BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL, WESTERN ZONE BENCH AT PUNE

ORIGINAL APPLICATION NO 186 of 2024

Manilal Dahyabhai Patel ..... Applicant

Versus

Director, Shree Charbhuja Agro & Ors .....Respondents

REJOINDER AFFIDAVIT ON BEHALF OF APPLICANT TO THE REPLY FILED BY THIRD RESPONDENT FROM DISTRICT COLLECTOR OFFICE, BHARUCH

I, Manilal Dahyabhai Patel s/o Dahyabhai Morar Patel, aged about 74, Resident of At & Po. Motali

Ta. Ankleshwar Dist.Bharuch Pin.393001 Do hereby solemnly affirm and state on oath as under:

I state and submit that I have perused the reply filed by the Third Respondent, the District Collector's Office, in the above petition dated 27.03.2025 bearing reference no MSC/2025/vashi/1741. I am conversant with the facts and circumstances leading to the filing of the present reply, and therefore, I am competent to depose to the statements made herein.

1. It is respectfully submitted that the initial paragraph of the reply refers to a response provided by the District Agricultural Officer, which includes an **official assessment of crop loss** suffered by the applicant to the tune of **Rs. 14,68,000/-**. This figure materially **contradicts the loss estimate** stated in the reply by **collector office**. A true copy of the said letter from the District Agricultural Officer is annexed hereto and marked as **Annexure I**.

   Further, the said paragraph erroneously attributes the source of pollution to "**urban waste and agro-waste**." This assertion is **factually incorrect and legally untenable** in light of **Point No. 10** of the **Closure Order dated 11.07.2024**, issued by the **Gujarat Pollution Control Board (GPCB)**. Closure order of Gujarat pollution control board is attached as **Annexure II**
   The said Closure Order categorically records that the respondent unit is **procuring and storing industrial wastes**, including hazardous, non-hazardous, process, ETP sludge, and gypsum wastes from various industrial sources.

   Specifically, the GPCB's own findings establish the following:

   A. **Non-hazardous waste** from *M/s. Shivam Alums & Chemicals*, Ankleshwar (procured via invoice),
   B. **Gypsum** from *M/s. Center Point Industries*, Vapi (via online manifest),
   C. **Gypsum FG** from *M/s. Aarti Fertilizers*, Vapi (via tax invoice),
   D. **ETP sludge** from *Neeta Gelatin India Ltd.*, GIDC – Jhagadia (via online manifest).

   These records conclusively demonstrate that the wastes stored and discharged by the unit are **industrial in origin**, and **not "urban and agro waste,"** as incorrectly mentioned. The contradiction between the description in the initial paragraph and the findings of the GPCB is not only misleading but also **materially undermines the credibility and factual foundation** of the report. This mischaracterization has a direct bearing on the assessment of environmental damage and the quantum of compensation due.

2. As per the reply by District Collector office as per para 3 **"Based on the analysis report, the high concentration of microelements suggests that crops cannot be grown in such soil"** and and as per para 4" **To mitigate the pollution's impact on the agricultural land, it is necessary for the land to remain uncultivated for one year after the pollution issue is addressed. Consequently, the crop damage to the applicant must be considered for three years and one-year additional compensation for the reclamation of land."**

This is to respectfully submit that the assertion by the Hon'ble District Collector's Office—stating that the contaminated farmland of Shri Manilal Dahyabhai Patel can be restored to cultivable condition merely by leaving it fallow for one year—lacks scientific credibility and is inconsistent with established environmental remediation protocols recognized under Indian environmental law and policy.

The National Green Tribunal (NGT), through its various directives, has mandated the Central Pollution Control Board (CPCB) to develop and implement comprehensive guidelines for the identification, assessment, and remediation of contaminated sites across India. In line with these directives, the CPCB has clearly emphasized the necessity for **scientific assessment** and the **implementation of active remediation measures** in cases involving soil contamination.

The CPCB's standard operating procedures for remediation specifically recommend the **excavation and removal of contaminated topsoil**, proper **disposal in accordance with the Hazardous Waste Management Rules**, and **replenishment with clean, nutrient-rich fill** to ensure restoration of environmental and agricultural integrity. Passive approaches such as allowing the land to lie fallow do not meet the threshold for effective remediation in cases of chemical contamination, particularly from industrial effluent discharge.

In the present case, the effluent discharge from M/s Charbhuja Agro Fertilizer Company has rendered the land agriculturally non-viable. Relying on passive remediation would not only delay the recovery of the land but also expose the landowner to prolonged economic hardship and uncertainty. Therefore, **active remediation is not only necessary but legally and scientifically mandated.**

In light of the above, the demand for compensation amounting to ₹15,00,000 is both **justified and proportionate.** This amount is based on verified quotations for procurement and application of clean topsoil necessary to restore the land to its original agricultural viability. It also excludes the cost of excavation and hazardous waste disposal, which is expected to be borne by the polluting entity, M/s Charbhuja Agro Fertilizer Company, under the well-established **'Polluter Pays' principle** upheld by Indian environmental jurisprudence.

Therefore, it is respectfully urged that the view expressed by the District Collector's Office be reconsidered in light of the CPCB's scientifically-backed guidelines and the statutory obligations imposed upon polluting industries. We seek your kind intervention to ensure that justice is served and that the affected landowner is fairly compensated to facilitate genuine restoration of his livelihood.

3. As per para 5 and 6 of the collector office reply it is stated that "The **petitioner has claimed the amount of Rs. 15,00,000/- for soil reclamation costs and Rs. 3,05,525/- for the cost of setting up a new water bore. However, the land can be reclaimed by keeping it uncultivated for one year. Additionally, the water bore does not need to be abandoned due to pollution, and it can be cleaned for continued use for irrigation. The petitioner has claimed Rs. 20,000/- for other expenses, which is sufficient for cleaning the bore."**

"The total loss of 7,960 kg of cotton production over four years is estimated at Rs. 6,25,000/- for compensation due to crop damage. The production of maize fodder after cotton harvesting is estimated to be worth Rs. 1,10,000/- per year, totalling Rs. 4,40,000/- for four years. Thus, the farmer is estimated to have incurred a total loss of Rs. 10,65,000/- over the four years, which represents the gross income lost by the farmer. However, the total farming expenses of Rs. 7,00,000/- was not incurred, but Rs. 3,00,000/- was spent on farming and seed costs, (which is approximately 40% of total farming expenses). Therefore, the total loss suffered by the farmer is considered to be Rs. 6,85,000/-."

We, as the petitioners, respectfully submit that the reply of the respected District Collector's office contains claims that are speculative, unsubstantiated, and not supported by any documentary or technical evidence. We wish to clarify the factual basis of our claims and address the inaccuracies and contradictions in the reply as follows:

Soil Reclamation Cost (Rs. 15,00,000/-)

It must be clearly and unequivocally stated that the affected land **requires full scientific remediation and environmental restoration**, not mere reclamation. The soil is **contaminated with toxic elements and harmful concentrations of microelements**, making it completely unfit for cultivation in its current state. **Simple physical recovery or leaving the land uncultivated will not reverse the damage** caused by the pollutants.

The amount of **Rs. 15,00,000/-** claimed by us is **exclusively for soil refilling**, based on a professional quotation from a recognized service provider. This estimate only pertains to the physical replacement of topsoil to enable basic cultivation — it **does not cover any part of the scientific treatment or remediation** that is genuinely required to neutralize the contamination.

In fact, the **reply of the respected District Collector's office itself acknowledges** the severity of the contamination. The laboratory report referenced therein confirms that the soil contains **excessively high levels of microelements** such as zinc, copper, cobalt, manganese, and iron, along with **significant concentrations of toxic heavy metals** like cadmium, chromium, and nickel. Crucially, the report concludes that **"crops cannot be grown in such soil."** This directly contradicts any claim that the land can be revived through passive methods like leaving it uncultivated. **Scientific remediation is indispensable**, yet we have refrained from including its cost in our present claim, making our submission both fair and conservative. We would like to bring this tribunals attention to **Hindustan Unilever Ltd. (HUL) – Kodaikanal Mercury Contamination Case**:

In *Original Application No. 161/2021*, the NGT directed HUL to remediate mercury-contaminated soil at its former factory site in Kodaikanal. The Tribunal emphasized adherence to scientifically determined standards, as outlined in the NEERI report, recommending specific technologies like soil washing and vacuum retorting for effective decontamination. Copy order attached as **Annexure III**

Water Bore Contamination and Bore Replacement (Rs. 3,05,525/-)

The **borewell is the petitioner's sole and exclusive source of water** for agricultural use. Due to severe contamination resulting from the incident in question, this essential water source has become **entirely unfit for use**, thereby rendering the land non-cultivable in practical terms.

Accordingly, the **claim of Rs. 3,05,525/- is strictly for the installation of a new borewell**, based on the necessity of restoring access to clean water for irrigation. The **assertion made in the reply of the respected Collector's office—that the existing bore can be cleaned and reused—is speculative, technically unfounded, and fails to consider the extent and seriousness of the contamination.**

It is pertinent to note that the **petitioner has not claimed** any amount towards the cost of **cleaning, pumping out, or scientifically treating** the existing polluted bore water. These procedures, if undertaken, would involve **additional technical and environmental expenses**, which are currently **excluded from the petitioner's demand**, thereby reflecting the **conservative and reasonable nature of the claim**.

In the absence of an alternative water source and considering the documented pollution, the necessity of a new borewell is both **justified and urgent**. The petitioner's claim must therefore be viewed as **not only appropriate and evidence-based**, but also **restrained in scope**, despite the broader extent of actual damages incurred.

Absence of Supporting Evidence in the Reply:

The reply presents speculative estimates regarding cotton yield losses, fodder values, and net losses over four years without offering any basis—such as agricultural reports, crop yield data, or expert assessments. On the other hand, our claims are backed by real-world documentation, quotations, and practical field conditions.

Questionable Loss Assessment:

The suggested net loss figure of Rs. 6,85,000/- in the reply is arbitrarily derived, ignoring key expenses and undervaluing the scale of disruption suffered. Our losses reflect actual financial, agricultural, and infrastructural impacts, while the reply attempts to minimize these without adequate examination or field verification.

Contradictory Position in the Reply:

The respected District Collector's office argues that the land can recover by leaving it fallow, while simultaneously questioning the need for reclamation costs. This contradiction reflects a lack of technical review and undermines the logical consistency of their stance.

Our claims are transparent, conservative, and based on actual quotations and incurred damages. **We have not claimed costs for cleaning or treating the contaminated bore water, nor for soil pollutant remediation, though both remain necessary.** By contrast, the reply of the respected District Collector's office is devoid of supporting data, lacks consistency, and relies on generalized assumptions. We respectfully urge that our claims be evaluated on the basis of documented facts and real field conditions, and that the reply be given limited weight due to its speculative and unsupported nature.

4. **Damage Assessment Table with Errors in Recommended Compensation**

In response to the recommended compensation figures provided in the reply of the respected District Collector's office, it is submitted that the amounts suggested therein are arbitrary, unsupported by any technical data, field reports, or expert assessments, and therefore cannot be treated as a valid basis for adjudicating actual loss. The compensation recommended for soil refilling, the construction of a new borewell, and crop damage is demonstrably inaccurate, lacking any verifiable quotations, scientific evaluations, or corroborating records.

