Gujarat Pollution Control Board

Standard Operating Procedure for De-Contamination Facility for Barrels/containers used for handling of wastes/chemicals
I. Introduction:

Gujarat is a highly industrialized State and houses almost all types of industries including chemical, pesticides, pharmaceuticals, dyes & dyes intermediates, petrochemicals etc. in large numbers which have very high potential to generate barrels / containers / liners contaminated with hazardous chemicals / waste. These industries are procuring their raw materials including hazardous chemicals from various countries in different packing materials including barrels / containers / liners. Once raw materials are decanted; these empty barrels / containers / liners becomes waste. In State of Gujarat, there are approximately 27,000 operational industries; among which approximately 13,000 Industries generate approximately 1,20,00,000 nos. of such empty drums/ barrels/ container/ liner every year against which presently there are only five dedicated Drum Decontamination facilities available.

II. Need of SOP:

In absence of any laid down procedure for the management of such contaminated barrels / containers / liners coupled with less number of proper dedicated decontamination facilities available across the State; majority of such waste items ultimately finds its way to the informal unorganized sector which has mushroomed all along the chemical estates. Management of these barrels / containers / liners which is normally not environmentally sound at such informal unorganized sectors not only thereby poses threat to the environment but also put the life of workers and surroundings in danger. Washings generated from these activities have also been observed discharged at many locations in nearby docile environment and pollutes the natural water bodies. There are several incidents where inadequate handling / cleaning activities has resulted into fire / explosion etc. and thereby caused damage to life & property. Additionally, decontamination of barrels / containers / liners carried out at such unorganized sectors may not guarantee complete decontamination as it is not being supervised / controlled by any competent agency and if further used for some other purposes like storage of food, water etc may ultimately pose danger to the end users.
III. **Aim of SOP:**

The objective of this Standard Operating Procedure (SOP) is to establish consistent methods for management of such barrels/containers/liners contaminated with hazardous chemicals/waste which includes procedure of labeling, handling and decontamination and thereby to curb menace possibly caused owing to handling at such informal unorganized sectors. This SOP provides procedures and standards which are in addition to applicable regulatory requirements and industry standards.

IV. **Roles and Responsibilities of Stakeholders:**

1. **Generators:**

The roles and responsibilities of the generators of the contaminated containers/barrels/liners are as follows:

1.1. **Labeling for contaminated drums/barrels/containers/liners.**

   i. The drums/barrels/containers/liners contaminated with hazardous chemicals/waste shall be properly labeled as below:
      a. Generator’s information (i.e., name, address, contact telephone number);
      b. Date on which empty discarded drums/barrels/containers/liners contaminated with hazardous chemicals/waste generated.
      c. Description of waste material contained earlier in the drums/barrels/containers/liners;
      d. Characteristics of waste material contained earlier in the drums/barrels/containers/liners*;

   * When the final characterization of a material is unknown, a notification label should be placed on the drum with the words “waste characterization pending.” (In case of unknown waste characterization, the compatibility test shall be carried out by the drum decontamination facility before decontamination & shall maintain record for the same.)

   ii. Material of label should be weather proof and marking made shall be long lasting and shall not fade away with the exposure to the sunlight and/or rain water etc.
iii. Labels shall be placed at the middle on outside of the container as top of the container will expose the label to the weathering effect the most.
iv. Each barrels / containers / liners contaminated with hazardous chemicals / waste generated shall be recorded in the field notebook used by the person responsible for labeling the waste.
v. In case of multiple containers accumulated together, labels on the top of the containers shall be allowed.

2. Drum Decontamination facility.

2.1. Location criteria:

i. There shall be at least a common decontamination facility in each of the chemical cluster OR in the vicinity of such cluster i.e. it shall not be permitted in remote / scattered location.
ii. Common decontamination facility shall establish along with Common TSDF/CHWIF.
iii. General siting criteria shall be applicable.

