Anil Uppal and his companions being the flat owners[23] in the Ambience Lagoon Apartment Housing Complex. The Respondents-applicants, inter alia, sought following reliefs:

> A. Direct the Respondents to restitute the damage caused to the park/open spaces and the Environment.
>
> B. Direct the Respondents to strictly comply with the order dated 10.04.2015 of this Hon'ble Tribunal in the matter of Vardhman Kaushik v Union of India & Ors.
>
> C. Direct the Respondents to restore the open areas/tot lots to their natural/original position.
>
> D. Direct the Respondent No. 7 to take necessary action against the person(s) concerned for felling of trees.
>
> E. Stay the construction of the commercial complex being built and other construction activities
>
> F Appoint Court Commissioners to visit the site and present a status report.
>
> G. Appoint an independent agency to measure the area of the resident's locality and present the findings before this Hon'ble Tribunal.
>
> H. Direct Respondent No. 3 to measure the Ambient Air Quality in the area and submit a report before this Hon'ble Tribunal.
>
> I. Direct the Respondent No. 5 to deposit all original records with this Hon'ble Tribunal.
>
> J. Direct the Respondent No. 4 to enforce status quo with respect to all constructions on the said areas.
>
> K. Direct the Respondent No. 8 to undertake a critical study of the area and submit a report before this Hon'ble Tribunal.
>
> L. Direct the Ministry of Environment and forests, Government of India to fulfil its responsibilities under the Environment Protection Act, 1986.
>
> M. Hold the officers of various public authorities personally liable.
>
> N. Award penalty on the defaulting public authorities.
>
> O. Award costs of the Application to the Applicants.
>
> P. Award suitable compensation to the Applicants.
>
> Q. Pass such other and further order or orders as this Hon'ble Tribunal may deem fit and proper in the facts and circumstances of the case.

85. The NGT directed the Haryana State Pollution Control Board and the DTCP to

inspect the site and submit a status report. Pursuant thereto, the said authorities submitted a report dated 5th May, 2016, stating that there was no violation with respect to the green and open areas. However, the Respondents-applicants before the NGT contended that the said report had been furnished without conducting an actual site inspection. In this backdrop, the NGT, vide order dated 16th August, 2016 appointed a Court Commissioner to carry out a site visit and submit an independent report.

86. The Court Commissioner in his report dated 19th September, 2016 indicated that Green Area No. 10, which was designated as a green area in the approved layout plan, was occupied by a nursery school, a sewage treatment plant, and an electric sub-station. Green Area No. 11, also earmarked as a green area, was found to be non-existent; a portion thereof was covered by a road, while another portion was occupied by a flat. The Court Commissioner further reported that ready-mix concrete trucks were plying in the area, generating high decibel noise, and that the sewage treatment plant was engulfed in foam.

87. The Appellant-Ambience Developers having been impleaded as Respondent No. 6 in the proceedings before the NGT, contested the allegations by asserting that the subject project formed part of an integrated larger development known as "Ambience Lagoon Island," within which the prescribed green area norms were being duly maintained, and that all requisite statutory approvals had been duly obtained.

88. During the course of the proceedings, the NGT, vide order dated 24th April, 2019, directed the MoEF&CC to submit its report on the issue of environmental compensation and observed as follows:

> **4.** The Tribunal found it necessary to quantify the compensation for the loss of environmental benefits/services, if any. The matter was adjourned thereafter on 24.01.2018, 01.02.2018, 27.02.2018 and 06.04.2018 at the request of learned Counsel for the parties.
>
> **5.** On 25.07.2018, the Tribunal noted the absence of Counsel for the applicants but an adjournment was granted. Today though Counsel for the applicants and Respondent No. 6 are present, they state that they are not the main Counsel and will not proceed in the matter. We do not find any justification for a Counsel appearing before this Tribunal and at the same time saying that they are not the 'main' Counsel. We do not understand why they have put in appearance, if they are not the Counsel.
>
> **6.** Be that as it may, report of the Ministry of Environment, Forest and Climate Change (MoEF&CC) on the issue of environmental compensation in terms of order dated 09.01.2018 is still awaited though more than one year has gone. Learned Counsel for the MoEF & CC submits that the report will be submitted within one month positively. The report may be furnished to the Tribunal by email at ngt.filing@gmail.com. It is made clear that there will be no further adjournment on any account without adverse orders against the party in default. List for further consideration on 20.08.2019.

