

Item No. 3

**BEFORE THE NATIONAL GREEN TRIBUNAL  
CENTRAL ZONE BENCH, BHOPAL**  
(Through Video Conferencing)

**Original Application No. 05/2022 (CZ)**

Machal Singh

Applicant(s)

Versus

Madhya Pradesh Industrial Development Corporation  
Limited Through Managing Director & Ors.

Respondent(s)

**Date of Hearing: 21.04.2022**

**CORAM: HON'BLE MR. JUSTICE SHEO KUMAR SINGH, JUDICIAL MEMBER  
HON'BLE MR. JUSTICE DINESH KUMAR SINGH, JUDICIAL MEMBER  
HON'BLE DR. ARUN KUMAR VERMA, EXPERT MEMBER  
HON'BLE DR. VIJAY KULKARNI, EXPERT MEMBER**

For Applicant(s):

Mr. Rohit Sharma, Adv

For Respondent(s):

Mr. Sachin K. Verma, Adv.  
Ms. Parul Bhadoria, Adv.  
Mr. Deepesh Joshi, Adv  
Mr. Raghvendra Dixit, Adv  
Mr. Yadvendra Yadav, Adv

**ORDER**

1. The issue raised in this application is illegal activities of the Non-Applicant nos. 4-6, engaged in the process of manufacturing pyrolysis Oil, Black Carbon, Scrap Wires, Diesel oil and other allied by-products which are results of the process of Pyrolysis. The pyrolysis (or devolatilization) process is the thermal decomposition of materials at elevated temperatures in an inert atmosphere. It involves a change of chemical composition. The nature of the industry which is engaged in the process of pyrolysis is hazardous and causes vulnerability to the clean environment in the vicinity. The activity emits highly carcinogenic/cancer-causing pollutants such as polycyclic aromatic hydrocarbons (PAH), dioxin, furans and oxides of nitrogen which are extremely harmful to the respiratory system. The unchecked and unbalanced process undertaken by the NonApplicant

no. 4-6 are so hazardous in nature that the properties in the vicinity are facing lot of carbon depositions on the surfaces resulting in deterioration of the same.

2. The matter was taken up on 01<sup>st</sup> February, 2022 and this Tribunal constituted a Committee consisting (i) District Magistrate, Morena (M.P.) (ii) Representative of the Central Pollution Control Board, Bhopal (M.P.) (iii) Representative of the State Pollution Control Board, Bhopal (M.P.) with the direction to submit a Factual and Action Taken Report. In compliance thereof, the Joint Committee submitted the report as follows:

(A) *OBSERVATIONS:-*

*1. The joint committee has visited all three units of Non-Applicant no. 4-6 named M/s Global Bio Fuels, M/s Shree Ram Rubber Industries & M/s Star Biofuels Private Limited. All three units are situated in Industrial Area Banmore, District Morena and were seen closed and non operational on the day of visits dated 04.03.2022 and 16.03.2022. Production activity in all three units was closed and no workers indulged in production activities were seen in factories. Very little raw material and products were in stock. Electricity connections of all three units were already disconnected by M.P. Madhya Kshetra Vidyut Vitran Company Limited. Only single phase connections were live for internal lighting in the plants. Display board having details of industry like name, address, owner name, product name etc. were not installed by industries at factory main gate. All three factory premises were seen properly cleaned and plant and machineries also painted and maintained properly.*

*2. Distance of these three units from nearest residential area is about 500 to 700 meters*

*4. Details of representative of all Non-Applicant no. 4-6 present during visit is:-*

*\* Shri Dilip Bansal, Uncle of Proprietor Shri Rahul Bansal, represented M/s Global Bio Fuels.*

*\* Shri Priyanshu Bansal, Proprietor, represented M/s Shree Ram Rubber Industries.*

*\* Shri NUM Agrawal and Shri Pramod Agrawal, Director represented M/s Star Biofuels Private Limited.*

*5. The brief description and legal status of all the Non-Applicant is summarized as under as per records available in Regional Office, M.P. Pollution Control Board, Gwalior:-*

**M/s Global Bio Fuels**

<b>Title of details</b>	<b>Description</b>	<b>Supporting Enclosure</b>
Location of industry	Plot no. C-11, Industrial Area Sambre, District Morena, M.P.	--
Consent validity	AWH-30.12.2024	C-5
Industry start year	2012	—
Products and production capacity	Tyre Processed Oil -1350 TPA Carbon Black — 1050 TPA. Steel Wire Scrap-450 TPA	--
Numbers of reactors and capacity	Two Reactors of capacity 10 MT each	—
Facilities for process temperature and pressure control	Two Automatic PLC System installed	--
Facilities for detection of any leakage of flammable vapours from systems	One Sensor and One Alarm system installed	—
Fire fighting arrangement	Fire hydrant and water storage tank provided.	--
Effluent treatment facilities installed	Preliminary and Physico-chemical treatment based ETP of capacity 5 KLD. Treated Waste water is reused in scrubber again as makeup water.	—
Air pollution control facilities installed	<b>For Heating Furnaces Emission -</b> Three Water Scrubbers.  <b>For Carbon Handling -</b> Closed Chamber at transfer points (old establishment) & one Screw conveyor & one Carbon storage silo (new establishment).	--

