

Environmental Report 2011



Government
Laboratory





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Foreword

Entering 2011, there has already been 12 years since the Government Laboratory had the environmental management system in place. The progress so far was good and the Laboratory strived for continuous improvement in the environmental performance always. In this environmental report, we would like to present the Laboratory's environmental performance in the year 2011 and reviewed the issues implemented according to our environmental management system.

Environmental protection has long been a major policy area of the Hong Kong Special Administrative Region Government. As part of the Government, the Laboratory is obligated to help implement the environmental policy agenda laid out by the Chief Executive. On the other hand, however, the Laboratory appreciated that it could also make contribution in enhancing the living environment for the Hong Kong people.

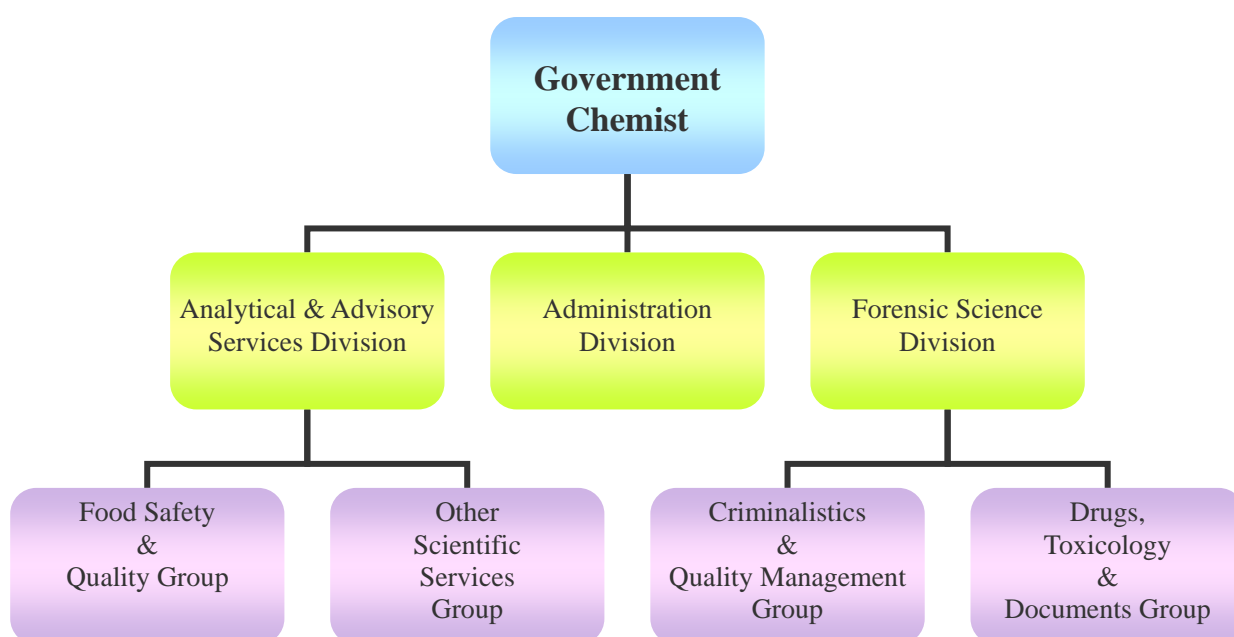
As in previous years, the Laboratory will spare no efforts in pursuing a high standard of environmental performance and minimizing the impact of its operation on the environment. Also, the laboratory is committed to continual saving of resources and enhancing the awareness on environmental protection of the staff.

With the concerted effort made by the public and the government, I am confident that we could achieve a better living environment in Hong Kong.

