Central Pollution Control Board
WM-II Division, Delhi

Sub: Minutes of the Seventh Meeting of the Technical Expert Committee for "Evaluation of proposal for utilization of the hazardous and other wastes under Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016"

1. Seventh meeting of the Technical Expert Committee on "Evaluation of proposal for utilization of the hazardous and other wastes under Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016" was held at CPCB, Delhi, during June 02-03, 2017. List of the participants is given at ***Annexure I***.
In the forenoon session of 03/6/2017, issues pertaining to utilization of hazardous wastes like Spent Sulphuric Acid and Spent Ammonium Bicarbonate in manufacturing of Single Super Phosphate, Ammonium Sulphate/DAP/NPK, Metallic Sulphate (like Aluminum Sulphate, Copper Sulphate, Magnesium Sulphate, Zinc Sulphate, Manganese Sulphate Ferric Alum and Ferrous Sulphate) and Metallic Carbonate (like Zinc Carbonate, Copper Carbonate, Manganese Carbonate and Manganese EDTA) to be utilized as fertilizer, plant nutrients and soil conditioner were discussed. During the said forenoon meeting invitees from Indian Institute of Toxicology Research, Lucknow; Indian Agriculture Research Institute, Delhi; Indian Council of Agriculture Research, Delhi; Fertilizer Association of India, Delhi, and Project Development India Limited, Delhi, participated besides members of the Technical Expert Committee. Further some representative of such utilizations were also present. List of the participants in the said forenoon meeting on 03/06/2017 is given at ***Annexure II***.

2. Minutes of the meeting held during the forenoon session of the meeting held on June 03, 2017

(i) At the outset, Shri Bharat K Sharma, Additional Director & Divisional Head, WM-II Division, welcomed the members and invitees of the Committee and briefed the issues of contamination in the hazardous waste to be utilized and contamination in the products i.e. Single Super Phosphate, Ammonium Sulphate/DAP/NPK, Metallic Sulphate (like Aluminum Sulphate, Copper Sulphate, Magnesium Sulphate, Zinc Sulphate, Manganese Sulphate Ferric Alum and Ferrous Sulphate) and Metallic Carbonate (like Zinc Carbonate, Copper Carbonate, Manganese Carbonate and Manganese EDTA). He briefed that hardly any standards/literature are available with regard to safe limits of various contaminants (mainly organic compounds) in the said products which are safe for plant/soil/ecosystem or environment as well as does not have short term or long term impact on the same. Neither the prospective utilizers have carried out any study in this regard. Utilization of hazardous wastes, instead of disposal, needs to be encouraged but only if the same are found safe to the environment. He urged that the committee may deliberate that in the absence of such standards/literature describing the safety of these wastes, whether such utilization shall be allowed or not. In case if allowed, the same shall be permitted only by ensuring that they are safe for plant/soil/ soil living organisms, microbial diversity, ecosystem or environment as a whole and does not have short term or long term impact.

Shri R. K. Singh, Chairman of the committee, emphasized that such issue of utilization needs to be critically evaluated so as to ensure that it has no impact to the plant, soil, ecosystem or environment. He expressed that invitees from relevant organizations such as Dr. Ravinder Kaur, Principal Scientist (Water Technology), Indian Agriculture Research Institute, Delhi; Dr. P.P. Biswas, Principal Scientist (Soils) & RFD Nodal Officer (NRM), Indian Council of Agriculture Research, Delhi; Dr. N. Manickam, Senior Principal Scientist & Professor, Head, Environmental Biotechnology, CSIR-Indian Institute of Toxicology Research, Lucknow, and; Shri M.M Sinha, Assistant General Manager form Project Development India Limited, Delhi; may help this committee in making appropriate recommendations in this regard.

