CARWASH

CAR WORKSHOPS: A SERIOUS GAME APPROACH TO MANAGING WASTE CONSIDERED HAZARDOUS

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CASE STUDIES:

“Hazardous waste management plan for car repair shop”

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1. INTRODUCTION (Half a page at the most)

This section describes the activities and data of the company and a brief introduction indicating what it is the document.

The repairers of vehicles generate waste, thus hazardous as non-hazardous, in their activities, whether mechanical repairs, sheet metal and paint, electronic and electrical repairs, or of change tires; since hazardous substances are used.

The company xxxxxxxxxx, S.L., CIF B-xxxxxxxxx, and adress C / xxxxxxxxxxxxxxxx of Badajoz, presents the following management plan for hazardous waste according to their activities mechanical repairs and paint and body repairs.

Responsible for monitoring the implementation of this plan will be in charge of D. xxxxxxxxx, General manager in company D. xxxxxxxxxx, and the Workshop Supervisor, who will be responsible in due compliance.

2. OBJECTIVE (Half a page at the most)

This section briefly specifies the purpose of this document.

Minimize the generation of waste, both hazardous and non-hazardous, as well as its overall management, implementation of measures to reduce the costs of administration, facilitate and make more effective from an environmental, technological, economic and social perspective, the procedures for management; encouraging innovation processes, methods and technologies to achieve comprehensive management of waste, which is economically viable.

Regarding the recovery / recycling of waste, this does not take place, they will be collected and transported by the management company xxxxxxxxxx, S.L. number authorized xxxxxxxxxx, and number identification company B-xxxxxxxxxx.

3. BASICS CONCEPT (Max. 1 page)

This section describes the important concepts needed to know for understanding the contents to explain

Storage of hazardous waste: Action storage temporarily hazardous wastes in areas that meet the conditions laid down in current legislation to prevent their release, until the waste can be processed for use, are given a treatment, transported or finally are destroyed.

Waste: Any substance or object which owner must has intention to discard or obligation to discard. According their origin, different kinds of waste exist: household waste, industrial waste, hazardous waste.

Hazardous waste: waste having one or more of the hazardous characteristics listed below, as well as their packaging or containers:

H1- Explosive
H2- Oxidant
H3- Highly flammable or combustible
H4- Irritant
H5- Harmful
H6- Toxic
Waste producer: Any individual or company that generates waste through the development of production processes or consumption.

Integrated waste management: Combination of articulated or interrelated regulations, operational, financial, planning, administrative, social, educational activities, monitoring, supervision and evaluation for waste management set, from its generation to final disposal, to achieve environmental benefits, economic optimization of management and social acceptance, responding to the needs and circumstances of each locality or region.

4. CONTENT: POLICIES TO MINIMIZE THE GENERATION OF HAZARDOUS WASTE (Max. 3 pag.)

This section describes the content of this hazardous waste management plan for car repair shop.

Issues that are to be included here (if deemed relevant) are:

- Policies to minimize the generation of hazardous waste in production areas.
- Policies to minimize the generation of hazardous waste in storage of waste area.
- Training and Dissemination

4.1 Policies to minimize the generation of hazardous waste in production areas:

One purpose of waste management plan is to minimize the generation of hazardous waste. The policies listed below are implemented in the company:

4.1.1 Friendly products with the environment and reduction of contaminated packaging:

Use of less polluting products: any hazardous substance that is acquired must have the lowest possible toxicity, for example in the case of anti-freeze, replace the base of ethylene glycol for antifreeze based on propylene glycol, which they are considered less toxic.

Purchase in bulk: Purchase products most consumed and most used in bulk, avoiding the use of plastic containers and contaminated packaging production. It was decided to implement this system in oils.

