

PROTECTING OUR HERITAGE



ENVIROFOCUS

Newsletter of the Environmental Protection Department

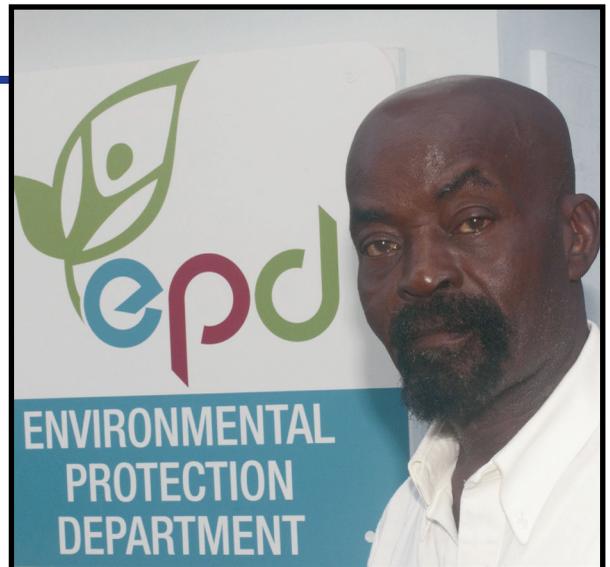
Issue 10 - March 2012

From the Director....

Since its inception in 1971, the Environmental Protection Department (EPD) has strived to safeguard the environment of Barbados with the hope that present and future generations can enjoy an environment that is safe, healthy and productive. Also from that time my predecessors recognized that the fight for our environment cannot be won with EPD as the only proponent. I am reminded of the words of renowned architect Richard Rogers,

**“The only way forward,
if we are going to improve the quality of the environment,
is to get everybody involved”.**

In keeping with the view of Mr. Rogers, I encourage each of you to play an active role in the protection of our environment. One area where your assistance is urgently needed is that of reducing marine litter. Marine litter has become a notable problem on beaches in Barbados. All types of man-made materials such as food containers, wrappers, plastic utensils, bottles and plastics bags are now commonplace on our beaches. Marine litter is unsightly and it poses a danger to marine life and human health. Litter such as used diapers and broken bottles can cause illness or injury to beach users, while marine life such as turtles can consume or be entangled in discarded rope, fishing line and other debris.



Jeffrey Headley, Director
Environmental Protection Department

How can you help fight against marine litter?

In 2011 the Department published a booklet, “Barbados Marine Litter Monitoring Guide”. With this booklet you can organize your own clean-up and in doing so preserve the beauty of our beaches and marine environment. Additionally, the guide will help you with collecting data and submitting that data to the EPD. This information is invaluable to us for it allows us to develop relevant education programmes and appropriate legislation to combat the scourge of marine litter.

Let us all do our part to ensure generations inherit an environment that is healthy, productive and enjoyable.

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CLEAN-UP 2011

**“We do not inherit the Earth from our ancestors;
we borrow it from our children.”**

An Old Native American Proverb

This simple proverb speaks volumes to the important role we all have to play in the protection of our environment and natural resources. This role has always been exemplified by the collaborative effort of Environmental Protection Department (EPD) and the community in the form of the annual beach cleanup of the Morgan Lewis Beach.

This cleanup forms an important part of the National Marine Litter Monitoring Programme, providing data which is collated and analysed by the EPD's Marine Pollution Control Section (MPCS) to bring awareness to changes or trends in marine litter. This annual activity occurred for the sixth time on Saturday the 24th September 2011. A diverse group of people inclusive of staff from the Environmental Protection Department (EPD), residents of St. Andrew, the Rotary Club of Barbados and the Rotaract Club of Cave Hill amongst others demonstrated that the spirit of volunteerism has not completely escaped from our society today.

As is the norm, participants had the option of either meeting at the EPD in Dalkeith St. Michael and being shuttled to the meeting point at Shorey Village, St. Andrew or going to Shorey Village directly. At the site of the cleanup participants received safety tips, gloves, garbage bags, water, juice and a snack. They were instructed to collect only man-made items

and to record the quantities of each type of waste collected on the data cards provided before the young and the old set out to clean 1 kilometre of beach.

The task was completed in approximately 2.5 hours including the time taken to sort the litter by type and weigh it after collection. A grand total of 885lbs of litter was collected. In descending order, the largest amount of litter items collected were bottle caps/lids, plastic beverage bottles and rope.