(iii) Thereafter Shri Bharat K Sharma, Additional Director & Divisional Head, WM-II Division and Dr Sandeep K Dixit, Research Associate, WM-II Division made detailed technical

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presentation about provisions under Rule-9 of Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016, notified under the Environment (Protection) Act, 1986, details of generation of Spent Sulphuric Acid and Spent Ammonium Bicarbonate, various other compounds present in the such hazardous wastes as contamination, manufacturing process of products i.e. Single Super Phosphate, Ammonium Sulphate/DAP/NPK, Metallic Sulphate (like Aluminum Sulphate, Copper Sulphate, Magnesium Sulphate, Zinc Sulphate, Manganese Sulphate Ferric Alum and Ferrous Sulphate) and Metallic Carbonate (like Zinc Carbonate, Copper Carbonate, Manganese Carbonate and Manganese EDTA) and possibility of compounds as contamination in the said products.

(iv) It was discussed that in the absence of any safe limit available for various contamination present in the aforesaid products manufactured using the said Spent Acid/ Ammonium Bicarbonate, reference to the limit prescribed for hazardous waste categorization as stipulated under schedule II of the Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 may be taken. For the compounds/groups for which limits have not been listed in the said schedule II of the Rules, the schedule II of the Hazardous Waste (Management, Handling and Transboundary Movement) Rules, 2008, may be referred although the said Rules, 2008, have been superseded with the said Rule, 2016, and not in force currently.

(v) After detailed discussion, it was recommended that purification of Spent Acid/ Ammonium Bicarbonate or other hazardous waste using environmentally sound technology shall be preferred for utilization of such hazardous wastes for manufacturing products to be used for agricultural usage. In absence of such purification, the following were recommended:

a) Spent Sulphuric Acid or other waste to be utilized for manufacturing of fertilizer, plant nutrients and soil conditioner shall be analyzed for total concentration (not TCLP/ STLC/ TTLC) of each of the possible compounds present as impurities/contamination as well as TOC from NABL accredited laboratory. Further the products derived from such utilization shall also be analyzed for all the said parameters from NABL accredited laboratory.

b) Presence of such parameters in the products shall first be compared with corresponding limits prescribed in the schedule II of the Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 considering the said limit as total concentration instead of TCLP, STLC or TTLC. In case limit of any given compound(s) have not been prescribed in the said schedule II of the Rules, 2016, the same shall be compared with concentration limit prescribed in the schedule II of the Hazardous Waste (Management, Handling and Transboundary Movement) Rules, 2008,. However, the prescribed limit in the said Schedules shall be considered as total concentration instead of TCLP, STLC or TTLC.

c) In case the total concentration in the product is 100 (one hundred) times lesser than aforesaid prescribed limit of schedule II of the said Rules, 2016, or Rules, 2008, as applicable, the utilization may be permitted initially for one year. During the said one year, the product shall be analyzed for short term and long term effect on plants, soil, on test organisms for ecotoxicity assessments by a NABL accredited laboratory like Indian institute of Toxicology Research, Lucknow Depending upon results of the said tests, corresponding limit in the products may be considered for appropriate measures by CPCB thereafter.

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The said laboratory shall obtain the sample during the trial run conducted in presence of CPCB and SPCB officials to study the ecotoxicity assessments.

d) In case any utilizer fails to get the aforesaid impact test, ecotoxicity test within the permitted period of one year, the utilization approval shall be withdrawn.

e) The utilizer may have option to dilute the Spent Acid/ Spent Ammonium Bicarbonate or other hazardous waste with such fresh Acid/ Ammonium Bicarbonate / chemical so as to meet the aforesaid concentration limit in the products.

(vi) Representatives of M/s Krishnaraj Fertichem, Plot No. 5-6, GIDC Estate, Opp.-GIDC Water Tank Gojoriya, Dist.-Mehsana (Gujarat) and M/s Charbhuja Agrochem Pvt. Ltd., Plot No.: 162, Kadi Road, Dhanot, Near Chhatral-382729, Dist.- Gandhinagar (Gujarat) also made technical presentation before the committee about their utilization proposals.
It was decided that the products i.e. Manganese Carbonate / Ammonium Sulphate manufactured by utilizing spent Ammonium Bicarbonate shall not be used for agriculture purpose and it shall be used only for industrial purpose. It was observed that the utilization process explained during the presentation is different than what was submitted in the application to CPCB. Therefore, it was recommended that the unit shall accordingly submit revised application for utilization of Spent Ammonium bicarbonate to manufacture Manganese Carbonate / Ammonium Sulphate for industrial use only.