Dr. Chau-ming Lau, JP
Government Chemist
May 2012

Our Laboratory

The Government Laboratory was established to provide analytical and advisory services to support departments and bureaux of the HKSAR Government in law enforcement, public health and safety, environmental protection, government revenue, consumers' interests and implementation of government policies. Similar services are provided for other statutory bodies. The Government Laboratory is headed by the Government Chemist and the organization of the Laboratory is shown as below:



Establishment and Office Location

As at March 2012, the Government Laboratory had an establishment of 463, in which there were 6 directorate-grade, 431 non-directorate-grade and 26 non-civil service contract staff members. The actual expenditure for 2011-2012 was \$347 million. Including the headquarters located at Ho Man Tin Government Offices, the Laboratory has testing facilities located at six different government buildings:



- 1) Homantin Government Offices, Chung Hau Street, Kowloon;
- 2) King's Park Meteorological Station, King's Park Road, Kowloon;
- 3) Public Works Central Laboratory Building, Cheung Yip Street, Kowloon Bay.
- 4) Lai Chi Kok Government Offices, Lai Wan Road, Lai Chi Kok;
- 5) The Public Health Laboratory Centre, Nam Cheong Street, Shek Kip Mei;
- 6) Food Safety Laboratory, Victoria Road, Pokfulam.

Environmental Policy

The four principles of our environmental policies are:

Compliance

We comply with all applicable environmental laws and regulations. To ensure that the waste generated during its operation is in compliance with regulatory requirements, the Laboratory has implemented a programme to monitor the level of pollutants in the air emitted and effluent discharged from the Laboratory.

Prevention

We implement management systems and procedures designed to prevent activities and / or conditions that pose a threat to the environment. There are established procedures for managing chemical waste disposal and handling of environmental emergencies.

Continual Improvement

We continually seek opportunities to improve our adherence to these principles. All the Sections in the Laboratory have been encouraged to set up environmental objectives and targets relevant to their operations. Sustained efforts have been made to reduce the consumption of chemicals and / or the release of harmful substances to the environment.

Communication

We communicate in the Laboratory's annual report our commitment to environmental quality to our staff and clients. Training in safety and environmental operation were given to new recruits. In addition, continuous training on handling environmental emergencies was provided regularly.

Management System

Staff Responsibility

The Laboratory's Environment, Safety and Security Committee (LESSC) is responsible for deciding the environmental policy, overseeing its implementation and monitoring environmental performance. The Committee is under the direction of a directorate-grade officer and meets quarterly. It comprises officers appointed by the Government Chemist and staff representatives.

Section Heads and the Departmental Secretary are assigned to be the Laboratory's Environment, Safety and Security Inspectors, and are responsible for ensuring the compliance with the established environmental policy, guidelines and measures on environmental matters by all levels of staff.

An Environmental Management System Working Group (EMSWG) was established to look after environmental matters and oversee the implementation of international environmental management standard ISO 14001 in the Environmental Chemistry A & B, Residues and Trace Elements Sections. The EMSWG is under the leadership of the Environmental Manager and comprises representatives from the four Sections and the Quality Management Section.

Education and Training

Training in safety and environmental operation were given to new recruits, which included the general laboratory safety practices, handling of chemicals and equipment, and procedures for handling chemical spills. In addition, continuous training on handling environmental emergencies like handling of chemical spills to minimize contamination to the environment was provided regularly.

Regular Environmental Audits

The annual internal audit was conducted in January 2012 for the Environmental Chemistry A & B Sections, the Trace Elements Section and the Residues Section. In addition, the Hong Kong Quality Assurance Agency (HKQAA) conducted external audits for these four Sections in March 2012. These audits served to verify that the environmental policy and relevant operating procedures are implemented effectively.

Environmental Management System

Currently, four Sections have obtained the ISO 14001 certification. The scope will be extended if resources allows.

Initiatives on Environmental Improvement

Green Procurement

Preferential consideration is given to products manufactured by certified ISO 14001 manufacturers and suppliers if the offers of the intended material or service from all suppliers are the same. Contractors are requested to minimize the use of packing materials. If the goods offered are to be packed in carton boxes, the carton box packaging must be made from 100% recovered material.

Education and Training

Up to date, 74 staff members were trained to be internal environmental auditors. In 2011, 29 emergency drills relating to the handling of environmental emergencies were organized covering all Sections of the Laboratory.