The Environmental Protection Department would like to thank all of those who gave of their time and energy and we look forward to even greater participation in 2012.



Volunteers sorting the waste collected

Marine Litter Competition

In celebration of the EPD's 40th Anniversary, the Department organised a poster competition with the theme "Prevent Marine Litter". The competition was open to primary school children between the ages of 8 and 11 years. Its aim was to sensitise all Barbadians about the aesthetic and environmental health effects of marine litter as well as encourage persons to adopt sound environmental practices and stop illegal disposal of waste.

The competition targeted schools, environmental clubs, faith-based groups, and local community and youth organisations. Applicants were required to design a poster which illustrated how we can protect the coastline and the marine environment from land based sources of pollution such as litter.

Presentation of prizes occurred at the Farley Hill National Park on Saturday September 24th 2011 following the EPD's annual beach cleanup of the Morgan Lewis Beach. The EPD thanks all of those who entered and congratulates the winners.

Competition Winners

- **Kodi Husbands** of Milton Lynch Primary
First (1ST) place prize - \$1000.00
- **Christina Morris** of Hillaby -Turners Hall Primary
Second (2ND) place prize - \$800.00
- **Rhesa Boxil** of St. Luke's Brighton Primary
Third (3RD) place prize - \$500.00

Air Cleaning Devices

Over the years, the Environmental Protection Department has noticed an increase in the use of air cleaning devices (ACDs). Additionally, the Department has received a number of enquiries from the public regarding these devices. In response to your requests the following article on air cleaning devices has been prepared.

What are ACDs?

ACDs are used to remove pollutants such as dust, gases, moulds and bacteria from the air. These devices are either portable units such as small table top versions or larger console units or fitted onto air-conditioning units.

Some ACDs use mechanical filtration to remove particles from the air. Air is forced through filters which allow the air to pass through but traps the pollutants in the air. Filters can be classified as low,

medium or high efficiency. Generally, two types of filter are used – flat or panel and pleated or extended filters. Flat or panel filters have the lowest efficiency and are mainly used to protect air-conditioning equipment such as fan motors from dust. Medium efficiency filters such as some pleated filters remove substances such as animal dander, hair spray, and mould but not fine particles. High Efficiency Particulate Air (HEPA) filters are a type of extended filter, which are the most efficient of all the filters mentioned. There are also higher efficiency pleated filters which can remove fine particle such auto emission particles.

Devices such as ozone generators, ionizers and UV generators are often touted as appropriate systems to improve air quality. Suppliers of ozone generators indicate that these devices remove particles, gases and micro-organisms. However, ozone generators and ionizers are not recommended for use in occupied buildings since they generate ozone gas which is an irritant. UV generators are good at killing microorganisms, but the effect is negated if poor maintenance exists.

Furthermore, ACDs are relatively ineffective at removing large particles as they settle quickly onto surfaces. Therefore, the use of such devices must be complemented by the maintenance of the air-conditioning system, frequent replacement of mechanical filters and adequate housekeeping should have significant impacts on keeping the air clean.