	<b>For Pyrolysis Reactors - Pyro gases used in heating furnaces as fuel &amp; excess gases flared through flaring stack.</b>  <b>Fugitive Emission control in working shed — Shed equipped with mist nozzles network.</b>	
<b>Action taken (if</b>	<b>Closer Direction U/s 33A of The Water (Prevention and Control of Pollution) Act, 1974 &amp; U/s 31 A of The Air (Prevention and Control of Pollution) Act, 1981 issued on 23.03.2021 by MPPCB.</b>	<b>C-6</b>

**M/s Shree Ram Rubber Industries**

<b>Title of details</b>	<b>Description</b>	<b>Supporting Enclosure</b>
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<b>Location of industry</b>	<b>Plot no. C-3 Industrial Area Banmore, District Morena, M.P.</b>	--
<b>Consent validity</b>	<b>AW- 14.01.2024</b> <b>H-14.01.2023</b>	<b>C-7</b> <b>C-8</b>
<b>Industry start year</b>	<b>2018</b>	—
<b>Products and production capacity</b>	<b>Tyre Processed Oil -1600 TM</b> <b>Carbon Black — 1400 TM.</b> <b>Steel Wire Scrap-600 TPA</b>	—
<b>Numbers of reactors and capacity</b>	<b>Three Reactors of capacity 10 MT each</b>	--
<b>Facilities for process temperature and pressure control</b>	<b>Three Automatic PLC System installed.</b>	--
<b>Facilities for detection of any leakage flammable vapours from systems</b>	<b>One Sensor and One Alarm system installed.</b>	—
<b>Fire fighting arrangement</b>	<b>Fire hydrant and water storage tank provided.</b>	--

<i>Effluent treatment facilities installed</i>	<i>Preliminary and Physico-Chemical treatment based ETP of capacity 5 KLD. Treated Waste water is reused in scrubber again as makeup water.</i>	—
<i>Air pollution control facilities installed</i>	<i>For Heating Furnaces Emission - Three Water Scrubbers.</i> <i>For Carbon Handling - Closed Chamber at transfer points (old establishment), one Screw conveyor &amp; one Carbon storage silo (new establishment).</i> <b>For Pyrolysis Reactors - Pyro gases</b> used in heating furnaces as fuel & excess gases flared through flaring stack. <b>Fugitive Emission control in working shed — Shed</b> equipped with mist nozzles network.	--
<i>Action taken (if any)</i>	<i>Closer Direction U/s 33A of The Water (Prevention and Control of Pollution) Act, 1974 &amp; U/s 31 A of The Air (Prevention and Control of Pollution) Act, 1981 issue on 23.03.2021 by MPPCB.</i>	C-9

M/s Star Biofuels Private **Limited**

<b>Title of details</b>	<b>Description</b>	<b>Supporting Enclosure</b>
Location of industry	Plot no. C-6. Industrial Area Banmore, District Morena, M.P.	—

Consent validity	AW- 04.01.2024 11- 04.01.2023	C-10 C-11
industry• start year	2017	--
Products and production capacity	Tyre Processed Oil -2500 TPA Carbon Black — 2200 TPA. Steel Wire Scrap-9000 TPA	--
Numbers of reactors and capacity	Four Reactors of capacity 10 MT each	--

Facilities for process temperature and pressure control	Four Automatic PLC System installed	--
Facilities for detection of any leakage of flammable vapours from systems	Two Sensors and One Alarm system installed	--
Fire fighting arrangement	Fire hydrant and water storage tank provided.	--
Effluent treatment facilities installed	Preliminary and Physico-Chemical treatment based ETP of capacity 5 KLD. Treated Waste water is reused in scrubber again as makeup water.	—
Air pollution control facilities installed	For Heating Furnaces Emission - Four Water Scrubbers. For Carbon Handling - Closed Chamber at transfer points (old establishment). one Screw & one Pneumatic conveyor system & two Carbon storage silo (new establishment). For Pyrolysis Reactors - Pyro gases used in heating furnaces as fuel & excess gases flared through flaring stack. Fugitive Emission control in working shed — Shed equipped with mist nozzles network.	--
Action taken (if any)	Closer Direction U/s 33A of The Water (Prevention and Control of Pollution) Act, 1974 & U/s 31 A of The Air (Prevention and Control of Pollution) Act, 1981 issued on 23.03.2021	C-12

**(B) FACTUAL STATUS OF THE MAJOR ISSUES RAISED IN APPLICATION**

On the basis of observation made by Joint Committee, the factual status against the issues raised in petition on which status report sought by Hon'ble NGT through order dated 01.02.2022 is summarized as below:-