89. In pursuance of the said order, the MoEF&CC submitted a report dated 7th November, 2019, assessing the environmental damage to the tune of Rs. 68,51,250/-.

90. Upon submission of the said report, the Respondents-applicants contended that it was incomplete, on the ground that it did not address the issue of alleged illegal constructions in Green Areas Nos. 10 and 11, which were earmarked as open and green

areas in the approved layout plan and, according to them, could not have been converted into covered areas in violation of environmental laws. The Respondents-applicants further assailed the adequacy of the assessed compensation, particularly with respect to the alleged loss of ecological services resulting from purported illegal commercial constructions in the designated open areas.

91. The NGT, vide interim order dated 9th January, 2020 directed the Appellant-Ambience Developers, to deposit a sum of Rs. 68,51,250/- towards interim environmental compensation. The said amount has since been deposited by the Appellant-Ambience Developers on 11th December, 2020.

92. In light of the submissions advanced by the Respondents-applicants, the NGT in its order dated 11th February, 2020, observed that a Joint Expert Committee comprising representatives of the MoEF&CC, the Central Pollution Control Board, and the Indian Institute of Forest Management, Bhopal, was required to examine whether, in light of the original Deed of Declaration and the sanctioned layout plan for the residential colony developed over 10.98 acres with stipulated open areas, any revised plan implemented after the allotment of apartments had illegally deprived the Respondents-applicants of their entitlement to ecological benefits envisaged under the original plan. The NGT further directed the Committee to consider whether such changes amounted to a violation of law, including impermissible alteration of common areas for private commercial gain to the detriment of the environment, and to assess the consequential environmental compensation. The Joint Expert Committee was accordingly directed to submit its report.

93. The Appellant-Ambience Developers filed an application seeking review of the order dated 9th January, 2020 contending that no opportunity had been afforded to it to file objections to the report of the MoEF&CC dated 7th November, 2019. The NGT, however, dismissed the said review application, terming the plea as an afterthought.

II. SUBMISSIONS ON BEHALF OF THE APPELLANT

94. Shri Pinaki Misra, learned Senior Counsel representing the Appellant-Ambience Developers, submitted that the orders passed by the NGT travel beyond the scope of proceedings contemplated under the National Green Tribunal Act, 2010,[24] inasmuch as they impinge upon the issues relating to alleged violations of the approved plan, which were already the subject matter of consideration before the High Court as well as DTCP, pursuant to order dated 16th January, 2020 passed by the High Court in Writ Petition No. 2147 of 2012. It was thus prayed that the impugned orders are ex facie illegal and unsustainable in the eyes of law.

95. Learned Senior Counsel further contended that the Appellant-Ambience Developers, was not afforded any opportunity to file objections to the report of the MoEF&CC dated 7th November, 2019, before it was saddled with the penalty, thereby causing serious prejudice to the Appellant-Ambience Developers.

96. Learned Senior Counsel further contended that the NGT committed a manifest error in placing reliance on the report submitted by the Court Commissioner, which, according to them, was factually incorrect, misleading, and did not accurately reflect the ground realities, thereby vitiating the findings recorded by the NGT.

97. It was further submitted that the Appellant-Ambience Developers, had consistently complied with the mandatory requirement of maintaining green and open spaces within the residential colony, and that the actual existing green area exceeded 17%, thereby

surpassing the prescribed statutory minimum. It was also urged that provisions for a nursery school, a sewage treatment plant, and an electric sub-station were made in other parts of the larger Ambience Island Project, rather than within the Ambience Lagoon Residential Colony. He, thus, urged that the impugned orders passed by the NGT are contrary to law and facts on record, and hence, the same deserve to be set aside.

III. SUBMISSIONS ON BEHALF OF THE RESPONDENTS

98. Ms. Kanika Agnihotri, learned Counsel appearing for the Respondents-applicants submitted that the Respondents-applicants had no grievance with respect to the construction of the residential colony on 10.98 acres of land. However, their primary grievance was that the construction of the commercial complex over 5.81 acres of land, situated directly in front of the residential flats, had obstructed their access to natural light and air. She vehemently contended that the said construction had been raised in violation of the designated land use and statutory norms, and urged that the offending commercial construction over the said 5.81 acres deserved to be demolished.