Pollutants retained on filter

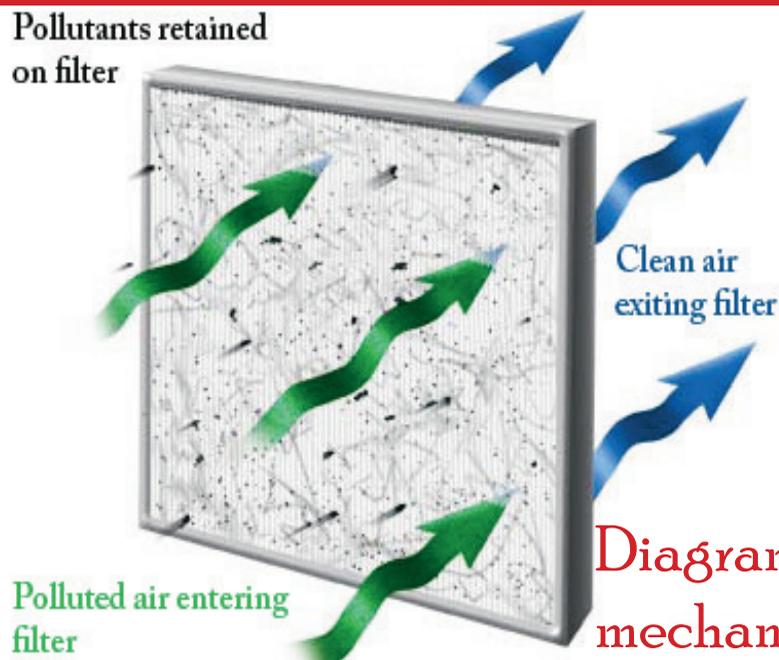


Diagram of mechanical filtration process



Pleated air filters

NITROGEN OXIDES

Barbados' consumption of fossil fuels has steadily increased due in part to an ever increasing number of vehicles present on our roads. The result of an increasing number of vehicles, combined with the combustion of fossil fuels in the industrial and manufacturing sectors, is an increase in the level of pollution generated. That is, the introduction of higher levels of pollutants such as ozone, carbon monoxide, particulate matter, sulphur dioxides and nitrogen dioxides into the environment. This article focuses on nitrogen oxides to allow for a greater understanding of the pollutant and its impact on human health and the environment.

WHAT ARE NITROGEN OXIDES?

Nitrogen oxides (NO_x) are a class of chemicals comprising nitrogen and oxygen. They are produced during combustion processes and contribute to the formation of acid rain, toxic organic nitrates, ground level ozone and smog.

HOW CAN NO_x AFFECT YOU?

- Exposure to NO_x can have both acute (short-term) and chronic (long-term) effects on human health, particularly proper functioning of the lungs. It may also increase the level of respiratory infections in children.
- NO_x may cause the formation of ground level ozone which is an irritant to the eyes, throat and respiratory system.
- NO_x can exacerbate allergic response and impact on

the health of some sensitive individuals.

WHAT IS BEING DONE?

There have been several technological advances geared to reduce the levels of NO_x released into the environment. These include:

- using catalytic reactions in vehicles and industrial processes to prevent the formation of NO_x.
- reducing the consumption of fossil fuels through the use of alternative sources of fuels and carpooling
- redesigning engines to allow lower combustion temperatures which reduce NO_x emissions.

These technologies have achieved success in reducing emissions from the various sources when correctly implemented and maintained but do not totally eliminate NO_x emissions.

Did you Know?

Nitrogen oxides are one of six pollutants that regulatory agencies generally use to assess ambient air quality. These substances, known as criteria pollutants, can affect your health, the environment and in severe cases your property.

The criteria pollutants are:

- Ozone
- Particulate Matter
- Carbon Monoxide
- Nitrogen Oxides
- Sulfur Dioxide
- Lead

VMFs

After consultations with stakeholders in 2011, the EPD published its Best Management Practices for Vehicle Maintenance Facilities in Barbados. The purpose of the booklet is to help owners and operators of Vehicular Maintenance Facilities (VMFs) better understand how they can implement Best Management Practices to reduce their impact on the environment and human health.

Copies of the booklet are available from the office of the Environmental Protection Department.

Disposing of Hazardous Materials

The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal aims to protect human health and the environment against the adverse effects resulting from the generation, transboundary movements and management of hazardous and other wastes. Additionally, it strives to ensure that hazardous and other wastes are managed and disposed in an environmentally sound manner.

As one of the countries Party to the Basel Convention, Barbados is required to:

1. Reduce transboundary movements of hazardous wastes and other wastes to a minimum consistent with their environmentally sound management;
2. Treat and dispose of hazardous wastes and other wastes as close as possible to their source of generation in an environmentally sound manner;
3. Minimize the generation of hazardous

wastes and other wastes (in terms both of quantity and potential hazard).

Since Barbados does not have the technical capability to treat and dispose of hazardous wastes locally; therefore, any hazardous wastes generated must be shipped off island for disposal in an environmentally sound manner.

Outlined below is the process that waste generators must follow in order to ship waste overseas for disposal. Waste generators must:

1. Determine the name, composition and quantity of the waste to be disposed.
2. Identify a facility which is capable of disposing of the waste in an environmentally sound manner.
3. Organize the appropriate packaging of the waste to reduce the likelihood of accidental release of the waste during the shipment process.
4. Submit to the Director of the EPD for review, documentation about the shipment including the source of the waste, the quantity, the name of the waste, physical state and composition, methods of shipment, name of the disposer.
5. Obtain written permission from the Department before shipping the waste.
6. Proceed to ship the waste.