On the contrary, the petitioner's claims have been submitted based on genuine, professional quotations and a conservative estimation of loss, excluding multiple additional expenses that would rightfully be claimable under the circumstances. These include the scientific remediation of contaminated soil, the treatment of borewell water, and full compensation for multiple years of lost agricultural yield, which have not been factored into the petitioner's demand. The following comparative table clearly highlights the discrepancies, omissions, and evidentiary shortcomings in the compensation proposed by the respondent office, and reflects the reasonable, restrained, and substantiated nature of the petitioner's claim:

Sr. No.	Details of Damage Caused	Claimed by the Farmer (Rs.)	Error in Recommended Compensation (Rs.)	Concerns in estimation by The collector office
1	Reclamation of land by filling soil	15,00,000/-	1,66,250/-	Arbitrary figure without any technical assessment or quotation; ignores contamination severity, Not as per CPCB guidelines as per NGT directives
2	New water bore	3,05,525/-	20,000/-	No quotation or technical basis provided; fails to account for contamination and bore depth and treatment of water
3	Other expenses	20,000/-	--	Not addressed
4	Crop damage demand (2022-23 to 2024-25)	8,24,475/- (Five years)	4,98,750/- (Three years)	Lacks supporting yield data, no scientific or ground-based verification
Total Damage		26,50,000/-	6,85,000/-	Total recommendation based on speculative, unverified figures

VERIFICATION

What is stated in paragraphs are statement of facts derived from the relevant records and evidences and are true to the best of my knowledge and I believe the same to be true

All documents enclosed with the affidavit in reply are the true copies of their originals

SOLEMNLY AFFIRMED AT ANKLESHWAR ON THIS 11th DAY OF APRIL 2025

મહમદહુસેન સિદ્દીકભાઈ પટેલ

DEPONENT

NOTARY
NEHAL B. PATEL
ANKLESHWAR DIST. BHARUCH
Reg. No. 46192
GOVT. OF GUJA.

I Know the Deponent

Reg. No. 1650/25
Date 11 APR 2025

Solemnly Affirmed before me by Shri M.D. Patel who is identified by Shri S.B. Ahir. Contents of documents is explained to him/her in his vernacular.

N. B. PATEL
ADVOCATE & NOTARY
(Govt. of Guj.)

Annexure-1

ખેતીવાડી શાખા, તાલુકા પંચાયત,અંકલેશ્વર
તાલુકા પંચાયતની કચેરી,તા.અંકલેશ્વર,જી.ભરૂચ

Email: agri.ankleshwar@gmail.com

જા.નં: તા.પં/ખેતી/ખેડૂત રજૂઆત/પાક નુકશાની/૮૪૬ થી ૮૪૭/૨૦૨૫ તા. ૩૧/૦૧/૨૦૨૫

પ્રતિ,
જિલ્લા ખેતીવાડી અધિકારીશ્રી,
ખેતીવાડી શાખા,
જિલ્લા પંચાયત ભરૂચ

વિષય:- ચારભુજા એગ્રો ફર્ટિલાઈઝર કંપની દવારા પ્રદુષીત પાણીથી ખેડૂતના ખેતરમાં નુકશાન થવા બાબત....
સંદર્ભ :- આપ સાહેબના પત્ર નંબર જનં/જિ.પં/ખેતી/ટેક/પાક નુકશાની/૮૩/૨૦૨૫ તા.૨૧/૦૧/૨૦૨૫

સવિનય સહ ઉપરોકત વિષયના અન્વયે જણાવવાનું કે આપ સાહેબના સંદર્ભપત્રની સુચના મુજબ આજ રોજ તારીખ:-૩૧/૦૧/૨૦૨૫ ને શુકવાર ના રોજ અરજદારશ્રી મણીલાલ ડાહ્યાભાઈ પટેલ રહેવાસી-મોતાલી તા.અંકલેશ્વર કે જેઓ મોતાલી ગામે ખાતાનંબર-૧૨૪ થી કુલ-૦-૯૨-૧૦ હેકટર જમીન ધારણ કરે છે.

ચકુમાં આજ રોજ અરજદાર શ્રીની રૂબરૂમા તેઓના સર્વેનંબર ૭૩ વિસ્તાર ૦-૯૨-૧૦ હે. વાળા ખેતરનું સ્થળનું નિરીક્ષણ કરતા તેઓના ખેતરની ઉત્તર દિશામાં શ્રી ચારભુજા એગ્રો ફર્ટિલાઈઝર કંપની ખેતરની અડોઅડ આવેલી છે.જે કંપની ના પ્રદુષીત પાણીથી સદર હું આખા ખેતરમાં પ્રદુષિત પાણી ફરી વળે છે.સાથો સાથ ચોમાસા દરમ્યાન વરસાદી પાણી ભળવાથી ખેતરમાં કોઈ પણ પ્રકારની વનસ્પતિ જીવીત રહી શકેલ નથી.ખેતરની દિવાલ નજીક હાલમાં લીમડાના ઝાડ ઉપર પણ આ પ્રદુષિત પાણીની ગંભીર અસર જોવા મળેલ છે.ખેતરની જમીન અંગેની ફળદ્રુપતા જોતા ખેતરમાં જમીનના ઉપલા પડ ઉપર નરી આંખે પ્રદુષિત પાણીથી થયેલી ગંભીર આડઅસર જેવી કે જમીનનું ૨થી ૪ ઈચનું પડ કેમિકલ પ્રદુષિત પાણીની અસરથી કથ્થઈ કલર જેવા પાવડરના રૂપમાં જોવા મળેલ છે. ખેતરની પરીસ્થિતિ જોતા અંદાજીત છેલ્લા ૪ વર્ષથી કોઈ પણ પ્રકારનું પાક વાવેતર થઈ શકેલ નથી. ખેતરમાં ખેડૂતની પોતાની પિયત સુવિધા હોવાથી વર્ષમા બે પાકો લઈ શકાય તેમ છે.પરંતુ સદર હું કંપનીના પ્રદુષિત પાણીથી "બોર"નું પાણી પણ ઉપયોગમા લઈ શકાય તેમ નથી આમ અરજદાર ના જણાવ્યા મુજબ આ વિસ્તારમા મુખ્યત્વે કપાસ,તુવેર તથા ધાસચારા જેવા પાકોનું વાવેતર થાય છે.ખેડૂત દવારા આ સર્વેનંબર વાળા વિસ્તારમા પિયત પાક તરીકે કપાસનું વાવેતર કરવામાં આવતું હતું.પરંતુ છેલ્લા ચાર વર્ષથી પ્રદુષિત પાણી ફરી વળતા કોઈ પાક લઈ શકાયેલ નથી.આગ ચાર વર્ષ કપાસનું વાવેતર [illegible] કપાસનું ઉત્પાદન અંદાજિત ૧૮૦૦થી ૨૨૦૦ કી.ગ્રામ થાય. આગ ચાર વર્ષ ની ગણતરી [illegible] ૮૮૦૦ કિલો ઉત્પાદન લઇ શકાયેલ નથી.આગ છેલ્લા ચાર વર્ષનાં કપાસના પ્રતિ ક્વિન્ટલ [illegible] રૂપિયા ૮૫૦૦/-જોતા ચાર વર્ષમા અંદાજિત ૭,૪૮,૦૦૦/-રૂપિયા નુકશાન ખેડૂતને થવા પામેલ [illegible]

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શકાય.તથા કપાસનો પાક પૂર્ણ થયે ઘાસચારાના પાક તરીકે મકાઈનું વાવેતર કરવામાં આવતું હતું.જેનું વેચાણ પ્રતિ મણ ૬૦/- રૂપિયા મુજબ ૧ ટનના ૩,૦૦૦/- ગણતા એક હેક્ટરે લીલા ઘાસચારા(મકાઈ)નું અંદાજિત ઉત્પાદન ટન ૫૦ થી ૬૦ ટન થાય છે.આમ કુલ ચાર વર્ષના લીલા ઘાસચારાનું ઉત્પાદન ગણતા કુલ ૨૪૦ ટન લીલા ઘાસચારાનું ઉત્પાદન મળી શકે જેની પ્રતિ ટન ૩,૦૦૦/-ની આવક ગણતા ખેડૂતને આ પ્રદુષિત પાણીથી અંદાજિત ૭,૨૦,૦૦૦/-ની રકમનું નુકશાન ગણી શકાય આમ ચાર વર્ષ મા બે પાકોના વાવેતર સમયગાળા મુજબ કપાસનું અંદાજિત ૭,૪૮,૦૦૦/- અને લીલા ઘાસચારાનું મળી કુલ ૧૪,૬૮,૦૦૦/- રકમનું ખેડૂતને થયેલ નુકશાન ગણી શકાય.

વધુમાં ખેતરનું નિરીક્ષણ કરતા જમીનનો નમુનો પૃથ્થકરણ માટે અરજદારની રૂબરૂમા ખેતરની ચારેય દિશાએથી એકત્ર કરવામાં આવેલ છે. પિયત માટેનો બોર બંધ તથા જામ થયેલ હોય જેથી પાણીનો નમુનો ચકાસણી અર્થે રજુ કરી શકાય તેમ નથી.

વધુમાં અરજદાર દવારા ખેતરની જમીનની ફળદ્રુપતા અંગે પ્રત સુધારવા તથા ફરીથી ખેતીપાકો હેઠળ લાવવા માટે આ ખેતરની જમીનનું અંદાજિત ૩થી૪ ફૂટ જેટલું પડ કેમિકલ યુક્ત હોઈ જમીન કાઢી નવી જમીન (માટી) પુરાણ કરવાની જરુરીયાત દર્શાવતું અંદાજપત્ર રજુ કરેલ છે.જે અંદાજિત ૨૬,૫૦,૦૦૦/-જેવું જણાયેલ છે.(નકલ સામેલ છે)

લી.આપનો વિશ્વાસુ

(સહી)
વિસ્તરણ અધિકારી (ખેતી)
તાલુકા પંચાયત, અંકલેશ્વર.

સામેલ
૧.ખેડૂત દવારા રજુ કરેલ દુષિત પાણીના ફોટા-૫
૨..જમીન નવસાધ્ય કરવા અરંજદાર દવારા રજુ કરેલ અંદાજપત્ર
૩. ખેડૂત દવારા રજુ કરેલ પાણી ટેસ્ટિંગનો રિપોર્ટ
૪.ચકાસણી માટે જમીનનો નમુનો

TRUE COPY
NOTARY GOVT. OF GUJARAT
MAHESH R. BHAGAT
NOTARY
Ankleshwar, Dist. Bharuch.

<u>નકલ સવિનય રવાના:-</u>
પ્રતિ,
મદદનીશ ખેતી નિયામકશ્રી (વિસ્તરણ) ,અંકલેશ્વર પેટાવિભાગ,અંકલેશ્વર તરફ જાણ સારૂ

ઉપરોક્ત વિગતો આજ રોજ વિસ્તરણ અધિકારી (ખેતી) અંકલેશ્વર દ્વારા ફરિયાદ અન્વયે તપાસ કરવા આવેલ જે તપાસ અહેવાલની હકીકત મને વાંચી સંભળાવવામાં આવેલ છે. જે બરાબર છે. જેનો હું સ્વીકાર કરૂ છું.
મગનભાઈ ડાહ્યાભાઈ પટેલ
ગણપતભાઈ ડાહ્યાભાઈ પટેલ
ગામ. મોતાલી, તા. અંકલેશ્વર

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Annexure-194

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Agriculture Branch, Taluka Panchayat, Ankleshwar
Taluka panchayat Office, Taluka Ankleshwar, Dist. Bharuch.

Email: agri.ankleshwar@gmail.com

Publish No.: Ta. P./Agriculture/Farmer Application/Crop Damage/846 to 847/2025 dtd. 31/01/2025

To,

District Agriculture Officer,
Agriculture Branch,
District Panchayat Bharuch.

Sub: Regarding crop damage due to waste water from Charbhuja Agro Fertilizer company

Ref: Letter from your goodself number P. No./Dist. Panc. /Agriculture/Tek/Crop Damage/83/2025 dtd. 21/01/2025.

Respected Sir/Madam,

With reference to above mentioned subject matter, it is hereby kindly informed that as per reference letter instructions from your good office, that today on Friday dt. 31/01/2025 applicant Shri Manilal Dahyabhai Patel owns land with address: Resident = Motali, Ta. Ankleshwar, Motali Village, Account No 124 to total 0-92-10 hectare.