99. The areas originally designated for essential services such as a nursery school, a sewage treatment plant, and an electric sub-station were instead encroached upon and occupied by the commercial complex, resulting in the displacement of these essential utilities and necessitating their relocation to other areas.

100. It was urged that the Respondents-applicants possess an indivisible, and permanent interest in the common areas and facilities of the complex, which forms an integral part of their proprietary rights. Such common areas and facilities cannot be altered, alienated, reduced, or diverted for any other use, nor can any portion thereof be siphoned off, except with the express, informed, and prior consent of all the flat owners in accordance with law.

IV. DISCUSSION AND ANALYSIS

101. We have given our thoughtful consideration to the submissions advanced by learned Counsel for the parties and have gone through the impugned orders passed by the NGT.

102. We are of the considered opinion that the issues sought to be agitated before the NGT and those forming the subject matter of dispute in the proceedings before the High Court were overlapping to a great extent and hence, the decision of the NGT without taking into account the pendency and scope of the proceedings before the High Court on issues involving seriously disputed questions of fact, is indeed questionable.

103. The Tribunal placed implicit reliance upon the report of the Court Commissioner dated 19th September, 2016 on the premise that the Appellant-Ambience Developers had not objected to it, and thereafter, while considering the review petition, declined to entertain the plea of denial of opportunity on the ground that it had been raised belatedly.

104. We are of the firm opinion that, as the matter relating to alleged illegality in change of land use was already under scanner in the writ petition filed before the High Court in the year 2015, the NGT was not justified in interfering with the issues concerning violation of building plans in relation to the construction of commercial premises. We also feel that the aforesaid issues are beyond the scope and purview of the proceedings before the NGT Under Section 14 of the NGT Act which reads as below:

"**14. Tribunal to settle disputes.-(1) The Tribunal shall have the jurisdiction over all civil cases where a substantial question relating to environment (including enforcement of any legal right relating to environment), is involved and such question arises out of the implementation of the enactments specified in Schedule I.**

(2) The Tribunal shall hear the disputes arising from the questions referred to in Sub-section (1) and settle such disputes and pass order thereon.

(3) No application for adjudication of dispute under this section shall be entertained by the Tribunal unless it is made within a period of six months from the date on which the cause of action for such dispute first arose:

Provided that the Tribunal may, if it is satisfied that the applicant was prevented by sufficient cause from filing the application within the said period, allow it to be filed within a further period not exceeding sixty days.

(Emphasis supplied)

105. The dispute relating to the non-adherence of the building plans qua the open and green spaces was intrinsically connected and co-related to the ones under adjudication before the High Court. The Appellant-Ambience Developers was agitating before the High Court that there was no deviation from the sanctioned layout plan so far as the residential colony is concerned. While deciding the connected appeals, we have found favour with the aforesaid argument raised by the Appellant-Ambience Developers. In this view of the matter, we are of the prima facie opinion that the issue of environment was not a substantial question before the NGT thereby justifying its invocation of jurisdiction by the NGT in this matter. Rather, the present matter involved disputed claims of the parties in relation to irregularities in utilisation of the land belonging to the Appellant-Ambience Developers in developing the residential colony.

106. In this regard, reference may be made to recent judgment of this Court in Auroville Foundation v. Navroz Kersasp Mody MANU/SC/0344/2025 : 2025:INSC:347 : (2025) 4 SCC 150, wherein this Court held as follows:

30. As transpiring from Section 14, the Tribunal has the jurisdiction over all civil cases where the substantial question relating to environment including enforcement of any legal right relating to environment, is involved and such question arises out of the implementation of the enactments specified in Schedule I. Therefore, for the exercise of jurisdiction by the Tribunal Under Section 14, it has to be shown that (1) a substantial question relating to environment including enforcement of any legal right relating to environment is involved; and (2) such questions arise out of the implementation of the enactments specified in Schedule I.

31. The term "substantial question relating to environment" as defined in Section 2(1)(m) of the Act would include, inter alia, the question where there is a direct violation of a specific statutory environmental obligation by a person by which : (a) the community at large other than the individual or group of individuals is affected or likely to be affected by the environmental consequences; or (b) the gravity of damage to the environment or property is substantial; or (c) the damage to public health is broadly measurable. The substantial question would also include the environmental consequences relating to a specific activity or a point source of pollution.