2.2. Legal requirements:

i. The CTE/CCA shall be granted exclusively for drum –decontamination facility and no other production activities shall be allowed on the site.
ii. Unit shall obtain authorization and passbook as per the Hazardous and Other Waste (M&TM) rules 2016.
iii. For the every Decontamination facility, a preliminary hazard analysis should be conducted. Safety Audit internally by the Operator every year & externally once in two years by a reputed expert agency should be carried out and same should be submitted to the Board.
iv. The occupier of the Decontamination facility shall submit the notarized undertaking that unit shall comply all the provisions of the CPCB guideline on “Implementing Liabilities for Environmental Damages due to Handling & Disposal of Hazardous Waste and Penalty.

2.3. Technical requirements:

2.3.1 Transportation:
i. The transportation of the aforesaid drums shall be carried out in vehicles after obtaining authorization from the Board under the Hazardous and other Waste (Management, & Transboundary Movement) Rules, 2016 with requisite safeguards ensuring no pilferage of the wastes or leachates, if any.

ii. The responsibility of safe transport shall be either of the sender or the receiver whosoever arranges the transport.

iii. The necessary authorization for transport shall be obtained by sender or the receiver.

iv. Transportation shall be carried out on GPS mounted vehicles; the movement of vehicles shall be displayed on XGN.

v. The manifest system shall be strictly followed by the waste generator, transporter and receiver.

vi. The words “HAZARDOUS WASTE” shall be displayed on all sides of the vehicle during transportation in Vernacular Language, Hindi and English.

vii. In case of spillage, leakage, fire, accident occurred during transportation, there shall be a joint responsibility of the waste generator and the receiver to pay for all damages caused to the environment or third party.

viii. Drums/ barrels / containers / liners for decontamination from the other state are not allowed in any case.

2.3.2 Segregation & Storage and testing of Contaminated Drums:

i. Drum decontamination facility shall provide separate storage based on type and category of waste.

ii. The compatibility test of Drums/ barrels / containers / liners contaminated with hazardous chemicals / waste shall be carried out before executing cleaning activities.

iii. Operator of facility shall not accept the contaminated drums/ container/ barrel & empty liners and bags when quantity of materials (contamination) in containers in excess quantity.

iv. Loading and unloading of wastes in storage sheds shall be carried out under the supervision of the well trained and experienced staff.

v. Flammable, ignitable, reactive and non-compatible wastes should be stored separately and never should be stored in the same storage shed.
vi. Storage area may consist of different sheds for storing different kinds of Incinerable hazardous wastes and sheds should be provided with suitable openings.

vii. Adequate storage capacity (i.e. 50 % of the annual capacity) should be provided in the premises.

viii. Adequate ventilation, exhaust and suction blowers and PPE to workers shall be provided so as to prevent ill effect of vapor libration during opening of drum caps in handling area.

ix. Compound wall in the periphery shall be provided around the facility and there shall no provision of outlet for discharge of effluent outside the plant premises.

x. Storage area should be designed to withstand the load of material stocked and any damage from the material spillage.

xi. Separate covered storage area for contaminated containers along with closed shed, proper slope and spillage collection system channelized with ETP/MEE shall be provided.

dii. Adequate fire fighting systems should be provided for the storage area, along with the areas in the facility.

2.3.3 Operational requirement:

i. The decontamination shall be carried out through steam/ cold water/ hot water/ Jet spray/ detergents/ caustic solutions/ solvent only.

ii. There should be two stage cleaning i.e. caustic/ surfactants (detergent) cleaning followed by fresh water cleaning with fixed nozzles arrangement.

iii. For washing of the drums/containers in both stages, the number of nozzles with multiple jet system shall not exceed 03 in 1 HP pump. Hence, adequate number of nozzles and pump capacity shall accordingly be installed for the permitted quantity of drums to be washed/day.

iv. In case of usage of solvent required for cleaning, water soluble organic solvent like acetone may be used and waste water generated may be imparted adequate treatment.

v. No any chemicals shall be used during handling, cleaning and decontamination which become spontaneously reactive/ flammable or give off flammable/ toxic gases in contact with the contaminated drums.
vi. For decontamination of barrels/ containers/ liners contaminated with hazardous chemicals/ waste/ oil residues; proper absorbents or adsorbents like bentonite etc. may be used and it shall then dispose to CHWIF.