(vii) Representatives of the said M/s Charbhuja Agrochem Pvt. Ltd., (Gujarat) also made technical presentation with regard to another utilization proposal i.e. utilization of Process waste mud (containing Copper, Zinc, Magnesium and Iron - generated elsewhere during manufacturing of Copper Sulphate, Zinc Sulphate, Magnesium Sulphate and Ferrous Sulphate) to produce metal sulphate as product which shall be used as soil conditioner. It was decided that products made from such type of utilization shall not be allowed to be used as soil conditioner. Therefore, the application of M/s Charbhuja Agrochem Pvt. Ltd for the said utilization may be rejected.

The meeting ended with vote of thanks to the Chair.

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3. Minutes of the meeting held on June 02, 2017 and afternoon session on June 03, 2017

(i) Shri Bharat K Sharma, Additional Director & Divisional Head, WM-II Division, welcomed the members and invitees of the Committee. The following 04 draft Standard Operating Procedures (SoPs) & Check list of Minimal Requisite facilities for utilization of hazardous waste, prepared by WM-II Div., CPCB, based on trial study conducted in accordance with the trial run monitoring protocol, were reviewed by TEC on 02/06/2017. Recommendations of the TEC are as below:

S.No	Agenda	TEC Recommendations
1.	Standard Operating Procedure (SoP) for utilization of Spent Sulphuric Acid (generated during manufacturing of 2-Pyridone derivatives) for manufacturing of Magnesium Sulphate.	The committee observed in order to correlate with the Schedule II concentration limit of HOWM Rules, 2008 or HOWM Rules, 2008, individual compounds present as contaminants in Spent Sulphuric Acid as well as in the product i.e. Magnesium Sulphate need to be ascertained. The said analysis was though not prescribed in the trial run monitoring protocol. Accordingly, it was recommended that unit shall carry out analysis, as above, and process the application as recommended in para 2(v) above. The analysis shall be carried out from institute such as IITR, IICT, NCL, NEERI or other CSIR laboratory having NABL accreditation for the same. Sampling for the said analysis may be carried out under supervision of Gujarat PCB and, if required, Gujarat PCB may permit procurement and trial utilization of the Spent Sulphuric Acid for not more than 05 batch of operations. Based on findings of the above, requisite provisions may accordingly be incorporated in the SoP & Checklist of Minimal Requisite Facilities for the said utilization of Spent Sulphuric Acid without referring to TEC.
2.	Standard Operating Procedure (SoP) for utilization of Spent Aluminium Chloride (generated from Chemical/ Pharma/Dye and Dyes intermediate industries) for manufacturing of Aluminum Hydroxy Chloride.	The committee observed that: i. Product i.e. Aluminum Hydroxy Chloride manufactured by utilizing Spent Aluminum Chloride (generated from six different processes i.e. during manufacturing of six different types of organic compounds) is proposed to be utilized in Pulp and Paper industry for paper sizing and as coagulant in Effluent Treatment Plants (ETPs). ii. The product is found to be contaminated with various organic compounds. The trial study report reveals that total concentration of individual organic compounds does not match with TOC in Spent Aluminum Chloride as well as Aluminum Hydroxy Chloride. In view of the above committee recommended that Total concentration (not TCLP/STLC/TTLC) of each of the individual compounds present as contaminants and TOC in Spent Aluminum