32. In view of the said definition also the Tribunal before exercising the jurisdiction has to satisfy itself that a substantial question pertaining to the violation of or implementation of any specific statutory environmental obligations contained in any of the enactments specified in Schedule I, is involved.

33. Recently in *State of M.P. v. Centre for Environment Protection Research & Development [State of M.P. v. Centre for Environment Protection Research & Development,* MANU/SC/0647/2020 : 2020:INSC:516 : (2020) 9 SCC 781], this Court held as follows : (SCC pp. 801-802, paras 42-44)

> "*42.* In view of the definition of "substantial question relating to environment" in Section 2(1)(m) of the NGT Act, the learned Tribunal can examine and decide the question of violation of any specific statutory environmental obligation, which affects or is likely to affect a group of individuals, or the community at large.
>
> *43.* For exercise of power Under Section 14 of the NGT Act, a substantial question of law should be involved including any legal right to environment and such question should arise out of implementation of the specified enactments.
>
> *44.* Violation of any specific statutory environmental obligation gives rise to a substantial question of law and not just statutory obligations under the enactments specified in Schedule I. However, the question must arise out of implementation of one or more of the enactments specified in Schedule I.

Similar view is also taken in H.P. Bus-Stand Management & Development Authority v. Central Empowered Committee [H.P. Bus-Stand Management & Development Authority v. Central Empowered Committee, MANU/SC/0015/2021 : 2021:INSC:18 : (2021) 4 SCC 309].

34. From the above, it is explicitly clear that every question or dispute raised by an applicant before the Tribunal pertaining to the environment cannot be treated as a substantial question. It has to be a substantial question relating to environment as contemplated in Section 2(1)(m), and such substantial question must arise out of the implementation of any of the enactment/enactments specified in Schedule I. Though strict law of evidence may not be applicable to the cases filed before the Tribunal, the applicant has to raise the substantial question in his application specifically alleging the violation of a particular enactment specified in Schedule I."

(Emphasis supplied)

107. Viewed in light of the aforesaid precedent, a serious doubt arises as to the jurisdiction of the NGT to entertain the original application.

108. Further, we have already concluded in the foregoing part of the decision in Civil Appeals @ SLP(C) No(s). 11480 of 2020; SLP(C) No(s). 5971 of 2021; SLP(C) No(s) 14797 of 2020; that the issues of violations in raising the constructions stand concluded in favour of the Appellants-developers vide order dated 5th August, 2021 passed by the DTCP, which is under challenge before the High Court in Civil Writ Petition No. 6047 of

2025.

V. CONCLUSION

109. Thus, the order passed by the NGT directing the formation of the Joint Expert Committee, deserves to be stayed for the present. Consequently, the report of Joint Expert Committee dated 3rd December, 2020 which recommends the imposition of fine of Rs. 138.83 crores, Rs. 10.33 crores environmental compensation, withholding 25-50% of profits, and possible demolition of the commercial complex, shall not be acted upon for now.

110. The proceedings before the NGT shall remain in abeyance till disposal of the aforesaid Civil Writ Petition No. 6047 of 2025 before the High Court. Pursuant to the disposal of the said writ petition, it would be open to the parties to seek revival of the proceedings before the NGT which may examine the same upon being strictly satisfied regarding the substantial questions relating to environment as contemplated in Section 2(1)(m) of the NGT Act, 2010, if any, surviving pursuant to disposal of the writ petition.