Additionally, today while inspecting in presence of applicant Shri their land, with Survey No. 73. Area 0-92-10 hectare, Shri Charbhuja Agro Fertilizer Company is located just adjacent to the applicant land towards north direction. Polluted water from this company flows on the entire land of the applicant. Alongwith this, during monsoon season, no vegetation has been able to survive due to flow of this rain water mixed with polluted water. Serious effect of polluted water is observed on Neem Tree near the boundary wall of the land. While observing the land's fertility, it was observed that upper layer of soil 2-4 inches is very seriously affected due to this chemically polluted water and soil colour has turned brown like powder. Applicant has his own water supply facility (borewell) on land for watering crops like Cotton, pigeon pea and fodder and can take harvesting twice a year. The borewell water cannot be used as it is also infiltrated with polluted water from company. It was informed by applicant that cotton crop was grown seasonally on the above survey no. land area earlier, but due to the flow of polluted water over entire land, applicant is not able to grow any crop from past 4 years. Hence calculating, four years' cotton crop production per hectare will be 1800 to 2200 Kgs approx. Hence the applicant couldn't produce/grow cotton crop for four years the totalling to approx. 7200 to 8800 Kgs. Hence, considering average rate for past four years for cotton as Rs. 8500/per quintal, the total loss calculated for applicant is approx. Rs. 7,48,000/-. Once cotton production is over, maize was produced as fodder crop. The sale price of maize fodder was Rs 60/20 Kg ("man") and accordingly Rs. 3000/Ton. Considering 1-hectare land, estimated production of maize fodder is 50 to 60 Ton. Hence, considering 4 years' production, total 240 Ton of maize fodder can be produced and considering rate Rs 3000/Ton, applicant's estimated loss due to this polluted

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water can be calculated as approx. Rs. 7,20,000/-. Hence grand total loss calculated for four years for both crops - cotton approx. Rs. 7,48,000/- and maize fodder approx. Rs. 7,20,000/- is Rs. 14,68,000/-.

Further, observing the applicant's land, soil samples have been collected from all four sides of the land for analysis in presence of applicant. Borewell utilized for watering was jammed and hence water sample couldn't be presented for analysis.

Further, applicant has presented an estimate for reclamation of chemical mixed soil approx. 3 to 4 feet for improving fertility of soil for production of said crops which is approx. Rs. 26,50,000/- (Copy attached).

Yours Sincerely,

Distribution Officer (Agri.)
Taluka Panchayat, Ankleshwar

Attachment

1. Photographs of the polluted water produced by the farmer
2. Quotation for re-fertilization of land
3. Water testing report produced by the farmer
4. Sample of soil for testing

Duplicate copy dispatched

To,
Respected Commissioner – Farming on behalf of Sub Division, Ankleshwar

On the above subject matter today the Divisional Officer (Farming) Ankleshwar read / explained about the actual details of complaint. I understood all the facts and all are correct and accepted by me.

Manilal Dahyabhai Patel

Village:- Motali, Ta. Ankleshwar, Dist. Bharuch

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Annexure-II

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GUJARAT POLLUTION CONTROL BOARD

PARYAVARAN BHAVAN, SECTOR 10-A,
GANDHINAGAR - 382010,
(T) 079-23232152

GPCB

CLOSURE DIRECTION UNDER SECTION 33-A OF THE WATER (PREVENTION AND CONTROL OF POLLUTION) ACT-1974 [HEREINAFTER REFERRED TO AS THE WATER ACT] AS AMENDED FROM TIME TO TIME

BY R.P.A.D.

WHEREAS you are having an industrial plant at **Survey No. 313/314, Sub Plot No. 3, B/H. Apex Hotel, Motali, ANKLESHWAR, DIST.BHARUCH.**

AND WHEREAS Gujarat Pollution Control Board has granted you consent under the provisions of water Act-1974 by its Consent Order No. AWH –57896, valid up to 28/08/2032 for operation of the industrial plant with various conditions mentioned therein and with specific condition to use fresh raw material only.

AND WHEREAS during the inspection of your industrial plant on **24/05/2024 & 01/07/2024** under section-23 of the Water Act-1974 by the authorized officers of the Board it has been noticed that:

1. During inspection on 24/05/2024, unit is not found in operation. Various heaps of different types of wastes @ 800 MT are found lying in open land within unit premises.
2. No rain is observed during visit & entire premises of the unit & adjacent agriculture land of the complainer is found dry, however unit has not provided covered storage facility to store different types of wastes.
3. Unit has not provided internal storm water drain & leachate recollection facility in case of emergency. Unit has not taken any preventive measures to restrict contaminated waste water going into adjacent agriculture land of the complainer.
4. Looking to above, there are chances that leachate/contaminated effluent generated during monsoon season can flow outside unit premises as no any system to prevent such effluent is provided by unit.
5. Unit is again inspected on 01.07.2024 with reference to a telephonic complaint received to this office regarding illegal discharge of chemical contaminated water in adjoining agricultural land at survey no. 42/17 of village Motali, Tal. Ankleshwar.
6. Agricultural land of complainer is adjoining to boundary wall of M/s. Shree charbhuja agro fertilizer co. There is cement sheet boundary wall between agricultural land and the unit. During visit, it is observed that at the back side of the unit near the bore well room of the farmer there is brown colored acidic (@ 4 to 6 pH on pH strip) w/w is coming out from the unit premises under the provided boundary wall and is being spreading on complainer's agricultural land which is observed going in to nearby agricultural land of other farmers also and finally goes in to natural nallah. During visit, except wild grasses there is no any growing crop observed within the land of Shri Manilal Dahyabhai Patel.
7. During visit, wastewater flowing and waste water ponding is observed in agricultural land of Shri Manilal Dahyabhai.
8. Analysis report of the brown colored contaminated waste water sample collected from outlet point of the Unit under boundary wall of the Unit outside Unit premises shows parameter pH: 5.08, Ammonical nitrogen: 104.72 mg/l, COD: 690 mg/l.
9. During visit production plant is not found in operation. During visit heaps of various types of wastes in huge quantities are observed stored on open land (@ 100 m X 70 M area) at the backside of production plant shed within the unit premises in haphazard manners.

Outward

10. As per record made available unit is procuring Haz./Non Haz./process/ETP/gypsum wastes from the various units with online manifest and without manifest (with invoice) and stored in open land which is used as raw materials. As per records available, unit has received (1) Non haz. Waste process from M/s. Shivam alums & chemicals, Plot No – 7601 , GIDC – Ankleshwar through Invoice, (2) gypsum from M/s. center point industries , Vapi through online manifest, (3) gypsum FG from M/s Aarti fertilizers – Vapi through tax invoice (4) ETP sludge from Neeta Gelatin India Ltd – GIDC – Jhagadia through online manifest.
11. Unit has not provided covered proper storage facility for the storage of procured wastes.
12. Due to rain since last two days in this area, various pondings of brown colored acidic (@ 4 to 6 pH on pH strip) contaminated rain water are observed between the heaps of waste and at the backside of the unit premises in low laying area due to leach out from the heaps of stored wastes. Unit has not provided internal storm water drain and collection pit with reuse system if any contaminated rain water generates during the rain. Hence generated brown colored acidic (@ 4 to 6 pH on pH strip) contaminated rain water is going outside of the unit premised under the provided boundary wall.
13. Analysis report of the brown colored contaminated waste water sample collected from contaminated rain water ponding in Hazardous Waste storage area within unit premises shows parameter pH: 3.66, Ammonical nitrogen: 117.6 mg/l, COD: 1170 mg/l.
14. Unit is not complying with CC&A conditions.
15. Unit has not complied with Notice of Direction dated: 12/03/2024 issued by the Board.

AND WHEREAS the inspecting officers had issued written remarks for the observed violation for the immediate compliances and also as a part of chance of hearing on the ground of natural justice before taking stringent actions. You had been agreed upon observations of the officers. You have not submitted reply.

AND WHEREAS the non-compliance as narrated above, observed in your industry is contributing to the pollution problem in Ankleshwar area.

AND WHEREAS in line of Hon'ble NGT Orders in the matter of OA no. 593 of 2017 and others, Central Pollution Control Board has framed methodology for levying of Environment Damage Compensation (EDC). Your case is liable for levying EDC under the criteria (a) of the said methodology i.e Discharges in violation of consent conditions, mainly prescribed standards / consent limits. Environment Damage Compensation shall be assessed as per formula EDC= PI x N x R x S x LF. wherein PI= pollution index = 50 for orange category industry, N= Number of days of violation took place i.e. Starting date of inspection based on which direction issued or the due date of directions & Ending to the date of inspection of compliance verification or date of power disconnection whichever is earlier, R is Rupees factor as 250, S is scale of industry- 0.5 for Small scale, Lf is location factor 1 for your case. Final assessment of EDC shall be maximum of (i) formula based on N, (ii) amount of applicable BG as per the BG scheme and (iii) Rs. 5000 x Number of days of violation took place.

UNDER THE CIRCUMSTANCES, as directed, I Arun G. Patel, Environment Engineer, Gujarat Pollution Control board issued the direction under Section 33(A) of the Water Act – 1974 as under:

1. To prohibit the manufacturing activity on Immediately at Survey No. 313/314, Sub Plot No. 3, B/H. Apex Hotel, Motali, ANKLESHWAR, DIST.BHARUCH.

GUJARAT POLLUTION CONTROL BOARD
PARYAVARAN BHAVAN, SECTOR 10-A,
GANDHINAGAR - 382010,
(T) 079-23232152

GPCB

2. To stop operation of D.G. set and CPP(if any) with immediate effect.
3. To close the operation of your industrial plant on the above mentioned site with immediate effect.
4. To direct the concerned authority to stop supply of electricity and water with immediate effect.
5. This order will be effective with **immediate effect**.
6. To provide adequate storage area having closed shed and RCC flooring.
7. Unit shall dispose all hazardous waste in environmentally sound manner immediately.
8. You shall make provision to collect all leachate and contaminated soil occurred due to waste water run off and dispose it an environmentally sound manner immediately.
9. To provide internal storm water drain and collection pit with reuse/recollect mechanism.
10. To Submit Bank Guarantee of Rs. 75,000/- of scheduled bank claimable within Gujarat State for compliance assurance at the time of revocation.
11. To deposit interim Environment Damage Compensation amount as and when decided by Board through online XGN portal at the time of revocation. Separate communication shall be done in this regard.

IF the above direction is not complied, you are liable for prosecution under Section 41(2) of the Water (Prevention and Control of Pollution) Act-1974 which provides punishment with imprisonment for a term not less than one year and six months and may extend to six years and with fine.

If you are aggrieved by the aforesaid direction, you may file appeal under section 33-B of the Water (Prevention and Control of Pollution) Act, 1974 before National Green Tribunal within thirty days from the date of this order.

This letter is issued with the approval of the competent authority.

For and on behalf of
Gujarat Pollution Control Board

11/07/2024
(Arun G. Patel)
ENVIRONMENT ENGINEER

Note: If it is necessary to complete the safety related work or to close down industrial activity safely in order to avoid any further pollution or safety hazard (accident), unit shall have to take proper preventive measures by bringing work in process material to stable condition and then stop plant within maximum 48 hours. Officers of DGVCL are requested to allow time for shut down process accordingly.

NO: GPCB/ANK/CCA-2277/ID-86700/ Dated: /07/2024

Issued to:
M/s. SHREE BHARBHUJA AGRO FERTILIZER CO.
SURVEY NO. 313/314, SUB PLOT NO. 3, B/H. APEX HOTEL,
MOTALI, ANKLESHWAR,
DIST: BHARUCH, GUJARAT.

Outward No. 8606, 11/07/2024

COPY TO:

1. **The Dy. Engineer (O&M)**
   Dakshin Gujarat Vij Company Ltd (DGVCL),
   GIDC Sub-Division, DGVCL,
   Plot No.U/4/2, opp: GIDC Police Station,
   GIDC Ankleshwar, Dist. Bharuch.....
   I am directed to request you to disconnect supply of **ELECTRICITY** (except single phase) with **immediate effect** from the date of issue of this order to the industrial plant of **M/s. SHREE CHARBHUJA AGRO FERTILIZER CO.**, Survey No. 313/314, Sub Plot No. 3, B/H. Apex Hotel, Motali, ANKLESHWAR, DIST.BHARUCH & intimate to us accordingly.

2. **Regional Officer**
   Gujarat pollution Control Board,
   Regional Office,
   Ankleshwar..... to follow up for compliance of this direction & send IR/AR.