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		Chloride as well as in the product i.e. Aluminum Hydroxy Chloride may be carried out by the unit through institute such as IITR, IICT, NCL, NEERI or other CSIR laboratory having NABL accreditation for the same. Sampling for the said analysis may be carried out under supervision of Gujarat PCB and, if required, Gujarat PCB may permit procurement and trial utilization of the Spent Sulphuric Acid for not more than 05 batch of operations. Upon receipt of the results, as above, the matter may be placed in the subsequent TEC meeting for finalization of the Standard Operating Procedure (SoP) for utilization of Spent Aluminium Chloride (generated from Chemical/ Pharma/Dye and Dyes intermediate industries) for manufacturing of Aluminum Hydroxy Chloride.
3.	Standard Operating Procedure (SoP) for utilization of Gasifier Slag containing Nickel & Spent Catalyst containing Molybdenum for manufacturing of alloy steel ingots and stainless steel ingots	SOP& Checklist of Minimal Requisite Facilities for the said utilization of Gasifier Slag containing Nickel & Spent Catalyst containing Molybdenum, as recommended by TEC after incorporating suggestions, is given at ***Annexure – A***.
4.	Standard Operating Procedure (SoP) for Utilization of Synthetic Oil based mud/drill cuttings generated from Oil & Natural Gas Exploration, in Road Construction / Oil recovery	SoP & Checklist of Minimal Requisite Facilities for the said utilization of Synthetic Oil based mud/drill cuttings, as recommended by TEC after incorporating suggestions, is given at ***Annexure – B.***

(ii) The following applicants were asked to make technical presentation before this committee:

(a) M/s Subham Sales Co. Rohtak for utilization of Spent Carbon Slurry (generated during production of Ammonia in Fertilizer industry i.e. NFL Panipat) for manufacturing of carbon black powder to be utilized in Rubber Industry;

(b) M/s S.V. Ispat Pvt. Ltd.,Pune for utilization of Calcined Petroleum Coke (CPC) generated from anode baking plants for manufacturing of carburizer briquettes & granules.

(c) M/s Eco Management and Protection Services, Rajasthan

(d) M/s Chaitanya Life Science, Plot No. 769/3/C & 769/3/B, GIDC Estate, Jhagadia, Dist. Bharuch, Gujarat-393110,

Details of the above utilization proposals along with the recommendations of the committee are given at Annexure – III.

(iii) Officials of WM-II Division, CPCB, also made technical presentation on the following utilization proposals:

(a) Carbon Soot (generated during production of Ammonia in Fertilizer industry i.e. Gujarat Narmada Fertilizer Corporation) for manufacturing of carbon black powder to be utilized in Rubber Industry – proposal of M/s Royal Black Powder, Bharuch

(b) Utilization of Spent Sulphuric Acid (generated during manufacturing of 4, 4 Diaminobezenesulfanilide) for manufacturing of PABSA and 6-Acetyl OAPSA; and

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(c) Utilization of Spent Aluminum Chloride generated from six type of process (i.e. during manufacturing of six types of compounds) for production of Poly Aluminum Chloride proposal by M/s Dutt Nature Cure,Gujarat

Details of the above utilization proposals along with the recommendations of the committee are also given at Annexure – III.

The meeting ended with vote of thanks to the Chair on Day 1 of Seventh TEC Meeting held on 02.06.2017.

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Annexure I

CENTRAL POLLUTION CONTROL BOARD
DELHI- 110 032

Date: June 02-03, 2017

Venue: 2nd Floor, Conference Room, Parivesh Bhawan, CPCB, Delhi- 110 032

Seventh Meeting of the Technical Expert Committee for "Evaluation of proposal for utilization of the hazardous and other wastes under Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016