111. The appeals stand disposed of in these terms. No order as to costs.

112. Pending application(s), if any, shall stand disposed of.

---

[1]Hereinafter, referred to as "High Court".
[2]Hereinafter, referred to as "Appellant-Raj Singh Gehlot".
[3]Hereinafter, referred to as "Appellant No. 3-Ambience Developers"
[4]Hereinafter, collectively referred to as "Appellants-developers".
[5]Hereinafter, referred to as "M/s. HLF Ltd.".
[6]Hereinafter, referred to as "DTCP".
[7]Hereinafter, referred to as "NCDRC".
[8]Hereinafter, also referred to as "ALARWA".
[9]Hereinafter, also referred to as "2010 civil suit".
[10]Hereinafter, referred to as "2010 writ petition".
[11]Hereinafter, also referred to as "NGT".
[12]Hereinafter, also referred to as "MoEF&CC".
[13]Hereinafter, referred to as "2010 civil suit".
[14]Hereinafter, collectively referred to as "writ Petitioners".
[15]Hereinafter, referred to as "2012 writ petition".
[16]Hereinafter, referred to as "1975 Act".
[17]Hereinafter, referred to as "CBI".
[18]Hereinafter, referred to as "2020 Amendment".
[19]Hereinafter, referred to as "Appellant-Kohler India Corporation".
[20]Hereinafter, referred to as "FAR".
[21]Hereinafter, referred to as "NGT".
[22]Hereinafter, referred to as "Appellant-Ambience Developers".
[23]Hereinafter, referred to as "Respondents-applicants".
[24]Hereinafter, referred to as "NGT Act".

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1 RAJ SINGH GEHLOT, 2 M/S AMBIENCE PRIVATE LIMITED (FORMERLY AMBIEI
LIMITED), 3 M/S AMBIENCE DEVELOPERS AND INFRASTRUCTURE PRIVATE LIMITED
VS.
1 AMITABHA SEN, 2 DIPIKA SEN, 3 THE CHIEF SECRETARY, 4 THE CHI
ADMINISTRATOR, 5 THE CHIEF TOWN PLANNER, 6 A.K. GANJU, 7 A.K. GANJU A
ASSOCIATE, 8 RAJEEV KHANNA, 9 GRID ARCHTECTURE INTERIORS PRIVATE LIMI
10 CBI THROUGH ITS DIRECTOR

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BEFORE THE NATIONAL GREEN TRIBUNAL, NEW DELHI

PRINCIPAL BENCH

ORIGINAL APPLICATION NO. 357/2026

IN THE MATTER OF:

Dwarka Expressway Gurugram Development Association ... *Applicant*

Versus

Municipal Corporation of Gurugram & Ors. ... *Respondents*

AFFIDAVIT IN SUPPORT OF THE WRITTEN SUBMISSION/ REJOINDER ON BEHALF OF THE APPLICANT

I, Sunny Singh, S/o. Sh. Surat Singh, aged about 36 years R/o. F-106, New Palam Vihar Phase-1, Gurugram, Haryana-122017, do hereby on solemnly affirm and declare as under;

1. That I am the duly authorised representative of the Applicant Association in the above-captioned Original Application and am well conversant with the facts and circumstances of the case, as well as the records maintained by the Applicant Association. I am, therefore, competent and duly authorised to swear and affirm the present affidavit.

2. That the Applicant has filed the accompanying Written Submission / Rejoinder to the Reply/Counter Affidavit filed by the Respondents.

25 NOV 2026

NOTARY ... Majumdar DELHI No. 45790 GOVT. OF INDIA

Entry no. 123 ... Notary Public

25 NOV 2026

ATTESTED NOTARY PUBLIC, DELHI

3. That I have read and understood the contents of the accompanying Written Submission/ Rejoinder, and the same have been prepared under my instructions and on the basis of the records, documents and information available with the Applicant Association.

4. That no material fact relevant to the present Rejoinder/ Written Submission has been concealed or suppressed, and the accompanying Rejoinder/ Written Submission is being filed bona fide in the interest of justice and for proper adjudication of the issues involved in the present Original Application.

DEPONENT

Identified the deponent who has signed in my presence
D/1260/2021

VERIFICATION

I, the above-named Deponent, do hereby verify that the contents of paragraphs 1 to 4 of the above affidavit are true and correct to my knowledge and belief, based on the records of the case and information received in my capacity as the authorised representative of the Applicant Association. No part of it is false and nothing material has been concealed therefrom.

Verified at **New Delhi** on this ___ day of November, 2026.

ATTESTED
NOTARY PUBLIC, DELHI

DEPONENT

Entry no. 123 Notary Public
25 NOV 2026

Identified by Me
25 NOV 2026
ROHIT SAINI, Advocate
D/1260/2021

NOTARY
Manjari Majumdar
DELHI
Regn. No. 45790
GOVT. OF INDIA

CERTIFIED THAT THE DEPONENT
Sri/Smt/Km. ....
S/o, W/o, D/o ....
R/o ....
Identified by ....
has signed in my presence
New Delhi 25 NOV 2026
That the contents of the affidavit which have been read & explained to him are true and correct to his knowledge.