Minimizing Chemical Waste

In order to reduce the the negative impacts from chemicals, it is important that they be properly managed at all stages of their lifecycle. These stages are:

- manufacture
- transport
- storage
- use
- disposal



Containers used to package waste for disposal

GHS LABELS

In 2011 the Environmental Protection Department, in partnership with the United Nations Institute for Training and Research (UNITAR), began a project to chart a course for implementing the GHS in Barbados. The project was officially launched in April of 2011 at an opening ceremony attended by representatives from government agencies, industry, academia, the civic society and UNITAR.

Implementation of the GHS aims to improve the management of chemicals throughout the country. GHS is an acronym for the Globally Harmonized System of Classification and Labeling of Chemicals. It is a comprehensive classification system comprising criteria for the ranking the physical, environmental and health hazards of chemicals. After measuring the extent to which chemicals are hazardous, the GHS uses labels and Safety Data Sheets to communicate these hazards.

Hazard communication aims to inform users about the dangers posed by chemicals, describe correct procedures for chemical use/handling and ensure safety.

When implemented in Barbados, all GHS labels will have the following information:

- Symbols / Hazard Pictograms
- Signal Word
- Hazard Statement
- Precautionary Statements
- Product Identifier
- Supplier Identification
- Supplemental Information

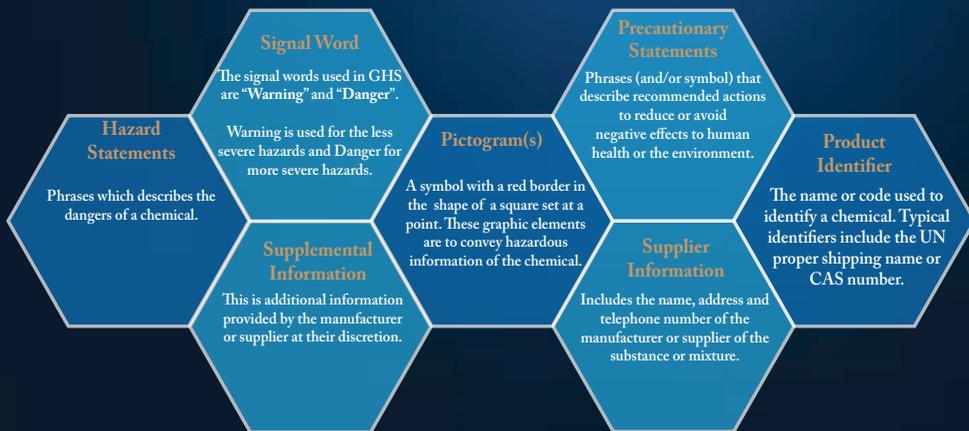
The figure to the right explains the meanings of each of these terms with the aid of a fictitious example of a GHS label.

7 MAIN COMPONENTS OF A GHS LABEL

Example of a GHS Label

The diagram illustrates the components of a GHS label for 'PHILOXIN'. The label is divided into several sections:

- Product Identifier:** PHILOXIN
- Signal Word:** Danger
- Pictogram(s):** A diamond-shaped pictogram showing a person with a skull and crossbones, a flame, and a hand being burned.
- Hazard Statements:**
 - Flammable liquid and vapour.
 - Toxic if swallowed.
 - Toxic in contact with skin.
 - Fatal if inhaled.
 - Causes severe skin burns and eye damage.
 - May cause allergy or asthma symptoms or breathing difficulties if inhaled.
 - May cause an allergic skin reaction.
 - Suspected of causing genetic defects.
 - May cause cancer.
 - Suspected of damaging fertility or the unborn child.
 - Causes damage to respiratory organs, liver, kidney.
 - Causes damage to respiratory organs, kidney, heart, CNS through prolonged or repeated exposure.
- Precautionary Statements:**
 - Do not handle until all safety precautions have been read and understood.
 - Wear protective gloves/protective clothing/eye protection/face protection.
 - Keep away from heat/sparks/open flames/hot surfaces.
 - No smoking.
 - Take precautionary measures against static discharge.
 - Do not breathe dust/fume/gas/mist/vapours/spray.
 - Use only outdoors or in a well-ventilated area.
- Supplemental Information:**
 - Container remains hazardous when empty. Continue to observe all precautions.
 - For further information on this product, refer to Manufacturer's Safety Data Sheet
- Supplier Information:**
 - Environmental Preservation Agency, 1-1, GHS Avenue, A Safer Place to Work, Barbados
 - Contact Tel: (246) 410 0000



ENVIROQUOTES

We borrow the Earth from our children;
so let us leave something to repay them.

Anonymous

The only way forward, if we are going to improve
the quality of the environment, is to get everybody
involved.

Richard Rogers



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