4.1.2 Plan management Responsible in production areas (mechanical repairs and sheet metal and paint):
Responsible of plan is person in charge for supervising the warehouse and supply of materials that mechanics repair used, making sure all products are ordered and sealed without leaking or clogged. Wrapping or packaging of products will be separated by type (cardboard, plastic, paper), and stored in the workshop in different containers. The Workshop supervisor delivers products that are packaged in bulk (oils) in a container that indicate the volume. The container will remain clean and will be reused as often as needed. In the case of textiles or paper for cleaning operations, the workshop supervisor will monitor the quantity supplied to each mechanic according to the needs of work, so avoid excesses, which later become hazardous waste. He also will oversee all processes and operations performed in all workshop.

4.1.3 All activities carried out within the garage, must generate the least hazardous waste possible, for which the following precautions are taken:

a) Leaks: Every vehicle with leaks must be repaired on impermeable soil, and must be use container to collect the spill. Sepiolite will use for collecting spilling produced.

b) Change oil and filter: During engine oil changes, you should avoid spilling used oil, preferably using devices that capture oil directly. The filters are retired before being stored.

c) Washing mechanical parts: For washing contaminated metal parts, a closed recirculating solvent system is used. This reduces the amount of hazardous waste, as only when the solution has reached its saturation level, is changed. Cleaning metal parts contaminated with water and detergent is prohibited.

d) Water washing: The wash water pollutants will be collected through a sump in a decanter / grease separator and if necessary through a treatment plant. The sludge obtained will be deposited into your container and clean water will be used for cleaning the workshop.

4.1.4 Operations in paint and body repairs area:

In this area the following wastes are generated: impregnated rags and other absorbent paint and solvent, protective material that are used in areas not want to paint (paper or plastic), empty containers, paint filters. The management of this area will be monitored in the same way that the area of mechanical repairs by Workshop supervisor.

4.2 Policies to minimize the generation of hazardous waste storage area.

The warehouse or storage area will have a person responsible for monitoring it and record incoming and outgoing waste containing at least the following information: Name of waste, hazardous characteristics, an area where it was generated and date of entry into the store. This task will be assigned to D.xxxxxxxx, mechanic shop employee, and in his absence the responsibility of workshop supervisor.

Containers should be identified by stickers or labels in accordance with the legislation.

All employees will know the following information: Name of each waste, hazardous characteristics, protective equipment for handling and management each type of waste, how to act in case of accident or spill. The use of posters to remember this information about each container to store hazardous waste is recommended.

The wastes may not stay longer than 6 months stored in their containers, mechanical in charge of storage area must inform before 6 months to D.xxxxxxxx, administrative of workshop, what waste collection is necessary. Administrative will contact with the management company for collection date and will also be responsible for the custody of the documents relating to the collection and transport of the waste by company.
The floor of the storage area is perfectly waterproofed and the roof of it ensures the preservation in good waste. However it is recommended to implement rainwater collection pipes to prevent leakage of rainwater.

Used batteries are arranged on pallets plastic to prevent corrosion of the ground in case of leakage. They will never be placed close to combustible or flammable waste, thus avoiding violent chemical reactions with risk of fire.

The containers containing liquids shall not be filled more than 80% of its capacity. Solid waste is compacted whenever possible to take up less volume.

As indicated above oil filters previously drained to storage. Used oil drained will be incorporated into the container of oil used.

The store has no artificial ventilation; however natural ventilation is sufficient to prevent accumulation of flammable vapors inside.

It has been observed that in handling liquid waste is common spilled on the pavement or on the lids of containers. This bad practice should be eliminated because it generates a higher volume of hazardous waste during the cleaning operation, increases the risk of fire inside the warehouse and creates problems of order and cleanliness. It is advised that the staff be more careful in storage.

Access to the waste storage area will be restricted to employed the workshop and is signaled to indicate with "No admission for unauthorised persons” plaque and separator string of other areas.

4.3 Training and dissemination:

The information contained in this plan management of hazardous waste is generated and disseminated in a manner particular to each of the members of the different waste generating areas and provided a written copy of it.