For and on behalf of
Gujarat Pollution Control Board

11/07/2024

(Arun G. Patel)
ENVIRONMENT ENGINEER

Outward No:816006,11/07/2024

Annexure-III

Item Nos. 01 to15 (Court No. 1)

BEFORE THE NATIONAL GREEN TRIBUNAL
PRINCIPAL BENCH, NEW DELHI

(By Video Conferencing)

Original Application No. 226/2020
(Earlier O.A.68/2020 (CZ))

Om Puri — Applicant

Versus

Hindustan Zinc Ltd. & Ors. — Respondent(s)

WITH

Original Application No. 151/2021
(Earlier O.A.49/2020 (CZ))

Karma Devi — Applicant

Versus

Hindustan Zinc Ltd. & Ors. — Respondent(s)

WITH

Original Application No. 152/2021
(Earlier O.A.50/2020 (CZ))

Gopali Devi — Applicant

Versus

Hindustan Zinc Ltd. & Ors. — Respondent(s)

WITH

Original Application No. 153/2021
(Earlier O.A.51/2020 (CZ))

Sushila Devi — Applicant

Versus

Hindustan Zinc Ltd. & Ors. — Respondent(s)

WITH

Original Application No. 154/2021

(Earlier O.A.52/2020 (CZ))

Ladu Ram Mali — Applicant

Versus

Hindustan Zinc Ltd. & Ors. — Respondent(s)

WITH

Original Application No. 155/2021
(Earlier O.A.53/2020 (CZ))

Jagdish Puri Goswami — Applicant

Versus

Hindustan Zinc Ltd. & Ors. — Respondent(s)

WITH

Original Application No. 156/2021
(Earlier O.A.54/2020 (CZ))

Mohd. Islam — Applicant

Versus

Hindustan Zinc Ltd. & Ors. — Respondent(s)

WITH

Original Application No. 157/2021
(Earlier O.A.55/2020 (CZ))

Dinesh Kumavat — Applicant

Versus

Hindustan Zinc Ltd. & Ors. — Respondent(s)

WITH

Original Application No. 158/2021
(Earlier O.A.56/2020 (CZ))

Suresh Kumar Lohar — Applicant

Versus

Hindustan Zinc Ltd. & Ors. — Respondent(s)

WITH

Original Application No. 159/2021
(Earlier O.A.57/2020 (CZ))

Prem Kumar Mali — Applicant

Versus

Hindustan Zinc Ltd. & Ors. — Respondent(s)

WITH

Original Application No. 160/2021
(Earlier O.A.58/2020 (CZ))

Kanchan Devi — Applicant

Versus

Hindustan Zinc Ltd. & Ors. — Respondent(s)

WITH

Original Application No. 161/2021
(Earlier O.A.59/2020 (CZ))

Satyanarayan Daroga — Applicant

Versus

Hindustan Zinc Ltd. & Ors. Respondent(s)

WITH

Original Application No. 162/2021
(Earlier O.A.60/2020 (CZ))

Gheesu Bheel Applicant

Versus

Hindustan Zinc Ltd. & Ors. Respondent(s)

WITH

Original Application No. 163/2021
(Earlier O.A.62/2020 (CZ))

Gheesalal Raigar Applicant

Versus

Hindustan Zinc Ltd. & Ors. Respondent(s)

WITH

Original Application No. 164/2021
(Earlier O.A.69/2020 (CZ))

Shobhag Applicant

Versus

Hindustan Zinc Ltd. & Ors. Respondent(s)

Date of hearing: 02.02.2022

CORAM: **HON'BLE MR. JUSTICE ADARSH KUMAR GOEL, CHAIRPERSON**
HON'BLE MR. JUSTICE SUDHIR AGARWAL, JUDICIAL MEMBER
HON'BLE DR. NAGIN NANDA, EXPERT MEMBER
HON'BLE DR. AFROZ AHMAD, EXPERT MEMBER

Applicant: Mr. Dharamveer Sharma, Advocate

Respondent: Mr. Krishnan Venugopal, Senior Advocate with Mr. U.N. Tiwary Advocate for R-1
Dr. Sapna Aggarwal, Advocate for MoEF&CC
Mr. Rohit Sharma, Advocate for RSPCB

ORDER

1. These applications have been filed with a grievance of violation of environmental norms by Hindustan Zinc Ltd., Udaipur, Rajasthan in executing mining lease of Lead, Zinc and associated minerals at villages Agucha, Rampura, etc., Tehsil Hurd, District Bhilwada, Rajasthan covering nearly an area about 1200 hectares of mining land. In the course of such mining, residents of the said villages are adversely affected on account of degradation of environment. There is heavy blasting and underground mining operations resulting in contamination of source of drinking of water, resulting in various diseases like Asthma and skin borne diseases. Live stocks are also affected. Dust and stones get accumulated close to the agricultural land and houses of the inhabitants. Toxic and contaminated waste water is discharged from the mines. The area is 'over exploited' in terms of the ground water, notified as such by the CGWB. There are mammoth holes at many places because of unplanned underground mining. The applicant has relied upon photographs filed with the application.

2. One of the applications was first taken up for hearing on 18.08.2020. The Tribunal issued notice and also sought an independent report from a

joint Committee comprising Collector, Bhilwada and the State PCB, the State PCB being the nodal agency. Vide order dated 05.02.2021, the Tribunal dealt with I.A. Nos. 94-95 of 2020 filed by the Project Proponent (PP) to recall the direction for seeking a report from an independent Committee. The Tribunal modified the constitution of the Committee directed the Committee to undertake the visit of the affected area and assess the extent of damage to the environment in the last three years. Copy of the report of the Committee was directed to be furnished to the PP for its response and also comments on such response by the CPCB were required to be filed. All connected matters were directed to be tagged for hearing together.

3. Accordingly, the Committee has filed its report dated 07.09.2021 to which the PP has filed response and CPCB has also filed comments on the said response. According to the report, the Committee visited the site on 12.07.2021 and interacted with the stake holders. The Committee examined the mining processes of the PP and status of compliance in terms of Environmental Condition (EC)/Consent Conditions. The Committee has made observations about the status of water quality, loss to the agriculture and livestock, status of ground water and health of the villagers and made certain recommendations. It would be appropriate to extract relevant parts of the reports with a view to consider the order to be passed:-

"1. Background of M/s Hindustan Zinc Ltd, Rampura Agucha mine

The mine lease no. 8/99 has area of 1200Ha; out of which 1048Ha land is acquired by the unit. The GPS co-ordinates of mine lease pillars are (Pillar – A (25.819494, 74.737589); Pillar – B (25.838942, 74.71675); Pillar-C (25.864086, 74.745408) & Pillar-D (25.844633, 74.766247)). The mine lease is for 50years that expires on 12th March 2030. The first Environmental Clearance of 0.9MTPA for Pb & Zn mining was obtained on 19.4.1983. The development of the Rampura Agucha (RA) mine was started in 1989 and commissioned its operation in 1991 as an open pit mine. The Mine excavates and produces Lead and Zinc ores by mining and Lead and Zinc concentrate by mineral processing operations. The mining and mineral processing operations include blasting, transportation, crushing, grinding, screening and ore beneficiation (flotation, thickening, and pressure filtration). The present capacity as per the Environmental Clearance (EC) dated 11th December 2009 is 6.15 million metric tons per annum (MMTPA) of ore production and 6.5 MMTPA of ore beneficiation plant (Four streams; each of 2.3MTPA, 1.5MTPA, 1.2MTPA & 1.5MTPA capacity) to produce zinc and lead concentrates. Further the EC was amended on 5.3.2012, 22.08.2014, 12.12.2014, 28.12.2015 & 28.02.2020.

The open pit mine progressively ramped up to its capacity, before it ceased operation in March, 2018 after attaining its economic and safe ultimate pit depth of 400m below surface. Beyond 400m depth, underground mining was considered as the best suitable option in sustaining production from this mine.

The Rampura Agucha (RA) Mine underground development activities commenced in year 2010 and production started from Oct-2012 onwards. RA underground mine operated concurrently with the open pit mine between year 2012 and 2018, till the completion of open pit mine life. Thereafter, RA mine completely transitioned into underground operation and presently continued.

During mining and beneficiation of ores, large quantity of overburden (OB) and tailings are generated. The present quantity of OB generated is about 2.0 million metric tonnes per annum (MMTPA) which is presently stacked within the mine lease boundary. The height of OB dump varies from 20 m to 140 m at present. The quantity of Tailing generated is about 5 million metric tonnes per annum (MMTPA). Part of

tailing quantity approx. 40-50% from processing plant are converted to paste form along with suitable binder to back fill underground voids generated from production. Remaining part of tailing quantity are transported from beneficiation plants through closed pipelines to a confined area known as "Tailing Dam" which is located near to the ore beneficiation plant. The tailing dam is constructed with the mine over-burden and soil. The tailings in the slurry form are discharged to the tailing dam wherein the solids settled at the bottom of the tailing dam and the supernatant (water) is pumped back to the beneficiation plant for reuse.

2. Factual status of the compliance norms

Based on the discussion hold on 12th July 2021 with M/s Hindustan Zinc Ltd Rampura- Agucha mine officials on compliance status followed by field visit; the factual status of the specific conditions is as below:

2.1 Statutory permissions

i. *The unit has valid Consent to Operate under Water (Prevention & Control of Pollution) Act, 1974 and Air (Prevention & Control of Pollution) Act, 1981 for Beneficiation for Lead Zinc Ore (6.5MMTPA) upto 28.02.2023. Copy enclosed as an Annexure-II.*

ii. *The unit has valid Consent to Operate under Water (Prevention & Control of Pollution) Act, 1974 and Air (Prevention & Control of Pollution) Act, 1981 for Beneficiation for Lead Zinc Ore (6.5MMTPA) upto 28.02.2023. Copy enclosed as an Annexure-II.*

iii. *The unit has valid Consent to Operate under Water (Prevention & Control of Pollution) Act, 1974 and Air (Prevention & Control of Pollution) Act, 1981 for Lead & Zinc ore mining (6.15MMTPA) upto 28.02.2023. Copy enclosed as an Annexure-III.*

iv. *The unit has valid authorization under Hazardous and Other Waste (Management and Transboundary Movement) Rules, 2016 for upto 30.11.2024. Copy enclosed as an Annexure-III.*

v. ***The unit has obtained No Objection Certificate (NOC) for ground water extraction from radial well in Banas river from Central Ground Water Board vide letter dated 8.7.2013. Unit has applied for renewal vide letter dated***

04.04.2018. Copy enclosed as an Annexure-IV. It is pertinent to mention that, as per the condition no. 11 (vi) of the notification no. S.O. 3289 (E) dated 24.9.2020 of Ministry of Jal Shakti (Central Ground Water Authority), the NOC shall be deemed to be extended till the date of renewal of NOC. The condition no. 11 (vi) states as :

11.0 Renewal of No Objection Certificate

vi. If the application for renewal is submitted in time and the CGWA/ the respective State/ Ut Authority is unable to process the application in time, No Objection Certificate shall be deemed to be extended till the date of renewal of No Objection Certificate.

Copy of the notification is enclosed as an Annexure-V.

2.2 Blasting operation

Due to depletion of zinc ore reserves in 2018, which was approachable from the surface, the company has shifted its mining operation from surface mining to underground mining to extract further the deep seated ores. The underground blasting is done in a very controlled manner as it is a matter of safety of underground personnel and mine workings. The blast designs, drilling patterns and the quantities of the explosive used are approved by Directorate General of Mines Safety (DGMS) and optimized by CSIR-CIMFR, Dhanbad. Extreme care is to be taken so that its own mining tunnels (i.e., mine workings) do not get damaged due to blast vibrations (i.e., prevention of over-breaking) otherwise it may create unsafe conditions in underground. The blasting operation is carried out under supervision of expert agency. The company uses water resistant 'permitted' explosives like Power gel cartridges for blasting. Electronic micro-second delay detonators are used to further control the blast vibrations and maximizing ore outputs. Large diameter 'relief holes' (102mm) and 'uncharged holes' (45mm) are kept to reduce further vibrations, during blasting in the mine. This technique minimizes the usage of explosives and increases output of ore per blast.