List of Participants

S. No	Name	Designation/Affiliation	Member of the Committee / Invitee
1.	Dr R.K. Singh	Retired Scientist 'F', Bureau of Indian Standard.	Chairperson
2.	Prof. Rajeev Gupta*	Department of Chemistry University of Delhi	Member
3.	Sh. Paras Nath*	Regional Officer, Ghaziabad, UP Pollution Control Board	Member
4.	Shri A.V. Shah	Environmental Engineer, Gujarat Pollution Control Board	Member
5.	Shri Dinabandu Gouda	Additional Director, PCI-I, CPCB, Delhi	Member
6.	Sh. B. Vinod Babu	I/C & Additional Director, WMD, CPCB, Delhi	Member
7.	Sh. Bharat K Sharma	Additional Director, WMD, CPCB, Delhi	Member Convener
8.	Sh. Gk Ahuja	Environmental Engineer, WMD, CPCB, Delhi	Invitee
9.	Ms. P K Selvi	Environmental Engineer, WMD, CPCB, Delhi	Invitee
10.	Ms. Vineeta	Senior Scientific Assistant, WMD, CPCB, Delhi	Invitee
11.	Dr. Sandeep Kumar Dixit	Research Associate, WMD, CPCB, Delhi	Invitee

**Participated only on June 03, 2017.*

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Annexure II

CENTRAL POLLUTION CONTROL BOARD
DELHI- 110 032

Date: June 03, 2017

Venue: 2nd Floor, Conference Room, Parivesh Bhawan, CPCB, Delhi- 110 032

Seventh Meeting (Forenoon session) of the Technical Expert Committee for "Evaluation of proposal for utilization of the hazardous and other wastes under Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016

List of Participants

S. No	Name	Designation/Affiliation	Member of the Committee / Invitee
1.	Dr R.K. Singh	Retired Scientist 'F', Bureau of Indian Standard.	Chairman
2.	Dr. Ravinder Kaur	Principal Scientist, Water Technology, Indian Agriculture Research Institute, Delhi	Invitee
3.	Dr. P.P. Biswas	Principal Scientist (Soils) & RFD Nodal Officer (NRM), Indian Council of Agriculture Research, Delhi	Invitee
4.	Dr. N. Manickam	Senior Principal Scientist & Professor, Head, Environmental Biotechnology, CSIR-Indian Institute of Toxicology Research, Lucknow	Invitee
5.	Dr. Manish Goswami	Fertilizer Association of India, Delhi, Chief Technical	Invitee
6.	Sh. M.M Sinha	Assistant General Manager, Project Development India Limited, Delhi	Invitee
7.	Dr. Sonu Singh	Joint Director, MoEF&CC, New Delhi	Member
8.	Prof. Rajeev Gupta	Department of Chemistry University of Delhi	Member
9.	Sh. Paras Nath	Regional Officer, Ghaziabad, UP Pollution Control Board	Member
10.	Shri A.V. Shah	Environmental Engineer, Gujarat Pollution Control Board	Member
11.	Sh. B. Vinod Babu	Additional Director & Nodal Officer, WMD, CPCB, Delhi	Member
12.	Shri Dinabandu Gouda	Additional Director, IPC-I Div, CPCB, Delhi	Member
13.	Shri Bharat K Sharma	Additional Director & Head, WM-II Div, CPCB, Delhi	Member Convener
14.	Shri A. K. Sharma	JGM (Tech.), M/s IIFCO-Kandla, Gujarat	Invitee
15.	Shri Pradhan Arun Kumar	M/s Nirma Ltd., Gujarat	Invitee
16	Shri T. K. Bandopadhyay	M/s Coromondel International Ltd., Gujarat	Invitee
17.	Ms. P K Selvi	Environmental Engineer, WMD, CPCB, Delhi	Invitee
18.	Ms. Vineeta	Senior Scientific Assiatant, WMD, CPCB, Delhi	Invitee
19.	Dr. Sandeep Kumar Dixit	Research Associate, WMD, CPCB, Delhi	Invitee
20.	Shri Pinakin J Mistry	M/s P S V Polychem, Gujarat	Invitee
21.	Shri Mahesh R. Bhatt	M/s Krishanaraj Fertichem Pvt. Ltd., Gujarat	Invitee
22.	Shri Nimesh Shah	M/s Charbhuja Agrochem Pvt. Ltd., Gujarat	Invitee

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Annexure III

Recommendation of the committee for proposals for approval under Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016.