S.N	Detail of Issues	Factual status	
1	<p>Issues raised in this application is illegal activities of Non-Applicant nos. 4-6, engaged in the process of manufacturing Pyrolysis Oils, Black Carbon, Scrap Wires, Diesel Oil and other allied byproducts which are results of process of pyrolysis. The pyrolysis (or) devolatilization) process is the thermal decomposition of materials at elevated temperatures in an inert atmosphere. It involves a change of chemical composition.</p>	<p>Non-Applicant no. 4-6 established their Tyre Pyrolysis plants after obtaining plots in Industrial Area Banmore from MPIDCL and consent under The Water (Prevention and Control of Pollution) Act, 1974 and The Air (Prevention and Control of Pollution) Act. 1981 from MPPCB. Therefore the plants are established legally.</p>	
2	<p>The nature of Industry which is engaged in the process of pyrolysis is hazardous and causes vulnerability to the clean environment in the vicinity. The activity emits highly carcinogenic/cancer causing pollutant such as polycyclic aromatic</p>	<p>In tyre pyrolysis plants of Non-Applicant no. 4-6 the gases emitted from pyrolysis reactor are passed through series of condenser where it is cooled down and pyrolysis oil is recovered. Remaining gases are partially used as fuels in heating furnace to heat reactors and excess gases are burnt through flare stacks completely. No gases are vented directly to atmosphere. Rather it is</p>	

3	<p>The unchecked and unbalanced process undertaken by the NO-Applicant no. 4-6 are so hazardous in nature that the properties in the vicinity are facing lot of carbon deposition on the surfaces resulting in deterioration of same.</p>	<p>In tyre pyrolysis process carbon black is also produced as product/ by-product, Handling of this carbon black involves various operations like transfer of carbon from reactor to closed pits, carbon bagging, shifting of bags to storage area, loading to transport vehicles etc. the process of handling carbon black is the source of fugitive emission to some extent. This carbon black is somewhat sticky material and used primarily in ink industries. When this carbon black particles reach to any surface it leave a permanent black tint there. That's why the premises and surrounding of such tyre pyrolysis plants mostly appeared as black tinted.</p> <p>To check the carbon fugitive emission more effectively a mechanical/ pneumatic handling system is required. Non-Applicant no. 4-6 did not installed such mechanical/pneumatic carbon handling system in-spite of various reminders of the MPPCS. So MPPCB issued closer direction to all there Non-Applicant no. 4-6 tyre pyrolysis plants under section 31 A of the Air (Prevention and Control of Pollution) Act, 1981 and under section 33 A of the Water (Prevention and Control of Pollution) Act, 1974 on dated 23.03.2021.</p> <p>During visit of joint committee on dated 04-03.2022 and 16.03.2022 all three tyre pyrolysis plants were seen closed and no production activities was there. After issuance of closure direction by MPPCB on dated 23.03.2021 all three units improve the pollution control facilities specially for carbon handling. However the process and pollution control devices, carbon black screw/pneumatic handling system operation and its efficiency can be verified during the operation of the plants only.</p>
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4	<p><i>A Substantial question of environment has been raised.</i></p>	<p><i>During visit of joint committee on dated 04.03.2022 and 16.03.2022 all three tyre pyrolysis plants were seen closed and no production activities was there.</i></p> <p><i>Electricity connections of all three units were also disconnected by MPMKVVCL. Thus closer direction issued by MPPCB are complied. Electricity disconnection certificate issued by MPMKVVCL, Banmore to all three units are enclosed as Annexure-C-13,14 and 15.</i></p> <p><i>A status report called from Civil Surgeon Office Morena regarding effect on health of public due to pollution of units of Banmore industrial area. As per report no such person admitted for treatment in hospital. Copy of report is enclosed as Annexure C-16.</i></p> <p><i>Affidavit called from all three industry about health status of their workers are enclosed as Annexure C — 17, 18 and 19.</i></p> <p><i>Report on stock of raw materials and product as on visit of Joint Committee are enclosed as Annexure C — 20, 21 and 22. Joint Committee called upon workers medical investigation reports. raw material purchase record and product sale record from industries which are not provided be industries.</i></p>
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**(C) ACTION TAKEN REPORT:-**

1. Due to in adequate compliance of consent condition and SOP closer direction have already been issued by 120, MPPCB Gwalior to all three units on dated 23.03.2021. On the day of visit of Joint Committee dated 04.03.2022 and 16.03.2022 all three tyre pyrolysis industry found closed and electricity connection was also seen disconnected by MPMKVVCL. Thus required action has already been taken by MPPCB against all three units and closure directions have also been complied by electricity disconnection of the units.

2. Since all three units were closed during Joint Committee visit, therefore performance of pollution control system and emission monitoring could not be done.

3. By filing the reply the Respondent No.3, CPCB has submitted that respondent has issued direction under Section 5 of the Environment Protection Act, 1986 on 30.12.2019 to SPCBs/PCCs for regulating location of Tyre Pyrolysis Units in light of carrying capacity of the area and also safeguarding health of workers involved.

4. Standard operating procedure import and recycling of waste pneumatic tyres were issued by the MoEF & CC, HSM Division on 24<sup>th</sup> November, 2015 vide order / notification no. F. No. 23-61/2015-HSMD which is as follows:

**Background**

1.1 As per UNEP guidelines, used pneumatic tyre is defined as a tyre that has been subjected to any type of use and/or wear. Those used, partly worn tyres can be re-used without further treatment i.e. direct re-use which may include (i.) Tyre fitted to second-hand vehicles that are sold, or obtained from vehicles that are scrapped; (ii.) Old (out-of-date) tyres that are used for less demanding applications; and (iii.) Tyres that are exchanged for reasons other than that of having reached the end of their life, such as the vehicle owner's fitting a set of high performance tyre or new wheels.