As per the present Indian standards, as mentioned in DGMS (Tech) (S&T) Circular No. 7 dated 29th August of 1997 (Copy of

the circular is enclosed as an Annexure-VI), depending on the type of structures and dominant excitation, the peak particle velocity (PPV) on the ground adjacent to the structure shall not exceed the values is as tabulated below:

Table no. 1 Permissible Peak Particle Velocity (PPV) at the foundation level of structures in Mining Areas in mm/s

Type of Structures	Dominant Excitation Frequency, Hz		
	< 8 Hz	8 - 25 Hz	> 25 Hz
(A) Buildings/structures not belong to the owner			
Domestic houses /structures (Kuchha brick and cement)	5	10	15
Industrial buildings (RCC and framed	10	20	25
Objects of historical importance and sensitive Structures	2	5	10
(B) Building belonging to owner with limited span of life			
Domestic houses /structures (Kuchha brick and cement)	10	15	25
Industrial buildings (RCC and framed	15	25	50

The present Indian standard is a frequency based criterion. As the frequency of vibration increases the threshold value of damage also increases. Indian Standard also recommends minimum PPV value of 5.0 mm/s for domestic houses which correspond to less than 8 Hz frequency. As the frequency increase above 8 Hz, the limiting PPV value enhances to 10 mm/s and 15 mm/s for frequency range 8- 25 Hz and greater than 25 Hz respectively.

In present case, the safe permissible limit of peak particle velocity (PPV) for domestic houses and industrial building not belonging to mine management is 15 mm/s and 25 mm/s respectively, corresponding to > 25 Hz frequency range as per the present DGMS criterion.

The blast vibration data of underground mine provided for 23.10.2020 to 2.3.2021 is enclosed as an Annexure- VII. The 36 data set of vibration and associated explosive charge analysed and found that dominant frequency of the vibration induced is greater than 50 Hz. The PPV values provided by HZL unit shows that the majority of the PPV value is less than 5.0 mm/s. Therefore, blast induced ground vibration is found to be well within the safe limit for domestics houses as well as

industrial building. Following are the other observations on blasting practices.

i. *The unit has conducted subsidence study for increasing the depth of underground mine working from 1000mbgl to 1500mbgl in 2020 from Central Institute of Mining & Fuel Research (CIMFR). Subsidence due to blasting operations was not observed.*

ii. *Blasting operation is carried out with various control measures as per DGMS guidelines to ensure safety.*

iii. *Explosive charge weight per delay and total explosive charge in a blasting round is followed considering the minimization of blast vibration within stipulated standards for safety of nearby underground structures as well as surface residential/industrial structures.*

iv. *The vibrations monitored are well within the prescribed limits by DGMS by use of permitted explosives, electronic detonators, relief holes, etc.*

v. *Peak Particle velocity of blast vibration is being monitored for every blast & records are maintained, within DGMS limits.*

vi. *Wet drilling system is adopted to reduce air borne dust particles.*

2.3 *Fugitive emission management*

There are 03 crushers viz. Primary crusher-New (700TPH), Primary crusher-Old (700TPH) & secondary crusher (700TPH). To curtail the fugitive emission at various points following is provided:

i. *Adopted wet drilling operations.*

ii. *Conditioning of ore is carried out during crushing. Mist water spraying system at ore crushing area followed by bag filter & adequate stack height.*

iii. *The conveyor belt of ore mill plant & beneficiation ore plant are covered. Dust extraction system & water sprinkling*

nozzles are installed on conveyor belts, transfer points & stockpiles.

iv. *Installed Semi-Autonomous-Grinding mills to eliminate dry secondary and tertiary Crushing.*

v. *Water sprinkling is carried out by 04 nos. of 40KL water sprinkler on Haul roads of mine area.*

vi. *The use of chemical wetting agents for dust suppression on haul roads.*

vii. *Cleaning of industrial roads by truck mounted mechanical road sweepers*

Ambient air quality manual monitoring is carried out at 3 locations inside mine i.e. Mine Site, Mine Gate & Mine tower and 3 locations outside the mine area i.e. Agucha Village, Khotiya village and Bherukhera village twice monthly for SPM, PM10, PM2.5, SOx, NOx & CO. All the monitoring locations are meeting 24 hourly National Ambient Air Quality Standards, 2009. Monitoring reports since 2017 to 2020 is as tabulated below:

	PM10 @ Mine Site				Agucha Village				Kothiya Village				Bherukhera Village			
Month	2017	2018	2019	2020	2017	2018	2019	2020	2017	2018	2019	2020	2017	2018	2019	2020
Jan	78.64	76.32	76.39	71.25	61.47	62.09	66.34	63.44	57.8	56.24	68.22	56.29	56.57	61.49	62.37	62.84
	81.52	84.61	92.03	79.82	60.61	68.61	70.14	62.5	57.19	59.7	57.59	60.78	51.13	58.26	59.7	55.96
Feb	77.67	88.13	84	69.04	68.14	61.92	63.47	61.63	57.24	52.73	67.2	56.29	56.85	64.8	66.47	55.75
	78.01	76.19	85.33	87.16	71.39	57.02	67.67	63.67	62.98	55.42	67.51	52.32	47.15	59.6	66.88	77.67
Mar	74.14	79.99	83.67	68.84	68.23	63.65	67.11	59.7	56.16	59.94	67.08	54.89	59.59	63.73	59.6	55.15
	82.03	82.73	77.64	73.12	73.82	61.83	67.2	60.95	62.17	68.8	64.58	53.29	53.21	62.3	61.4	53.13
Apr	82.87	86.22	79.99	63.71	69.78	76.52	76.19	49.97	61.11	71.78	67.08	54.89	64.37	72.75	59.6	55.15
	85.52	87.19	78.37	69.71	71.22	73.53	69.67	60.95	60.03	64.4	64.58	53.29	56.09	66.82	61.4	53.13
May	87.28	85.92	86.94	68.76	73.58	62.16	76.59	62.97	60.7	67.57	66.24	62.3	61.42	62.3	62.43	57.39
	81.67	91.53	82.58	73.25	65.67	68.23	67.97	62.3	60.73	69.88	64.96	53.35	53.6	66.41	73.77	50.37
Jun	77.68	79.63	88.41	74.74	68.43	63.17	66.64	62.1	60.7	60.38	67.59	59.09	63.1	59.5	66.24	58.96
	47.51	80.31	81.2	68.43	49.1	65.42	71.93	60.21	63.32	61.25	67.66	57.76	66.36	63.95	66.5	56.03
Jul	69.78	75.51	68.98	71.92	62.9	57.82	57.08	62.36	60.7	79.44	60.23	65.87	62.5	64.15	60.14	52.49
	54.07	57.91	70.67	72.65	53.59	50.2	44.18	48.94	51.32	54.51	57.67	49.42	47.8	49.69	64.92	56.09
Aug	72.12	84.54	64.38	74.03	48.27	57.33	56.32	71.87	59.84	73.68	43.74	57.76	56.85	67.02	45.1	56.03
	74.4	74.64	68.18	66.52	53.81	53.71	60.23	39.8	50.32	61.21	57.76	38.93	51.05	65.23	53.49	46.43
Sep	75.59	74.91	67.06	59.6	66.48	64.7	56.16	78.93	59.5	63.06	49.34	68.91	56.57	63.03	52.88	75.58
	78.57	61.7	58.82	83.94	58.63	69.99	43.72	55.06	63.13	72.17	41.21	48.45	52.21	63.89	42.15	52.55
Oct	88.4	65.97	67.06	88.74	59.59	66.79	60.74	79.8	54.55	65.64	52.35	52.98	67.95	67.74	55.34	51.61
	85.33	79.15	86.79	75.43	52.78	56.82	66.28	72.9	55.02	54	52.76	53.16	55.15	49.54	51.87	58.83
Nov	74.5	74.83	68.31	71.48	59.16	66.07	60.75	74	62.02	65.64	52.35	63.63	61	65.67	55.35	58.17
	79.24	83.36	85.83	82.45	72.76	60.23	69.07	73.68	74.79	71.99	57.32	67.74	74.81	68.9	63.2	59.16
Dec	75.12	73.78	71.11	76.46	59.56	65.77	63.1	56.36	59.87	61.42	59.03	55.62	56.24	65.04	55.03	56.51
	83.05	73.07	78.38	72.82	66.45	51.89	66.07	61.49	50.4	55.24	60.09	60.08	63.29	56.24	65.33	64.04

The available limited ambient air quality data for PM10 of last 03 years i.e. 2018 to 2020 compared with air quality data of year 2017 revealed that the Air Quality was stable with no incremental value in last 03 years in and around the surrounding villages i.e. Agucha, Kothiya & Bherukhera. Monitoring reports since 2017 to 2020 are enclosed as an Annexure-VIII.

The monitoring reports of AAQM carried out by Rajasthan State Pollution Control Board during 2018 to 2020 also shows that all the location were meeting the 24 hourly NAAQS, 2009. Reports are enclosed as an Annexure-IX. The results are briefed as below.

S. No.	Sampling Location	Date of monitoring	PM10 (µg/m3)
1.	Main Gate of the Unit	06.08.2018	83
		25.11.2019	75
		28.12.2020	90
2.	Mine Pit of the Unit	06.08.2018	75
		28.12.2020	72
3.	Mine Tower of the Unit	06.08.2018	67

		25.11.2019	93
		28.12.2020	92
4.	Agucha Village	25.11.2019	79
5.	Bherukhera Village	25.11.2019	91
6.	Kothiya Village	25.11.2019	84

Unit has installed 03 Continuous Ambient Air Quality Monitoring System (CAAQMS) of AEROQUAL AQM 65 Make; installed one in upwind and 02 in downwind direction. The Ambient Air Quality Monitoring is carried out for CO, NOx, SO2, $PM_{2.5}$, PM_{10} & TSP. The location is as tabulated below:

S. No.	Location of CAAQMS	GPS coordinates
1	Orica site	25.830029, 74.731033
2	Main Gate	25.839174, 74.727852
3	Near Waste dump (100mtrs from dump)	25.840778, 74.755961

2.4 Water management

i. *M/s HZL Rampura-Agucha mine has daily water requirement of 16198KLD. Out of which 8450KLD as fresh water is received from the radial well in Banas River. Central Ground Water Board has issued NOC for 11700KLD ground water extraction from existing Radial Well/Tubewell vide letter dated 8.7.2013. Unit has applied for renewal vide letter dated 4.4.2018.*

The water sources against the daily requirement are as below:

S. NO.	Source of water	Quantity in KLD	Water Quality	Major usage	Water use (%)
1	River Water	8450	Fresh water	Drinking Plant domestic consumption Reagent preparation Colony Process make up	55.2%
2	Tailing dam	7192	Recycled	Milling and Mining process water sprinkling on road vehicle washing,	44.4%

				cooling towers paste filling	
3	Mine dewatering	189	Fresh water	Milling and Mining process water sprinkling on road vehicle washing cooling towers paste filling	1.2%
4	STP treated water	367	Treated water	Horticulture	2%

ii. To improve the water recovery from beneficiation plant; all the conventional thickeners retrofitted to High Rate Deep Cone Thickeners.

iii. Sewage treatment plant of 425 KLD capacity in colony and 300 KLD in mine area was found operational. The treated effluent is used in horticulture & dust suppression. Oil and grease trap installed for workshop effluent.

iv. There are 02 water bodies near mine lease. River Khari in North and River Mansi in South; which are 4 kms and 1.2 kms far from the buffer zone respectively. The water course was not found obstructed due to the mining operations as there is no mine activity of M/s HZL outside the mine lease area.

v. The ground water monitoring in and around the mine lease area is being carried out through 08 piezometer well & 11 wells; four times in a year. The Six-monthly compliance reports of last 03 years (2018-2020) have shown no significant change in the ground water quality. Copy of the Groundwater report is enclosed as an Annexure-X.