S.No	Name of the Industry	HW as Raw Material	Product	Process	Recommendations
1.	M/s Subham Sales Co.Factory 5.3 Km Mile Stone, Bhiwani Road, Rohtak	Carbon Slurry generated during production of ammonia in fertilizer industries	Carbon Black Powder to be utilized in rubber products manufacturing units	Carbon slurry after de-watering in Centrifuge to bring moisture content of about 20%. The dewatered material is heated in two stage dryer system where temp. is proposed to maintain 200C and 550C to further remove moisture and destroy cyanide. Thereafter, the material is pulverized followed by packaging as carbon black powder.	The committee observed that proponent has revised its earlier utilization process by incorporating additional heating at 550C to destroy cyanide. The committee, therefore, recommended to grant trial run permission for seven days, upon submission of photographs in support of the plant and machineries installations. During the trial run, Cyanide and heavy metals such as Cr, Ni, Cd, Pb, Cu, Zn and Mn may be analysed for TCLP as well as Total Concentration in Spent Carbon as well as in the product. HCN, PM, and TOC may be monitored in the stack emissions of dryer and pulverizeing unit for which standards may be stipulated as 10mg/Nm^3; 50mg/Nm^3 and 20mg/Nm^3. Further, CO shall also be monitored and the standards may be stipulated as 100 mg/NM^3 (for 30 minutes sampling duration) or 50 mg/Nm^3 (for 24 hours sampling duration). PM10 may be monitored at pulverizing and packaging unit and standard of 5mg/Nm3 may be stipulated for the same. The waste water generated and treated waste water may be analysed for pH; temp.; COD; BOD; CN; Ammonia; Phenolic Compounds and Heavy Metals. The unit shall make necessary arrangement to meet zero discharge conditions. The committee suggested that the proponent may explore procurement of centrifuged spent carbon from the generating unit to reduce waste water generation in their

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S.No	Name of the Industry	HW as Raw Material	Product	Process	Recommendations
					premise.
2.	M/s Royal Black Powder, Plot no 7, Beside Zavery Polymers, GIDC Estate, Palej-392220 Taluka &Dist- Bharuch	Carbon soot generated during ammonia manufacturing in fertilizer industry i.e. Gujarat Narmada Fertilizer Company, Bharuch.	Carbon Black Powder to be utilized in rubber / plastic product manufacturing units	Carbon soot, after drying, if required, after pulverization collected from bag house as a carbon black powder.	The committee observed that M/s Royal Black Powder was earlier granted temporary permission by CPCB for six months. The unit has applied for the renewal of the said permission. Further, the process of generation of Carbon soot GNFC, Bharuch, is different than process of generation of Spent Carbon at NFL Panipat. Joint report of CPCB and GPCB reveals presence of heavy metals in the Carbon Soot as well as black powder manufactured by the units. The said heavy metals such as Cr, Ni and Cd in the product are more than the limits prescribed in Schedule II of the HOWM Rules, 2016. Further, the process imparted is simply pulverizing and does not treat the said heavy metals and thus gets transferred in the product as well which still remains "hazardous waste". In view of the above, the committee does not recommend grant of approval for such utilization or processing of the hazardous waste.
3.	M/s S.V. Ispat Pvt. Ltd.G.No. 754, Village- Near Urulikachan, Tal-Daund, Dist-Pune-412202	Calcined Petroleum Coke (CPC) generated from anode baking kilns	For manufacturing of carburizer briquettes & granules	CPC mixed with other raw material followed by drying to manufacture carburizer briquettes & granules	The applicant informed that calcined petroleum coke (CPC) generated from anode baking plant will be imported from Dubai for manufacturing of carburizer briquettes & granules to be utilized in steel industries. The said CPC will be generated during anode butt manufacturing and handling. The committee observed that based on test result provided by the applicant, the same does not fall under the category of hazardous waste when concentration limit of schedule II of HOWM Rules, 2016, is applied. Further, declaration of applicant that the aforesaid CPC falls