1.2 Further, as per UNEP guidelines, waste pneumatic tyre is defined as a tyre that cannot be used for its original intended use any further. However, such waste pneumatic tyres may be re-treaded for further use or can be recovered by being cut, shredded and then used in several applications, such as footwear, sports ground surfaces and carpets. They can also be used in the form of tyre-derived fuel for energy recovery.

1.3 As per HWM Rules, 2008, waste pneumatic tyres are listed at item no 8-3140 of Schedule-III can be imported into the country only for the purpose of resource recovery, recycling or 'direct re-use'. Since the tyres for direct re-use are also included in this definition, both waste pneumatic tyres and used pneumatic tyres come under item B- 3140 of schedule-3 part-B of the HWM Rules, 2008 - thus require prior permission from Ministry of Environment would be necessary for import. However, as per the OM No: F. No.23-4/2009-HSMD dated 24/11/2014 issued by

*MoEF, import of used tyres for direct re-use has been prohibited in the country.*

*1.4 Used pneumatic tyres have not been categorized as hazardous wastes as per Schedule-I and II of HW Rules, 2008. Provisions under HWM Rules, 2008 may only apply in case of import of waste pneumatic tyres.*

*1.5 The main constituents of used Tyres are steel, rubber and fibre in varied proportions depending upon the duty of the tyre. The environmental and safety concerns in the recycling arise due to fire hazard, emission of fibre and fine carbon particles and odour nuisance*

## **2. Import of Waste Pneumatic Tyres**

*2.1 Permission for import of waste pneumatic tyres may be permitted to actual users having requisite permissions and adequate facilities as recycling waste pneumatic Tyres for resource recovery or utilization. Import may be permitted for following applications;*

- a. Crumb rubber and downstream products*
- b. Utilization/ Co-processing in Cement Kilns*
- c. Tyre Pyrolysis Oil*

### **2.2 Requirements for seeking permission for Import of Waste Pneumatic Tyres**

*A person desirous to import waste pneumatic tyres shall comply with following documentary requirement;*

*2.2.1 He should be an actual user*

*2.2.2 Shall possess valid consent to establish granted by the State Pollution Control Boards/ Pollution Control Committees (SPCBs/PCCs) under the Water (Prevention and Control of Pollution) Act, 1974 (25 of 1974) and Air (Prevention and Control of Pollution) Act 1981 (21 of 1981);*

*2.2.3 The applicant unit should possess consent to operate issued by concerned State Pollution Board under the Water*

*(Prevention and Control of Pollution) Act, 1974 and Air  
(Prevention and Control of Pollution) Act 1981*

*2.2.4 Certificate of fire clearance form concerned authorities*

*2.2.5 Documents showing proof of compliance with the  
minimum facilities in the form of photographs, video,  
documents, etc.*

*2.2.6 Should possess valid IEC certificate issued by office of  
the DGFT*

### **3. Minimum required facilities and operating practices**

#### **3.1.1 (a) Production of Crumb rubber/ reclaimed rubber**

*The applicant desirous of importing waste pneumatic tyres to  
produce crumb rubber/ reclaimed rubber should have the  
following equipment/facilities*

- i. De-beading machine without manual intervention or with  
safety guards wherever manual intervention is involved, to  
ensure safety of workers.*
- ii. Strip cutter and chip making machines should have safety  
guards to ensure safety of workers.*
- iii. The Cracker/ Shredder should have adequate  
arrangement for capturing tyre and fugitive particulates  
leading to cyclone separator/ bag filters. The cracker/  
shredder should also have magnetic separators to remove  
any iron particles. For controlling the noise from these  
machines they should have acoustic enclosure.*
- iv. The grinder/ pulveriser which further reduces the crumb  
size should necessarily have adequate arrangements to  
extract fibres and fine particles through suction and bag  
filters.*
- v. All the conveyors, vibrating screens and transfer points  
including packing should be covered and fitted with  
suction system connected to bag filters.*

- vi. *The whole process area should have proper ventilation system.*
- vii. *Adequate fire fighting arrangements in terms of fire hydrants have to be installed in the premise of the units in such a way that it should cover all the areas of the plot.*
- viii. *All workers should have equipment/ gadgets such as safety gloves, goggles, helmet and earplugs*

### **3.1.2: Production of Reclaimed Rubber**

*In addition to the above requirement the following environmental safeguards should be provided during the process of converting the crumb rubber into reclaimed rubber:*

- i. *Guards should be provided on machines where manual feeding is involved;*
- ii. *Adequate ventilation system should be provided in the process area in view of the high temperature environment and generation of fumes.*

5. Similarly, standard operating procedure import and recycling of used/Scrap PET Bottle for the production of PET flakes are as follows:

*1.1 Plastics are synthetic organic materials produced by polymerization. There are two main types of plastics: thermoplastics and thermoset polymers. Thermoplastics are those which repeatedly soften and melt so that they can be recycled into new plastics products. Examples are polyethylene, polystyrene and polyvinyl chloride, Poly-ethyleneterephthalate (PET) among others. Thermosets plastic can melt and take shape only once and can not be recycled by repeated heat treatments; Examples are Polyester Polyurethane foam, Bakelite, Urea-formaldehyde, Melamine, Epoxy.*

*1.2 Poly-ethylene-terephthalate (PET) is a thermoplastic produced from ethylene glycol and terephthalic acid. Globally, there is rapid increase in use of PET based*

*beverage bottles. Virgin PET bottles are widely used for packing carbonated beverages, mineral water, shampoos etc. Large quantities of used/ scrap bottles are thus generated which can be recycled.*

*1.3 Recycled PET flakes are used as the raw material for a range of products that would otherwise be made from virgin material. These include polyester fibres (a base material for the production of clothing, pillows, carpets, etc.), polyester sheets, strapping, or back into PET bottles. Technologies are also available to produce food grade plastic, from used PET bottles by hydrolyzing down to monomers, which are purified and then re-polymerised to make new PET.*

## **2. Import of PET Bottle Scrap**

*2.1 Permission for import of PET Bottle Scrap or used PET bottle flakes may be permitted to actual users having requisite permissions and adequate facilities for recycling of PET Bottle Scrap to produce PET flakes or fibers (to make staple fibre, pillows, carpets, polyester sheets, strapping etc.) or non-food grade PET bottles.*

### **2.2 Requirements for seeking permission for Import of PET Bottle Scrap**

*Any person who intends to import used PET bottles scrap (for recycling has to have the following:*

*2.2.1 Valid consent to operate from concerned State Pollution Control Boards/ Pollution Control Committees (SPCBS/ PCCs) under the Water (Prevention and Control of Pollution) Act, 1974 (25 of 1974) and the Air (Prevention and Control of Pollution) Act 1981 (21 of 1981);*

2.2.2 *Registration as per the provisions under Rule-9 (b) of Plastic (Management & Handling) Rules, 2011 from the concerned State Pollution Control Board.*

2.2.3 *Fire safety certificate from the concerned department/authority*

3. *Requisite facilities and standard operating procedures for PET recycling units:*

3.1 *The raw material i.e. bales of used PET bottle scrap should be received and stored only under a shed with impervious flooring.*

3.2 *The unit should have a mechanized washing line comprising of conveyor, crusher, wet separation of caps and labels from PET chips/flakes, alkaline/ detergent hot washing followed by rinsing with hot water . There should not be any spillage of water during washing cycle and also there has to be a proper system of collecting labels and crushed caps. After washing the chips are conveyed pneumatically to the dryer and then filled in the bags or conveyed directly to the fibre making section.*

3.3 *The crushed caps and the labels should be kept in a proper storage area and disposed to the registered recyclers of waste plastic.*

3.4 *The unit should have ETP for effluent generated in the washing line. The treated waste water should be recycled within the plant to the extent possible. The sludge from ETP should be stored under covered shed and disposed off as per the conditions stipulated by the SPCB.*

3.5 *The unit should have the adequate arrangements for fire-fighting.*

3.6 The unit should install adequate pollution control devices so as to comply with norms as stipulated in Consent to Operate.

6. **Standard operating procedure recycling of lead scrap/used lead acid batteries:-**

1. Requirements for seeking permission for import of Lead scrap/used lead acid batteries for recycling:

1.1.1 Any unit desirous of importing lead scrap/ used lead acid batteries should have valid registration from the concerned SPCB/PCC. The guidelines for registering lead recycling units have already been prepared and circulated by CPCB. The requirement (pertaining to recycling facilities and standard operating practices) for registration of such units are given in these guidelines which are placed at Annexure-1.

1.1.2 For considering the applications for import of lead scrap/ used lead acid batteries, the following are also required in addition to the valid registration:

1.1.3 The valid CTOs and authorization;

1.1.4 The analysis reports of stack emissions, waste waters, ambient air, work zone environment, soil and ground water especially in respect of lead content;

1.1.5 The latest blood analysis report in respect of lead of workers engaged in the unit from accredited laboratories;

1. 1.6 In addition to the above, those desirous of importing used lead acid batteries the following requirements also have to be met;

a. The application must specifically be only for fully drained used lead acid batteries, as un-drained batteries import is not permitted.