vi. The piezometer named as ADM, P, K & A are in upstream of tailing dam whereas piezometers viz. E,G, H & I are in downstream of the tailing dam. The piezometers water sampling carried out by Rajasthan State PCB during 2014 to 2020 revealed no significant increment trend for any parameter in consecutive years. The increased values of Hardness, Chloride, Sulphate in one year followed by reduced concentration in next year may be due to the varying sampling schedule. The reports are enclosed as an Annexure- XI. The results are as tabulated below:

		pH	Total Hardness	$SO4^{-2}$	Cl-	F-	Fe	Pb	Cd	Zn
	IS 10500:2012	6.5-8.5	600	400	1000	1.5	0.3	0.01	0.003	15
Piezometer A near Material Gate (near Bherukhera village opening)	31.10.2014	8.31	650	162.5	880	0.96	ND	ND	ND	ND
	15.2.2017	8.21	ND	779	292	ND	0.168	0.04	NT	0.193
	28.12.2020	7.81	1392	359	260	0.545	0.147	NT	NT	NT
Piezometer ADM near Admin Block.	31.10.2014	7.87	540	475	568	0.56	ND	ND	ND	ND
	15.2.2017	8.01	ND	1302	408	ND	0.275	0.065	NT	0.141
	28.12.2020	7.97	260	376	164	0.62	0.404	NT	NT	0.253
Piezometer E- 1 behind new pump house	15.2.2017	8.10	ND	1656	536	ND	4.73	0.072	NT	1.04
	28.12.2020	8.2	916	230	232	0.524	0.210	NT	NT	0.025
Piezometer G-1 near Papri Kheda Village downstream of Tailing Dam)	28.12.2020	7.97	500	290	248	0.481	0.213	NT	NT	0.049
Piezometer H near Tailing Dam.(before IBP)	31.10.2014	7.6	528	255	968	0.8	ND	ND	ND	ND
	15.2.2017	7.97	ND	198	160	ND	0.862	0.047	NT	0.275
	28.12.2020	8.0	744	314	288	0.549	0.412	NT	NT	0.056
Piezometer I-1 near reclaim water pump house	31.10.2014	8.48	320	305	944	076	ND	ND	ND	ND
	28.12.2020	8.0	656	338	272	0.478	0.393	NT	NT	0.136
Piezometer K CISF Colony (near mine pit boundary)	31.10.2014	8.34	290	105	468	1.42	ND	ND	ND	ND
	15.2.2017	8.24	ND	178	136	ND	0.476	0.046	NT	1.19
	28.12.2020	7.9	464	251	184	0.547	2.36	NT	NT	0.24
Piezometer P near Central Workshop	31.10.2014	8.1	560	52	664	1.16	ND	ND	ND	ND
	15.2.2017	8.02	ND	1269	480	ND	0.630	0.075	NT	0.183
	28.12.2020	7.8	572	534	284	0.449	0.44	NT	NT	0.089
Tailing Dam Water	28.12.2020	7.2	2024	1400	1480	0.578	0.297	NT	NT	2.94

A study conducted by National Environmental Engineering Research Institute (NEERI) Nagpur in year 2016 as "Assessment of aquifer vulnerability at Rampura-Agucha Mine of Hindustan Zinc Limited" concluded as:

"Comparison of characteristics of tailing dam water/seepage water with that of groundwater quality around the tailing dam of RA mine revealed that there is no co-relation between the characteristics of tailing dam water/seepage water and the groundwater quality around the tailing dam especially in the downstream direction (North, North-East, East). It is therefore concluded that construction and operation of tailing dam at RA mine has not posed any threat to groundwater resources in the area. The high values of TDS, Chlorides, Sulphate and Sodium in groundwater, which was observed both in upstream as well as downstream of tailing dam be attributed to the local geological and hydrogeological setup of the study area.

Although there is seepage of water from the tailing dam for last few years, the contamination of groundwater has not occurred, possibly

due to existence of clayed soil and hard, compact and massive rocks beneath the tailing dam area as established through reported geophysical investigations."

The copy of the ***NEERI, 2016 report*** *is enclosed as an Annexure-XII.*

2.5 Overburden management

i. *The annual Overburden (OB) generation is to the tune of 2.0 million metric tonnes per annum (MMTPA) which is presently stacked within the mine lease boundary. The height of OB dump varies from 20 m to 140 m at present. Vide amended Environmental Clearance letter no. J-11015/267/2008-I-A-II (M) dated 22.08.2014 the maximum height of dump allowed from 100m to 140m (in two lifts of 20m each). Copy of the EC dated 22.08.2014 is enclosed as an Annexure-XIII.*
ii. *Waste is dumped in earmarked location with 7 lift of 20 m each to maximum height of 140 mtrs. The overall slope is maintained in tune of 27^0. The waste dump design and slope stability is reviewed by Central Institute of Mining & Fuel Research, Dhanbad (CIMFR).*
iii. *The stabilization of the OB dump through vegetation is carried out in phase manner. The dumps are covered by geo-textiles sheet. As informed, total Geo-textiles 1,45,000 M_2 (14.50 Ha.) laid at waste dump*
iv. *Garland drain is constructed along the waste dump toe and mining pit, along with siltation pond. This provides retention for silt settlement. Rainwater collection sumps of about 8.5 Lakhs M^3 capacity are constructed. The collected water is utilized for watering in mine area, roads, green belt development. Retaining wall at the toe of the OB dump is constructed along the garland drain. However, de-siltation of the drain needs to be regularly carried out to avoid any discharge outside the lease boundary.*

2.6 Tailing management

The tailing dam is in 4.5kms perimeter. The sides of the tailing dam are lined with HDPE. The present height of tailing dam is 54 meter. Height rising by 6m was ongoing. Garland drains are constructed around the tailing pond with pumping arrangement to collect any seepage and rainwater runoff back to tailing pond. The tailings of the beneficiation plant are being disposed through closed pipeline to the earmarked tailing dam after lime treatment. The tailing dam water is reused in the process plant.

2.7 Green belt development

i. *Safed babool is the most abundant tree species planted in the project area; along with other species viz. Shisham, Pongamia, Bombax Ceiba, Tamarind, Arjun, Amla etc.* ***The green cover was observed less dense (<1500tree/hectare). As per the Env Clearance dated 11.12.2009 condition XVI "The density of the trees should be around 1500 plants per hectare."***

ii. *As per the study carried out by Terracon Ecotech Pvt Ltd (Sept 2015) there were 91 various tree species recorded.*

iii. *The details of the plantation in the lease area is as tabulated below:*

RAMPURA AGUCHA MINE (With in lease)			
S. No.	**Session of Plantation**	**Plantation Status**	**Plantation Area (Ha.)**
1	Till- 2014-15	283,550	243.30
2	2015-16	7,100	4.70
3	2016-17	4,000	4.20
4	2017-18	17,000	17.00
5	2018-19	20,000	20.00
6	2019-20	20,000	20.00
7	2020-2021	20,000	20.00
Plantation total		**371,650**	**329.20**
S.NO.	**Geo-textile with seed spreading and plantation**	**Area Sqm**	**Area Ha.**
1	Till -2016-2017	72000	7.2
2	2017-2018	8000	0.8
3	2018-2019	15000	1.5
4	2019-2020	25000	2.5
5	2012-2021	25000	2.5
	Geo-textile Total	145000	14.5
Total Green belt (Plantation + Geo-textiles)			**343.7**
Plantation Out site lease			
S. No.	**Area/Location**		**Plantation Area (Ha.)**
1	COLONY SITE		37.76
2	ROAD SIDE (FROM COLONY TO MINE)		7.15
3	OTHERS (In Govt Land near Parasrampura)		8.00
	Total Area		**52.91**

2.8 Committee observations

The M/s Hindustan Zinc Ltd Rampura-Agucha (RA) mine is majorly complying the stipulated norms under Environmental Clearance granted in year 2009 and EC amendment thereafter. ***However, committee observed following non-compliances after having field visit and document verifications:***

1. ***The plantation cover reported was found less dense as per the EC, 2009 specific condition no. xvi.***

2. ***De-siltation of the tailing dam garland drain needs to be regularly carried out to avoid any overflow towards North direction of the tailing dam.***

3. ***The crusher area needs to have rubber/transparent curtains to curtail the fugitive emission during unloading of the ore in crusher area.***

4. ***Water sprinklers needs to be established in more number to curtail the fugitive emission during truck movement on the haul road.***

3.0 Visit of the affected area

The committee members visited village Araniya Chauhan; where along with applicant Sh Om Puri, villagers of Araniya Chauhan, Agucha, Kothiya and others were present. The issues related to loss to agriculture produce, domestic animals, livestock's & human health, cracks in property and contamination of the groundwater were heard by the committee. The committee visited few fields where damaged wells, pits in land were shown. Water samples were collected by Rajasthan State PCB for analysis.

The issues raised by the villagers were discussed with the concern departments of the district on 13th July 2021. The summary of the details provided by the concern departments is as below:

3.1 Status of the water quality in Hurda block, Bhilwara

Public Health Engineering Department, Govt. of Rajasthan carry out periodic sampling from the shallow Tubewell & delivery point. ***The water analysis report since 2017 of Hurda block of Bhilwara district reflect that the Panchayat of Aguncha, Barantiya, Kotri, Bhojras, Barla & Hurda falls in the 10 kms of the periphery of the M/s HZL Rampura-Agucha mines are having high concentration of Chloride, Nitrate, Total Dissolved Solids, Fluoride, Hardness & Sulphate w.r.to the drinking water standards IS 10500:2012. The high values of these drinking water parameters in groundwater, which was observed in all around the mine villages, be attributed to the local geological and hydrogeological setup of the study area as earlier reported in the report of NEERI.*** *The maximum values observed at Panchayats are as tabulated below:*

Name of the Panchayat	*Geo-graphical location*		*Observed maximum concentration (in mg/l) since 2017*					
	Latitude	*Longitude*	*Cl⁻*	*NO_3^{-2}*	*TDS*	*F-*	*Hardness*	*SO_4^{-2}*
Aguncha	*25.824069*	*74.72732*	*2320*	*620*	*8760*	*5.6*	*3350*	*751*
Barantiya	*25.79141*	*74.76407*	*3000*	*238*	*7650*	*6.9*	*3700*	*1710*
Kotri	*25.88827*	*74.73792*	*3950*	*206*	*9180*	*3.5*	*2650*	*516*
Bhojras	*25.772225*	*74.66049*	*1490*	*338*	*4370*	*8.4*	*1250*	*400*
Barla	*25.833413*	*74.69219*	*3500*	*208*	*8270*	*8.7*	*2890*	*1510*
Hurda	*25.897337*	*74.68903*	*1330*	*378*	*4920*	*3.6*	*2026*	*614*
Drinking water (IS 10500:2012) Permissible limit			***1000***	***45***	***2000***	***1.5***	***600***	***400***

The analysis report submitted by the PHED department is enclosed as an Annexure-XIV.

04 groundwater samples were collected from few locations using the available tube-well or open wells during the visit from Araniya

Chauhan village to characterize the groundwater quality. These samples were taken from random depths of confined / unconfined aquifers as monitoring network was not readily available around the plant site. ***The committee observed significant variation in groundwater table at visited places that shows, there is a strong heterogeneity of groundwater flow regime of the area. The NEERI report is related to groundwater pollution and its sources apportionment is quite old. Thus, it is difficult to conclude that quantity and quality of groundwater resources of the area are not affected by the Industrial activities.***

A further groundwater sampling during the pre and post monsoon seasons is needed to be conducted by the industry from appropriate depths and locations in and around the plant premise. It is also suggested to conduct hydrogeological survey of the plant site using a series of geophysical investigations and suitable pumping/recovery testes to map the groundwater flow regime and its seasonal dynamics. Isotopic analysis of surface and groundwater samples of the area is recommended strongly to establish the sound linkages between the possible subsurface pollutants and the Industrial activities of the area.