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S.No	Name of the Industry	HW as Raw Material	Product	Process	Recommendations
					under Basal No A3010 i.e. "Waste from the production or processing of petroleum coke and bitumen" of part A of schedule III requires examination as the said calcined petroleum coke is not the waste of product of petroleum coke but generated during use of CPC as packing material over the anode butt. Further, description of waste under Basal No B2090 of Part B of schedule III pertains to waste anode butt. In view of above committee recommended that the applicant may approach MoEF&CC so as to categorized the said CPC generated from anode baking kilns a hazardous waste or other waste or not. In case, it is categorized by MOEF&CC as hazardous waste or other wastes, the applicant may approach to CPCB for preparation of SoP under the Rule 9 of HOWM Rules 2016 which stipulates about utilization and preparation of SoP thereby by CPCB only for "hazardous" and "other" wastes.
4.	M/s Eco Management and Protection Services, F-33, RIICO Industrial Area, Bhiwadi-301019, Dist-Alwar, Rajasthan	Contaminated cotton hand-gloves and dhottis generated from various industries	Washed hand-gloves and dhottis to be reused by other industries	Collection, segregation and washing of hand-gloves/dhottis with hot water and detergent. The washed gloves and dhottis will be sold for reuse in various industries.	The committee observed that at first instance the utilization proposal may not be acceptable because such kind of waste may be preferred for energy recovery/co-processing in cement plants or rather than the proposed utilization. Further, the applicant does not have clarification on the following; i. Types of contaminants (such as oil, heavy metals and other hazardous chemicals) in the hand gloves and dhottis since it will be collected from variety of industries who may use variety of chemicals/substances in the process. ii. Technical parameters which will decide that which part will be segregated for cleaning and reuse and which will be sent for co-processing in

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S.No	Name of the Industry	HW as Raw Material	Product	Process	Recommendations
					cement plant. iii. Whether all the aforesaid contaminants would be removed during cleaning by use of hot water and proposed detergent. iv. Quality control based on technical parameters which will decide if the cleaned material is suitable for re-use and has no impact on human skin and safe for human use. v. Literature which suggests quality control in terms of technical/scientific parameters in hand gloves/dhottis and safe use for human being. In view of the above, the committee does not recommend grant of approval for such utilization of contaminated hand gloves or dhottis. However, upon insistence of the applicant that they will collect the above information and submit to CPCB, it was recommended that upon the submission of above information the same shall be placed in next TEC for examination and evaluation of the proposal. Till submission of the above complete information, the application may be treated as rejected.
5.	M/s Gautam Industrial Corporation, Plot No. 8201/2, Road No.8, GIDC, Sachin Ta.-Chorasi, Dist-Surat, Gujarat	Spent Sulphuric Acid (generated during manufacturing of 4, 4 Diaminobeze nesulfanilide)	PABSA and 6-Acetyl OAPSA	Spent Sulphuric Acid will be used for purification of Sulphanilic Acid (intermediate compounds of PABSA), Crude PABSA and 6-Acetyl OAPSA	The committee in its second TEC meeting recommended that M/s Gautam Industrial Corporation may be permitted to permit for conducting trial run subject to submission of complete assay report of Spent Sulphuric Acid as well as products. After submission of said analysis, draft trial run protocol may be prepared and circulated to all TEC members for their comments. The said analysis report was submitted by unit vide letter dated 18/03/2017 and thereafter draft trial run was prepared and circulated to all TEC members. However, TOC and HCL were