2.3.4 Waste management (EMS):

i. Decontamination facility shall maintain zero discharge. Effluent discharge at CETP shall not be allowed.

ii. Effluent generated owing to decontamination activities shall be treated in primary ETP followed by forced evaporator / MEE incinerator or other authorized means. Complete ZLD shall be maintained in all conditions.

iii. Water flow meter at the inlet of ETP and evaporator shall be installed.

iv. Decontaminated pesticides and toxic chemical drums shall not be reused. It must be cut into piece and disposed off to TSDF/CHWIF.

v. There shall be only trace residue remaining inside in the contaminated drums/ container/ barrel & empty liners and bags and in no case fully/ partially filled contaminated drums/ container/ barrel & empty liners and bags shall be accepted by the facility. The left-over or residual material in the drums/ container/ barrel & empty liners and bags shall be safely transferred into a separate container for storage and disposal at CHWIF.

vi. The vent of vacuum pump of the evaporator should be elevated at least up to 6 meter above the roof level.

vii. Membership of CHWIF/TSDF shall be obtained for the disposal of residues. If required to be discharged outside the premises.

2.3.5 Storage of Decontaminated Drums:

i. There shall not be rain water intrusion in the storage as well as decontamination area.

ii. Separate covered storage area for decontaminated containers along with closed shed, proper slope and spillage collection system channelized with ETP/MEE shall be provided.

iii. The decontaminated drums shall be labeled as below:

   “Drum Decontaminated by: M/s_______; Date: ________”
   “For industrial use only
   NOT for storing any food material”
iv. The above labeling is not applicable in case the cleaned drums are shredded and re-cycled.

2.3.6 Certification of decontaminated drums/container/barrel:

i. Drum decontamination facility shall carry out self certification of decontaminated drums/container/barrel or
ii. Third Party Certification of decontamination shall be maintained and shall be produced as and when demanded by the competent authority.

2.3.7 Safety measures:

i. Signboards showing precautionary measures to be taken, in case of normal and emergency situations should be displayed at appropriate locations.
ii. The facility shall prepare and submit Emergency response Plan to the Board.
iii. Safety audit shall be conducted at regular intervals.
iv. Storage sites should have adequate & prompt emergency response equipment systems for the hazardous waste stored on-site. This should include fire fighting arrangement based on the risk assessment, spill management, evacuation and first aid.
v. Adequate PPEs shall be provided to the workers.
vi. Regular training regarding EHS, safety and operation shall be provided to the workers.

V. General Criteria:

i. The manifest system and logbook shall be maintained.
ii. CCTV Camera as per specification given by the board with 15 days backup system shall be installed in storage and decontamination area. The record shall be maintained & submit as and when ask by Board.
iii. Proper records with regard to the industry-wise type of waste received, characteristics as well as the location of the wastes that have been stored in the facility need to be maintained.
iv. The monthly details of quantity of drums procured & cleaned and its source, mode of cleaning the drum (i.e. detergent/caustic solution), quantity of waste water generated, treated & recycled and residue generated ((i.e. left over residue, Evaporator residue & ETP Sludge) or resources conserved (specifying
the details like type and quantity of resources conserved) shall be submitted to the Board.

v. The unit shall ensure that the cover of the MS drum should also be cleaned and mutilated. The said cleaned & mutilated cover for recycling may be sold as scrap to authorized party.

vi. The quarterly monitoring of the effluent and the Ambient Air Quality parameters through NABL/ MoEF accredited laboratory as specified in the Consent shall be carried out. The report of the same shall be submitted to the Board.