Achievements and progress

The Laboratory has set up objectives, targets and programmes for environmental protection. The environmental programmes that were implemented and in progress in the year 2011-2012 are shown below:

Reduce the use of chemicals

The procedure for the testing of organophosphorus and N-methyl carbamate pesticides in fruit and vegetable samples was modified to achieve the target of reducing the use of dichloromethane by 30% compared with the original method. Dichloromethane is a kind of chlorinated organic solvent which may have impact on the environment. The programme has been completed.

Minimize generation of plastic waste

To reduce the generation of plastic waste in the procedure for the determination of Nitroimidazoles and Fluoro(quinolones) in muscle and offal samples. Currently, the method involves the use of disposable plastic solid phase extraction cartridges which was replaced by an online SPE procedure. The programme has been completed.

Reduce acid consumption

The use of microwave - assisted acid digestion procedure has been extended to cover the determination of trace elements in biota samples. This resulted in further reduction in the consumption of nitric acid and hydrochloric acid. Besides, the amount of acid waste generated was also reduced accordingly. The programme has been completed.

Reduce consumption of electricity

To explore the possibility of modifying the extraction method for analysis of perfluorinated compounds in biota samples so as to reduce the consumption of electricity in sample preparation. The programme is in progress.

Resources consumption

The Laboratory Environment, Safety and Security Committee (LESSC) of the Laboratory prepared environmental guidelines and frequently reminded staff members to observe the green housekeeping measures stipulated in the guidelines. In this connection, the consumption of electricity, paper and envelope were monitored annually as environmental performance indicators. Figures for year 2010 and 2011 are given below for reference. As noticed, both the paper and envelope consumption have dropped in 2011. The electricity consumption has also dropped which reflected the effectiveness of the installation of automatic sensors controlling the lighting system at the area with low activities.

Resource	2010	2011
Electricity (kWh)	12447	12334
Paper (kg)	3102	2718
Envelope (unit)	6225	6156

Chemical waste

Under the ISO 14001 Environmental Management System, the Laboratory keeps monitoring the levels of pollutants in the effluent discharge and air emission to ensure the compliance with relevant regulatory limits. Chemical wastes generated in the Laboratory were collected for treatment by an authorized agent. The amount of chemical waste generated are summarized below for reference.

Chemical Waste Generation	2010	2011
Spent acids (L)	3298	5674
Spent Alkali (L)	52	69
Spent non-halogenated organic solvent (L)	3168	2649
Spent halogenated organic solvent (L)	1408	1686

The increase in the generation of acids, alkali and halogenated organic solvent in 2011 was mainly due to the high demand in environmental samples analysis from client departments. The decrease of 16% in non-halogenated organic solvent was attributed to the modifications made in procedures for trace organics analysis.



Way Forward

For continuous improvement in its environmental performance and to ensure that the implementation of established environmental guidelines and procedures, the Laboratory constantly reviews its operation and undertake necessary actions. Further, Sections concerned continue to initiate environment objectives and programmes for activities under their purview.

Regarding measures to conserve energy and save consumables, the Laboratory will keep liaison with the Electrical & Mechanical Services Department (EMSD) and the Architectural Services Department (ASD) to seek new initiatives and formulate effective energy management programmes. For instance, automatic sensors controlling the lighting system at the area with low activities had been installed in some laboratory areas and this scheme will be extended to cover other laboratory areas in the coming year as the results were promising.

The consumption of paper is expected to drop as if printed copy of analytical reports to client departments could be substituted by electronic copy in the near future. For daily operation, hard copies of quality document involved in the laboratory operation and instrument maintenance has been replaced electronically as far as practicable.

During the year, the Laboratory succeeded to minimize the consumption of chemicals and emission of harmful substance through modification of operation procedures or upgrading the equipments. As pledged, the Laboratory will make every endeavour to achieve a better living environment in Hong Kong.



Feedback and Enquiries

Please direct any feedback and comments on this Report to the Departmental Secretary of Government Laboratory.

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