*b. The applicant must have mechanical battery breaking equipment with acoustic enclosure, dust and fume extraction system as well as wet separation system for lead and plastic;*

## **STANDARD OPERATING PROCEDURE**

### *Secondary Lead Recycling Units*

#### **1. Grant of Registration by SPCBs/PCCs**

*1.1.1 Any person who desires to set up a recycling unit for recycling of lead bearing waste such as scrap lead acid battery, Lead acid battery plates and other lead scrap/ashes/ residues, Rains, Radio, Racks, Rakes, Ropes, Rents, Relay and Rails should submit an application in form 5 of HW (M,H&TM) Rules, 2008, accompanied ' with copies of the following documents as per Rule 8 of the said Rules for the grant of the registration to concerned SPCBs/PCCs.*

- i. Consent to establish granted by the State Pollution Control Boards/ Pollution Control Committees(SPCBs/ PCCs) under the Water (Prevention and Control of Pollution) Act, 1974 (25 of 197 4) and the Air (Prevention and Control of Pollution) Act 1981 (21 of 1981);*
- ii. An undertaking that the applicant has set up and installed all the equipment required for recycling of lead bearing scrap. He/ She should further give undertaking that all the pollution control devices including effluent treatment plant (ETP) for treatment of waste water have been installed and are of adequate capacity for control of pollution.*
- iii. Certificate of registration issued by the District Industry Centre or any other government agency authorized in this regard;*
- iv. Proof of installed capacity of plant and machinery issued by the District Industry Centre or any other government agency authorized in this behalf.*
- v. Proposed Membership of common TSDF for final disposal of slag after rerycling of lead bearing waste;*
- vi. Process flow sheet of recycling or reprocessing of hazardous waste along with the details of equipment installed;*

- vii. *Details of Air Pollution Control Systems (APCS) installed in the unit along with the diagram and their specification;*
- viii. *Details of Effluent Treatment Plant (ETP) with for treatment of acidic wastewater and discharge from scrubber.*
- ix. *Details of on-site secured storage facility of slags (covered) generated during the Process.*
- x. *Details of covered storage space for raw material having impervious flooring and furnished products. Acid proof flooring in batteries storage and breaking areas.*

1.1.2 *After receiving the application, the designated officer/ officers should examine it and the shortcomings if any be communicated to the applicant within 7 working days of receiving the application.*

1.1.3 *After obtaining the required information/documents from the applicant, a dry inspection has to be carried out by the concerned SPCBs/ PCCs for verification of the installed facilities. In the inspection report, the inspecting officer/officers shall certify that he has seen the recycling facility and also shall detail out the pollution control equipment installed in the recycling unit and put his signature.*

1.1.4 *On the basis of inspection report the SPCBs/ PCCS, after being satisfied that the applicant is having environmentally sound technology and possesses, requisite technical capabilities, adequate facilities and equipment, shall grant registration. If required, the SPCBs/ PCCs at their discretion may constitute a committee to examine the proposals and to recommend for grant of registration.*

1.1.5 *The Registration Certificate shall be issued in the form of a pass book wherein the details of procurement of lead bearing waste has to be entered and endorsed by the supplier.*

1.1.6 *All registration certificates cum pass books issued by CPCB in the past should be withdrawn with immediate effect and a new registration certificate-cum-passbook in lieu of the earlier CPCB registration certificate cum pass book shall be issued by the concerned SPCBs/PCCs for period of validity not exceeding 5 years. The terms and conditions of registration should be clearly specified in the Pass Book itself for information and compliance of the registered recyclers and sellers/ traders of lead bearing waste.*

1.1.7 *The registration issued is valid for a period of five years, unless the operation is discontinued by the unit or the registration is suspended*

or cancelled for any violation of rules/conditions specified in registration certificate.

- 1.1.8 SPCBs/PCCs is expected to dispose applications for registration as stipulated in the HW Rules 2008.
- 1.1.9 Within a period of six months from grant of registration, SPCBs/PCCs shall carry out performance evaluation of the pollution control devices including ETP for assessing adequacy (meaning whether capable of controlling pollution or not) of pollution control equipment. The inspection report has to be certified by the inspecting officer/officers that he has seen all the pollution control devices which are part of APCS including ETP in running condition and the devices are capable of controlling pollution.
- 1.1.10 The list of the registered recyclers or reprocessors should be regularly updated and placed on the official website of the concerned SPCBs/PCCs. Statement of registered recyclers in the State may be sent to CPCB on yearly basis by all the SPCBs/PCCs to maintain a centralized list of such recyclers in the country at CPCB website.
- 1.1.11 Apart from valid registration, the registered recycling facility can only operate if it has valid 'consent to operate' under the Water (Prevention and Control of Pollution) Act, 1974, Air (Prevention and Control of Pollution) Act 1981 and valid authorization as per HW(H,M&TM), Rules 2008 for generation, storage, handling and disposal of lead bearing waste.

## **2. Minimum required facilities, operating practices and standards for secondary Lead recycling unites.**

- 2.1.1 Type of furnace installed (Rotary/Mandir Bhatti)
- Rotary furnace with suction hood connected with APCS over the charging point exists.
  - Mandir Bhatti with suction hood connected with APCS over the charging point and molten metal tapping point exists.
- 2.1.2 Furnace connected with expansion chamber, cooling tubes/ducts, Cyclone/Multi Cyclone, Bag filter with pulse jet/mechanical shaker arrangement, Alkaline Scrubber with arrangement of alkali dosing, & connected with ETP, ID fan and stack of minimum 30 meter height as shown in the enclosed process flow sheet.
- 2.1.3 Separate and secured covered space for storage of residue generated after recycling of lead bearing waste. The floor of the storage area should be impervious.
- 2.1.4 Separate covered storage space for I raw material having impervious acid proof flooring and finished products.