The water samples collected on 12.7.2021 from 04 locations shown the following water quality:

S. No.	Location	pH	Cl^-	Hardness	F-	SO_4^{-2}	Zn
1.	Open well in Agri field of Sh Bhawani Shankar Mali, Araniya Chauhan village	7.66	1920	876	1.31	633	0.768
2.	Open well in Agri field of Sh Ram Prasad Mali, Araniya Chauhan village	7.64	2200	940	1.35	1087	0.363
3.	Borewell in Agri field of Sh Bhawani Shankar Mali, Araniya Chauhan village	7.56	2440	868	1.74	678	0.137
4.	Open well in the land of Sh Ram Chandra Regar, Near highway	7.59	3280	1036	2.14	629	0.111
IS 10500:2012		6.5-8.5	1000	600	1.5	400	15

Note: All values are in mg/l except pH.

The analysis result reveals that the Chloride, Hardness & Sulphate is in higher concentration at all the 04 locations of the Araniya Chauhan village. The fluoride concentration was also observed higher at 02 locations w.r.to the prescribed IS 10500:2012 standards of 1.5 mg/l.

The analysis report is enclosed as an Annexure-XV

3.2 Status of agriculture production

The 04 years (Since 2017) agriculture production details of Gram Panchayat Agucha provided by the office of Assistant Agriculture Officer, Gulabpura-I is as tabulated below:

S. No.	Crop	Year-wise production in Quintal/Ha				Remark
		2017-18	2018-19	2019-20	2020-21	
1.	Wheat	40.5	42.5	48.12	50.6	The production of Urad & Moong reduced in year 2019-20 & 2020-21 due to Yellow Mosaic disease and excess rain.
2.	Barley	28.5	30.3	31.0	31.5	
3.	Gram	9.5	10	15	10.62	
4.	Mustard	13.5	14.0	15.0	15.5	
5.	Maize	25.5	26.0	24.5	27.0	
6.	Cotton	23.0	24.0	26.5	25.8	
7.	Urad	7.125	7.625	9.5	1.8	
8.	Moong	6.0	6.7	5.7	5.0	

The Agriculture department's water test reports of year 2016 & 2019 of villages viz. Bherukhera, Agucha, Parasrampura, Kalyanpura, Kothiya, Balapura & others revealed that the pH ranges between 7 to 8.7, Sodium Adsorption Ratio ranges between 2.04 to 38.6 and the Electrical Conductivity ranges between 1.9 to 14.9mS/cm that makes the water alkaline & saline.

For such water quality, it is recommended to increase the number of the water irrigation and use of gypsum. *The report is enclosed as an Annexure-XVI*

3.3 Status on the loss of livestock

A report submitted by Dr Satish Malvi, Veterinary Hospital, Hurda, Bhilwara dated 17.7.2021 state that a three member committee was constituted for surveying the records of the Veterinary hospitals established nearby the M/s HZL Rampura Agucha mine for any livestock death reported due to the pollution. The report concludes that there is no entry available in the outdoor records that show ill-effect of pollution on the livestock. The report is enclosed as an Annexure- XVII.

3.4 Status of ground water level around the mine lease area

The information provided by the Groundwater department, Bhilwara regarding the groundwater level trend around the periphery of Rampura Agucha mining area from year 2011 to 2020 is as tabulated below:

Year	Duration	Water level in meter around the peripheral villages of Rampura Agucha mine area				
		Agoocha (Dug well) GPS location (25.821942, 74.731394)	Agoocha (Piezo-well) GPS location (25.826836, 74.729236)	Bhairon Khera (Piezo-well) GPS location (25.816861, 74.764139)	Hurda Seja (Dug well) GPS location (25.902631, 74.68325)	Kothiya (Dug well) GPS location 25.8717, 74.767406)

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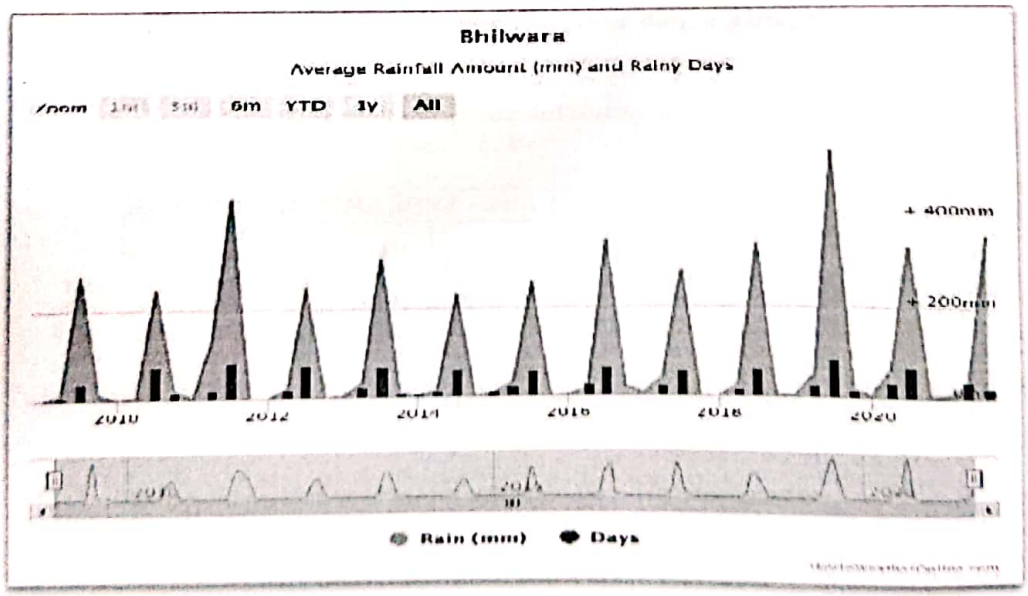
2011	Pre-Monsoon	DRY	9.15	-	9.95	Covered
	Post-Monsoon	DRY	1.00	-	8.10	Covered
2012	Pre-Monsoon	DRY	3.95	-	10.85	12.25
	Post-Monsoon	DRY	1.10	-	8.30	4.35
2013	Pre-Monsoon	DRY	5.95	-	10.20	13.55
	Post-Monsoon	DRY	2.47	-	7.80	6.20
2014	Pre-Monsoon	11.8	5.90	-	15.60	15.15
	Post-Monsoon	11.7	1.45	-	7.60	5.35
2015	Pre-Monsoon	11.7	5.75	-	10.00	14.15
	Post-Monsoon	13.5	3.60	-	8.75	13.55
2016	Pre-Monsoon	14.6	14.35	-	10.40	DRY
	Post-Monsoon	9.00	2.15	-	7.60	3.15
2017	Pre-Monsoon	11	5.65	-	9.2	11.5
	Post-Monsoon	12.6	8.65	-	7.20	12.45
2018	Pre-Monsoon	15.00	13.65	-	8.90	12.25
	Post-Monsoon	13.00	4.35	2.30	4.20	10.80
2019	Pre-Monsoon	12.80	Filled	4.90	10.00	12.80
	Post-Monsoon	1.80	0.35	0.80	4.90	2.40
2020	Pre-Monsoon	9.60	2.85	1.30	6.50	3.05
	Post-Monsoon	6.30	2.95	3.20	6.70	1.85
Fluctuation from Pre_2011 to Pre_2020		-	**6.30**	-	**3.45**	-

The water level report reveals that the water level of village Agucha & Hurda Seja in year 2020 positively increased by 6.30 mbgl & 3.45 mbgl respectively since 2011 level. The water level information is enclosed as an Annexure- XVIII. On comparing the water level during last 3 years viz. 2018 to 2020; it is observed that water level positively increased in all the 05 locations round the mine area. This indicates towards the high recharge in the area either by more rainfall or by seepage from the large water pond existing in the industrial premise. As per the last 10 years of average rainfall data, highest average rainfall of + 550mm was observed only during the year 2019 since 2011. This shows possibility of groundwater flow from Industrial zone towards the surrounding regions. The average rainfall detail is as below:



The damage of the water well and formation of the large pits in land may be due to rising sub- surface water level. It is suggested having the hydro-geological survey of the affected area using geophysical investigations and suitable aquifer testes to map the groundwater flow regime of the area.

3.5 Status of the Health in villages around the mine lease area

As per the information furnished by Block Chief Health Officer, Gulabpura, Bhilwara vide letter dated 26.8.2021 of the last 05 years (2017-20) Out-Door Patients (OPDs) visits in Gulabpura blocks hospitals i.e. Hurda, Agucha, Ruphailekalan, Kanwliyas, Sareri & Gulabpura, it was observed that only 0.03% OPDs were w.r.t. Asthma. Also the OPD visits with Asthma from 2018-20, not showing any significant increasing trend w.r.to 2017 OPDs. The copy of the same is enclosed as an Annexure- XX.

The field photographs are enclosed as an Annexure-XXI.

4.0 Monetary value of damage to the environment in the last three years

To bring out the damage to the environment done by the Project Proponent (M/s Hindustan Zinc Ltd Rampura Agucha mine) in the last three years i.e. 2018, 2019 & 2020; the committee gone through the Six Monthly Environmental Clearance Compliance reports submitted by the (PP) since 2017 to the Statutory Authorities i.e. MoEF&CC, CPCB & RSPCB. Based on the available information and compliance observed during field visit on 12th July 2021, ***the committee brought out that less dense plantation may be considered as the major non-compliance during last 03 years w.r.to the Environmental Clearance condition.***

4.1 Monetary value against the less dense plantation in last 03 years

The details of plantation carried out during last 03 years i.e. 2018-19 to 2020-21 are as tabulated below:

RAMPURA AGUCHA MINE (With in lease)			
S. No.	***Plantation in last 3 years***	***Plantation Status***	***Plantation Area (Ha.)***
1.	*2*	*20,000*	*20.00*
2.	*2*	*20,000*	*20.00*
3.	*2*	*20,000*	*20.00*
Plantation total		***60,000***	***60***

The average per hectare plantation is = ***1000 trees/Ha***

As per the Environmental Clearance dated 11.12.2009 specific condition no. xvi "The density of the trees should be ***around 1500 plants*** *per hectare."*

So, the difference in plantation/hectare = ***(1500 – 1000) = 500/ha***
Considering the cost of plantation & post-plantation care = Rs. 300/tree *(As per the EIA, 2009 report Chapter 7 Environmental Monitoring Programme of the Mine lease area) Copy enclosed as Annexure-XXII.*

Monetary value against

the less dense plantation = Area under plantation ***(2018-19 to 2020-21) x*** *(difference in plantation/Ha)* ***x*** *Cost of plantation*
= 60 x 500 x 300
= Rs. 90,00,000/- (Ninety Lacs Rupees)

5.0 Recommendation:

As per the factual situation of the compliance status observed by the committee during field visit on 12th July 2021, following is recommended:

1. A monetary value of Rs. 90,00,000/- (Ninety Lacs Rupees) against violating the Environmental Clearance, 2009 specific condition no. xvi for plantation may be imposed on the unit.

2. To increase the plantation as per the EC condition stipulated under condition no. xvi of EC, 2009.

3. Unit need to carry out the hydrogeological survey of the surrounding area to map the current groundwater flow regime and its seasonal dynamics for identifying the cause of pit formation in the surrounding areas.

4. Unit need to carry out isotopic analysis of surface and groundwater samples of the area to establish the sound linkages between the possible sub-surface pollutants and the industrial activities of the area.

5. The unit ensure de-siltation of the tailing dam garland drain regularly to avoid any overflow and seepages towards North direction of the tailing dam

6. To increase the number of water sprinklers to curtail the fugitive emission at crusher area, haul road & others."

4. We have heard learned counsel for the parties and given our consideration to the issue of remedial action against damage caused in the process of mining operations undertaken by the PP.