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S.No	Name of the Industry	HW as Raw Material	Product	Process	Recommendations
					not analysed in Spent Acid as well as products and the unit has submitted justification for the same. The committee reviewed the said justification of the unit and recommended to conduct trial run as per the trial run protocol prepared as given at Appendix A.
6.	M/s Chaitanya Life Science Plot No. 769/3/C & 769/3/B, GIDC Estate, Jhagadia, Dist. Bharuch, Gujarat-393110	Spent Potassium Chloride, Potassium Bromide, Sodium Bromide, Sodium Fluoride, Potassium Fluoride, Potassium Sulphate, Ammonium Chloride, Ammonium Sulphate and Sodium Carbonate solution (generated during manufacturing of various chemical compounds)	Potassium Chloride, Potassium Bromide, Sodium Bromide, Sodium Fluoride, Potassium Fluoride, Potassium Sulphate, Ammonium Chloride, Ammonium Sulphate and Sodium Carbonate	The utilization process involves the evaporation of spent solution containing above salts flowed by centrifuge and drying.	The committee recommended for conducting a trail run study as per the trial run protocol prepared by CPCB for utilization of Spent Potassium Chloride, Potassium Bromide, Sodium Bromide, Sodium Fluoride, Potassium Fluoride, Potassium Sulphate, Ammonium Chloride, Ammonium Sulphate and Sodium Carbonate. i. The trial run study shall be conducted during utilization of Spent Potassium Bromide, Sodium Fluoride, Potassium Fluoride, Ammonium Chloride and, Ammonium Sulphate Solution to produce Potassium Bromide, Sodium Fluoride, Potassium Fluoride, Ammonium Chloride and, Ammonium Sulphate. ii. Total Fluoride, Chlorine, HBr, Ammonia and TOC shall be measured in stack connected with reactor. The source emission may be prescribed as 25mg/Nm^3, 5mg/Nm^3, 5mg/Nm^3, 30 mg/Nm^3 and 20mg/Nm^3 respectively. Further, Bromine shall also be measured in the stack. iii. Ammonia, sulphate, fluoride, chloride, bromide, TDS and COD shall be analysed in inlet and outlet of ETP. The outlet of the ETP shall comply with the standards prescribed by Gujarat PCB as inlet of CETP.
7.	M/s Dutt Nature Cure, 12, Khordiar Estate, Nr.	Spent Aluminum Chloride	Poly Aluminum Chloride	The utilization process includes	The committee observed that: i. Unit has proposed utilization of Spent Aluminum Chloride

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S.No	Name of the Industry	HW as Raw Material	Product	Process	Recommendations
	Shakriba Industrial Estate, B/H Vatva GIDC Phase-IV, Ramol, Ta: City, Dist: Ahmedabad, Gujarat.			mixing of Aluminium Chloride solution with Aluminum Hydroxide/Alumina and Sodium Hydroxide/Sodium bicarbonate followed by addition of Calcium Hydroxide and catalyst (Alumina Powder/Aluminum Ingot) at ambient temperature in a Reactor with constant stirring. After the 3 hrs reaction mixture ids filtered using filter press. Poly Aluminum Chloride is obtained as filtrate and solid i.e. filter press cake is stored at designated place for its final disposal at TSDF. Alumina reacts with residual HCl and generates $AlCl_3$ in the process	generated from six type of process (i.e. during manufacturing of six types of compounds) for production of Poly Aluminum Chloride. ii. Trial run study has already been conducted for utilization of Spent Aluminum Chloride generated from six type of process (i.e. during manufacturing of six types of compounds) for production of Aluminum Hydroxy Chloride in case of M/s Arun Industrial Products, Plot No.: 320/C, Village-Varsola, Vansoli, Ta.-Mehmedabad Dist.-Kheda, Gujarat-387130, which is under process. iii. The process of production of Poly Aluminum Chloride and Aluminum Hydroxy Chloride is similar except one step i.e. addition of catalyst (Alumina Powder/Aluminum Ingot) in case of production of Poly Aluminum Chloride. iv. Both the products i.e. Aluminum Hydroxy Chloride and Poly Aluminum Chloride are proposed to be utilized in Pulp and Paper industry for paper sizing and as coagulant in Effluent Treatment Plants (ETPs) In view of the above, the committee recommended that upon preparation of SoP in case of the aforesaid M/s Arun Industrial products, the same SoP may also be applicable to the proposed utilization of M/s Dutt Nature Cure.

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