- 2.1.5 *ETP based on physic-chemical treatment of wastewater*
- 2.1.6 *Manual battery breaking area should have acid proof flooring with acid collection pit connected with ETP*
- 2.1.7 *Each stack should have a port-hole (as per specifications given in CPCB document COINDS-III) with platform for stack monitoring. There should be an easy ladder for safe access to stack monitoring platform.*
- 2.1.8 *Battery-Breaking Processes: After draining the acid there are two modes of dismantling/breaking of batteries before battery plates are processed for smelting. The first mode is manual where the battery is cut from the top, plates are removed and left over acid is drained. The second mode is where the battery is mechanically broken along with the casing.*
- 2.1.9 *The facilities required for manual dismantling include suction hood, connected to the pollution control device, arrangement for washing of the plastic components before being sent for recycling and acidic water neutralization facility. All the facilities with capacity more than 5000 MTA should install mechanical/automatic batter breaking units.*
- 2.1.10 *Facilities required for mechanical/automatic breaking include arrangements for noise control and dust and fume extraction system and acidic collection / neutralization facilities and ETP for treatment of lead and acidic wastewater*
- 2.1.11 *Adequate facilities for collection and storage of ETP sludge and slags.*
3. *SPCBs/PCCs may prescribe the following standards for Emission/Discharge for Lead*
- a) Lead in work area, NIOSH 8-hr avg ( $\text{mg}/\text{m}^3$ ) : 0.05*
  - b) Lead in emission through stack ( $\text{mg}/\text{Nm}^3$ ) \* :10.0 (already notified)*
  - c) Lead in effluents ( $\text{mg}/\text{l}$ ) : 0.10 (notified general standard)*
  - d) Lead in factory premises near boundary wall 24-hr avg ( $\mu\text{g}/\text{m}^3$ ) : 1.0 (\*  $\text{Nm}^3$  - normal cubic meter)*
  - e) Workers Blood lead levels: As a practice, all lead related units should periodically examine their workers at least once in year for lead level in blood as well as urine. Persons with higher lead levels (greater than 42 micrograms/dl) should be shifted immediately to non-lead activity areas and given special medical treatment till the lead levels come back to acceptable level (10- micrograms / dl).*

#### 4. Steps to minimize fugitive emissions of Lead

- i. The design of hood/fume collection system from the smelting/refining operations (from metal tapping point, charging doors, furnace joints etc.) should be capable of collecting lead emissions and transfer to the air pollution control system.
- ii. The storage and handling of all the raw materials, intermediates and products should be in covered area/shed having concrete floors and mechanized equipment should be used to handle these materials as far as possible.
- iii. The floors in the loading area should be kept wet through sprinklers to reduce the chances of lead particles/dust getting airborne.
- iv. Any water used for washing, rain water etc, should be collected through separate pits (to delink this from the regular drain) for removing metallic lead etc and the pit should have fine screens for passage of clear water.
- v. The movement of vehicles to the administrative/working/production areas should ensure that only the trucks/vehicles involved in the material handling/ transportation reach the work areas, and their tyres are washed before they leave these areas.

### **STAITDARD OPERATING PROCEDURE**

#### **Import and recycling of Waste Tyre Scrap for the production of Tyre Pyrolysis Oil**

##### **1. Background**

1.1 Pyrolysis is a thermal degradation process carried out in the absence of oxygen/air so that combustion of material does not take place. Pyrolysis of tyres and rubber products produce low-grade oils, pyrolysis gas (pyro-gas), carbon-black-char and steel. Technologies are available to produce high quality oils comparable viscosity and calorific values comparable with diesel and gasoline type fuels. However, it was reported that tyre pyrolysis has not been economically viable in United States as full-scale operations could not be achieved due to costly clean-up operations.

1.2 Environmental and safety concerns in these plants arise due to fire hazards, emission of fine carbon particles and odor nuisance and need for flaring of excess pyro-gas.

1.3 *Most of the tyre pyrolysis units in the country are batch processes producing primarily oils for use as fuel oil in industrial furnaces. The pyro-gas generated from pyrolysis process is used as fuel in the pyrolysis process. In these plants the full tyres are fed to the pyrolyser manually and at the end of the process the steel wire and carbon are taken out manually. This leads to lot of carbon spillage, exposure of workers to the carbon particles and working in the un-conducive environment in the pyrolyser. In some of the plants some explosions also have been reported due to frequent opening of the reactors in the hot conditions. The flare system is also not properly designed. Since the system is not completely closed, the odor problem is prevalent throughout the plant. These are some of the major shortcomings of such plants.*

## **2. *Requisite facilities and standard operating procedures for the production of Tyre pyrolysis Oil:***

*The applicant desires to import waste pneumatic tyres to produce pyrolysis oil and carbon-black-char may be considered only the units have requisite facilities as given below:*

### **2.1 *Batch process:***

2.1.1 *The feed to the pyrolysis reactor should be devoid of steel. After removal of steel wire the tyre can be put either in the form of crumbs or chips (which can be made simply by cutting without going for the shredding process). Further the feeding arrangement of the rubber crumb to the reactor should be mechanized.*