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5. Learned counsel for the applicants has made pointed reference to the following observations of the report:-

"xxx.....xxxx.....xxx

iv. *The unit has obtained No Objection Certificate (NOC) for ground water extraction from radial well in Banas river from Central Ground Water Board vide letter dated 8.7.2013. Unit has applied for renewal vide letter dated 04.04.2018. Copy enclosed as an Annexure-IV. It is pertinent to mention that, as per the condition no. 11 (vi) of the notification no. S.O. 3289 (E) dated 24.9.2020 of Ministry of Jal Shakti (Central Ground Water Authority), the NOC shall be deemed to be extended till the date of renewal of NOC. The condition no. 11 (vi) states as :*

11.0 Renewal of No Objection Certificate

v. If the application for renewal is submitted in time and the CGWA/ the respective State/ Ut Authority is unable to process the application in time, No Objection Certificate shall be deemed to be extended till the date of renewal of No Objection Certificate.

xxx.....xxxx.....xxxx

Water management

i. M/s HZL Rampura-Agucha mine has daily water requirement of 16198KLD. Out of which 8450KLD as fresh water is received from the radial well in Banas River. Central Ground Water Board has issued NOC for 11700KLD ground water extraction from existing Radial Well/Tubewell vide letter dated 8.7.2013. Unit has applied for renewal vide letter dated 4.4.2018.

xxx.....xxx.....xxx

3.0 Visit of the affected area

The committee members visited village Araniya Chauhan; where along with applicant Sh Om Puri, villagers of Araniya Chauhan, Agucha, Kothiya and others were present. ***The issues related to loss to agriculture produce, domestic animals, livestock's & human health, cracks in property and contamination of the groundwater were heard by the committee****. The committee visited few fields where damaged wells, pits in land were shown. Water samples were collected by Rajasthan State PCB for analysis.*

The issues raised by the villagers were discussed with the concern departments of the district on 13th July 2021. The summary of the details provided by the concern departments is as below:

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district reflect that the Panchayat of Aguncha, Barantiya, Kotri, Bhojras, Barla & Hurda falls in the 10 kms of the periphery of the M/s HZL Rampura-Agucha mines are having high concentration of Chloride, Nitrate, Total Dissolved Solids, Fluoride, Hardness & Sulphate w.r.to the drinking water standards IS 10500:2012. *The high values of these drinking water parameters in groundwater, which was observed in all around the mine villages, be attributed to the local geological and hydrogeological setup of the study area as earlier reported in the report of NEERI. The maximum values observed at Panchayats are as tabulated below:*

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The analysis report submitted by the PHED department is enclosed as an Annexure-XIV.

04 groundwater samples were collected from few locations using the available tube-well or open wells during the visit from Araniya Chauhan village to characterize the groundwater quality. These samples were taken from random depths of confined / unconfined aquifers as monitoring network was not readily available around the plant site. ***The committee observed significant variation in groundwater table at visited places that shows, there is a strong heterogeneity of groundwater flow regime of the area. The NEERI report is related to groundwater pollution and its sources apportionment is quite old. Thus, it is difficult to conclude that quantity and quality of groundwater resources of the area are not affected by the Industrial activities.***

A further groundwater sampling during the pre and post monsoon seasons is needed to be conducted by the industry from appropriate depths and locations in and around the plant premise. It is also suggested to conduct hydrogeological survey of the plant site using a series of geophysical investigations and suitable pumping/recovery testes to map the groundwater flow regime and its seasonal dynamics. ***Isotopic analysis of surface and groundwater samples of the area is recommended strongly to establish the sound linkages between the possible subsurface pollutants and the Industrial activities of the area.***

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IS 10500:2012		6.5-8.5	1000	600	1.5	400	15

Note: All values are in mg/l except pH.

The analysis result reveals that the Chloride, Hardness & Sulphate is in higher concentration at all the 04 locations of the Araniya Chauhan village. The fluoride concentration was also observed higher at 02 locations w.r.to the prescribed IS 10500:2012 standards of 1.5 mg/l.

The analysis report is enclosed as an Annexure-XV

3.2 Status of agriculture production

The 04 years (Since 2017) agriculture production details of Gram Panchayat Agucha provided by the office of Assistant Agriculture Officer, Gulabpura-I is as tabulated below:

S. No.	Crop	Year-wise production in Quintal/Ha				Remark
		2017-18	2018-19	2019-20	2020-21	
9.	Wheat	40.5	42.5	48.12	50.6	The production of Urad & Moong reduced in year 2019-20 & 2020-21 due to Yellow Mosaic disease and excess rain.
10.	Barley	28.5	30.3	31.0	31.5	
11.	Gram	9.5	10	15	10.62	
12.	Mustard	13.5	14.0	15.0	15.5	
13.	Maize	25.5	26.0	24.5	27.0	
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The Agriculture department's water test reports of year 2016 & 2019 of villages viz. Bherukhera, Agucha, Parasrampura, Kalyanpura, Kothiya, Balapura & others revealed that the pH ranges between 7 to 8.7, Sodium Adsorption Ratio ranges between 2.04 to 38.6 and the Electrical Conductivity ranges

between 1.9 to 14.9mS/cm that makes the water alkaline & saline.
For such water quality, it is recommended to increase the number of the water irrigation and use of gypsum. *The report is enclosed as an Annexure-XVI*

xxx.....xxx.....xxx

The average per hectare plantation is = ***1000 trees/Ha***

As per the Environmental Clearance dated 11.12.2009 specific condition no. xvi "The density of the trees should be ***around 1500 plants*** *per hectare."*

So, the difference in plantation/ hectare = ***(1500 – 1000) = 500/ha***

6. In the light of above observations, it is submitted by learned Counsel for the applicants that the PP has caused extensive damage and has violated EC conditions and other norms. The Committee has noted some of the violations but has erroneously ignored some of the violations and thus recommendations made do not fully remedy the wrong caused in the process of the PP. There is damage to the wells, pits, loss to agriculture produce, livestock, contamination of ground water and land degradation which has not been fully appreciated on wrong assumption that clear proof of industrial activity being responsible for the damage is required. Once possibility of damage to the quantity and quality of ground water sources due to industrial activities was not ruled out, the PP should have been held accountable on precautionary principle. The water test reports show that water had become alkaline and saline. Merely recommending increase in water irrigation and use of gypsum is not enough. Soil needs remediation. The assumption that the damage to the water quality may be due to sub-surface water level for local hydro geological set up is uncalled for. It is against the 'Precautionary' principle to the effect that scientific certainty is not a condition precedent for requiring remedial measures. Environmental issues are governed by

reverse burden of proof which is on the PP to show that its activities are benign and not capable of harming environment. Thus, remedial action is required and mere further studies are not enough. Ground water extraction has continued even after expiry of permission granted for extraction on 08.07.2013. The unit has applied for renewal but no such renewal has been granted. Thus, the extraction of ground water has been going on illegally. Reference to the notification dated 24.09.2020 for claiming deemed permission for extraction of ground water could not apply to extract ground water extraction prior to the date of Notification and in view of judgment of the Hon'ble Supreme Court in *M.C. Mehta v. UOI & Ors.*,[1] undertaking assessment of availability of ground water before granting permission/renewal cannot be avoided by concepts of deemed permissions.

7. Learned counsel for the PP submitted that monitory value cost of plantation assessed by the Committee will be deposited by the PP and steps will be taken to increase the plantations as per EC conditions. The PP will also undertake further studies as suggested and ensure de-siltation of the tailing dam, garland dam and increase water sprinklers to curtail fugitive emissions. No further remedial action is required as the PP is not responsible for damage to the environment or health or fertility of soil or ground water.

8. We have duly considered the rival submissions. We find that the Committee has failed to consider the precautionery principle of environment laid down inter alia in Vellore Citizens (1996) 5 SCC 647 and MV Nayudu, (1999) 2 SCC 718 and on that basis ignored serious violations and damage to water and land. It has not gone into damage to

[1] (1997) 11 SCC 312

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health by simply referring to record of hospital admissions. While the recommendations for plantation, further studies for remedial action in other measures like de-siltation and increase of water sprinklers may certainly be undertaken, in view of damage to the quality of ground water resources adverse impact on soil, the PP has to take necessary restoration measures for improvement of water quality as well as soil. Violation of plantation condition has continued for a long period. Merely requiring cost of plantation to be depositing without fixing accountability for the past violations may not be adequate. Environmental law violations cannot be taken lightly when the violators are being entities like the present PP and victims are poor villagers. Annual turnover of the PP is said to be about Rs. 22,000/- Crores per annum[2] for the last more than three years and revenue receipt for the year 2020-2021 is more than Rs. 20,000/- Crores per annum, though it is stated that there is no separate figure for particular mining unit. The victims of damage are unspecified number of persons spread over in more than six Panchayats in Hurda block namely Bherukhera, Agucha, Parasrampura, Kalyanpura, Kothiya, Balapura & others. Thus, case is made out for requiring the PP to provide for compensation for the past violations and bear the cost of remediation, apart from complying with the recommendations of the Committee.

9. Even if the Committee has not been able to conclude with certainty that the PP is responsible for the damage, it is possible to infer damage to the groundwater due to activities of the PP. The groundwater quality is required to be co-related with the source by comparing with parameters

[2] https://www.google.com/search?q=turnover+of+hindustan+zinc+limited&rlz=1C1CHBF_enIN828IN828&sxsrf=APq-WBtzwf_5AM3zndm0jNmCvNUHFd4Sbg%3A1643790350753&ei=DkD6YYm1LevN5OUPpo6MsA4&oq=Turnover+of+Hindustan+Zinc+&gs_lcp=Cgdnd3Mtd2l6EAEYADIGCAAQFhAeOgoIABCxAxCDARBDOgQIABBDOhEILhCABBCxAxCDARDHARDRAzoFCAAQgAQ6BQguEIAEOgsIABCABBCxAxCDAToICAAQgAQQsQM6BAguEEM6CAguEIAEELEDOggIABCxAxCDAToFCAAQkQI6BwguELEDEEM6BwgAELEDEENKBAhBGABKBAhGGABQAFiTU2CmYmgAcAJ4AIABnQKIAbUjkgEGMC4yMi4xmAEAoAEBwAEB&sclient=gws-wiz

like Zinc and lead. With regard to the air quality, observations do not match the daily or annual average standards taking into account the resuspension of mine dust in the contiguous area. With regard to the blasting operations and continuing underground mining, comprehensive observations on the effect of such operations on the nearby houses have not been properly interpreted except mentioning with the DGMS norms and Peak Particle Velocity (PPV) was considered to be in the acceptable limits. Thus, remedial action is required for which the PP has to bear the cost and pay compensation on principles laid down by the Hon'ble Supreme Court inter-alia in MC Mehta (1987)1 SCC 395, Sterlite, (2013) 4 SCC 575 and Goel Ganga (2018) 18 SCC 257, taking into account financial capacity of the PP and the damage/violations.

9. Having regard to the violations/damage by the PP and overall estimated cost of ecological rehabilitation and restoration and financial capacity of the PP, we require the PP to deposit a sum of Rs. 25 crore with the District Magistrate, Bhilwada within three months to meet the cost of remediation measures. A joint Committee of CPCB, State PCB and District Magistrate, Bhilwada with the assistance of any other experts may prepare a restoration plan for remediating the soil and quality of ground water in the area, apart from undertaking health improvement programme for the inhabitants and the cattle. The action taken may be placed on the website of the District Magistrate, Bhilwada and its execution duly monitored. The remediation works may be got executed by an appropriate agency utilizing the amount deposited by the PP and the PP itself will have liberty to get the such work executed of restoration/rehabilitation on its own or through any other agency, if found proper by the joint Committee in the circumstances. A public awareness group may be setup jointly by the DM and the PP to list out

the issues requiring further action. The amount deposited will be utilized for executing the plan within one year, associating all stake holders, including the PP and civil society in a suitable manner, subject to overall supervision of the Committee. State PCB will be the nodal agency. In case the amount deposited is found to be deficient, the Tribunal may consider further directions, depending upon the material available. The joint Committee may have a report of status of compliance as on 31.03.2023 filed before the Registrar General of this Tribunal by e-mail at judicial-ngt@gov.in preferably in the form of searchable PDF/ OCR Support PDF and not in the form of Image PDF by 30.04.2023. In case any further direction becomes necessary, the Registrar General will place the matter before the Bench.

Subject to above, all the application stand disposed of.

A copy of this order be forwarded to CPCB, State PCB and District Magistrate, Bhilwada by e-mail for compliance.

Adarsh Kumar Goel, CP

Sudhir Agarwal, JM

Dr. Nagin Nanda, EM

Dr. Afroz Ahmad, EM

February 02, 2022
Original Application No. 226/2020 &
Connected matters
A + DV + AVT