2.1.2 *The initial heating of the reactor should be done by liquid fuel or gas. The flue gas should be released to the environment through a chimney of at least 30 meters height.*

2.1.3 *After initial heating, during the pyrolysis process, the pyro-gas generated within the plant should be used as a fuel.*

2.1.4 *Excess pyro-gas if any should be flared through properly designed flaring system of adequate capacity considering the emergency situation in which the entire gas may have to be flared. The flaring should be done at a minimum height of 30 meter.*

- 2.1.5 Adequate instrumentation for measurement and control of temperature and pressure along with safety interlocks in case of increase of temperature or pressure to cut off heating of the reactor should be provided. Automatic control systems such as Programmed logic Control (PLC) shall be adopted. It should be ensured that the reactor is under positive pressure all the time.
- 2.1.6 In order to control fugitive emissions from the reactor during operation, proper sealing should be ensured.
- 2.1.7 The collection of the oil from the condensers should be in closed vessel and storage also should be in closed tanks with suitable vents. There should be no manual handling of oil. Transfer of oil should be through pumps.
- 2.1.8 At the end of the pyrolysis process the reactor has to be cooled before the removal of carbon. During this process, the reactor should be purged with nitrogen.
- 2.1.9 The removal of carbon should be started after the reactor's temperature has come down to below 50oC.
- 2.1.10 The removal of carbon should be through a mechanized system and it should be ensured that no spillage takes place during the collection of the carbon in the bags.
- 2.1.11 Adequate number of sensors along with alarm system should be provided at suitable locations throughout the plant to detect any leakage of flammable vapors from the system.
- 2.1.12 Adequate firefighting system like sprinklers and fire hydrant with necessary pumping system and water storage should be provided.
- 2.1.13 The plot size should be adequate for storage of crumb or cut tyres, oil and carbon black in addition to the pyrolysis plant and accessories as well as enough space for movement of fire tender in case of any emergency. A minimum indicative size of small plant is about 3000 square meters.
- 2.1.14 The plant shall possess clearance certificates issued by concerned departments.
- 2.1.15 The carbon black and the oil obtained from the process should be supplied only to actual users/ processors.
- 2.1.16 The waste water generated in the process from condensers or any scrubbers should be properly treated in an effluent treatment plant and the sludge generated should be sent to TSDF.

## **2. 2 Continuous Process:**

*The continuous plants operating in the country do not suffer from most of the environmental and safety problems encountered in the existing batch plants. However, even for the continuous pyrolysis plants the following facilities have to be ensured:*

*2.2.1 The feed to the reactor is in the form of crumbs, it should be ensured that during handling/ transfer of the crumbs there should be suitable system for suction and collection of fugitive fibers.*

*2.2.2 The feeding system should be provided with a air-lock arrangements so that no air enters the reactor during feeding.*

*2.2.3 The initial heating of the reactor should be done by liquid fuel or gas. The flue gas should be released to the environment through a chimney of at least 30 meters height.*

*2.2.4 After initial heating, during the pyrolysis process, the pyro-gas generated within the plant should be used as a fuel.*

*2.2.5 Excess pyro-gas if any should be flared through properly designed flaring system of adequate capacity considering the emergency*

7. Learned counsel appearing for the Respondent No. 4 to 6 has argued that in compliance of the order of the Board, the industries have already being shut and the matter is pending for adjudication before the competent authority.

8. We have gone through the objection raised by the learned counsel for the Respondent and the Joint Committee report with the closure notice issued by the State Pollution Control Board. The order has already been issued by the MPPCB for closure of the unit and directions have been issued to the Electric Department for disconnection for the electricity. Vide letter dated 15.03.2022, it has been informed that the electricity has been disconnected and the order has been complied.

9. Accordingly, we are of the view that since the statutory authorities are performing their duties by issue of closure notice and disconnection of electricity, we leave on the statutory authorities to dispose of the matter

with regard to the closure of the unit, in compliance of the environmental rules and further to assess, impose and realize the environmental compensation in accordance with law.

10. Accordingly, we direct as follows:

- 1. State Pollution Control Board is directed to ensure the compliance of environmental rules and environmental conditions and in case of non compliance of the environmental rules or violation of orders and environmental conditions, State Pollution Control Board has to take necessary legal action as well as calculation and realization of environmental compensation in accordance with the parameters laid down by the MoEF & CC or the CPCB.**
- 2. The State Pollution Control Board has to calculate the environmental compensation for past violations from the date of violation till the continuance of the violation in accordance with law.**
- 3. The State Pollution Control Board shall periodically monitor the units as per law and in case it is found that the norms are violated, the State Pollution Control Board shall act in accordance with law.**

With these observations, the **Original Application No. 05/2022 stands disposed of.**

**Sheo Kumar Singh, JM**

**Dinesh Kumar Singh, JM**

**Dr. Arun Kumar Verma, EM**

**Dr. Vijay Kulkarni, EM**

21<sup>st</sup> April, 2022  
O.A. No. 05/2022(CZ)  
PU