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***Environmental Audits for Sustainable Tourism***

**Environmental Management Audit  
Negril Gardens Hotel  
Negril, Jamaica, W.I.**

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**Preliminary Report  
EAST Report No 97-192**

**September 1997**

Prepared for  
EAST Project  
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U S A

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## I Background

The Environmental Audits for Sustainable Tourism (EAST) Project is an activity funded by the U S Agency for International Development (USAID) that is designed to assist the tourism and hospitality industry implement effective environmental management systems (EMS)

The specific objectives of this project are (1) to develop greater awareness and understanding of the benefits of environmental management systems and audits among hoteliers, restaurateurs, allied tourism businesses, as well as in the manufacturing industry, (2) to train Jamaican consultants on EMS auditing techniques, (3) to assist a select, representative number of tourism establishments in carrying out environmental audits, and (4) to help finance, on a cost-sharing basis, specific audit recommendations in the participating establishments to demonstrate the financial benefit of the systematic application of environmentally friendly practices and, thereby, encourage others in the tourism industry to do likewise EAST is being implemented by Hagler Bailly Services (USA) under the direction of USAID/Jamaica and the Jamaica Hotel and Tourist Association

## 2. Introduction

The audit of the Negril Gardens Hotel was conducted by an interdisciplinary team in August 1997 The team members included Hugh Cresser, EAST Project Coordinator, Peter Illig, Team Leader and EMS Specialist, Hagler Bailly Services (USA), Patricia Gonzalez, Environmental Engineer, Hagler Bailly Services (USA), Kimberly Moffitt, Hotel Operations Specialist, HVS International (USA), Adam Abelson, Hotel Operations Auditor, HVS International (USA), Lloyd Marsh, Senior Energy Engineer, Metrocad (Jamaica), Dinsdale Williams, Energy Engineer, Metrocad (Jamaica)

The EMS audit consisted of a detailed analysis of all departments and key service areas designed to identify the environmental aspects and impacts of the property's activities, and to formulate recommendations on how to improve the property's environmental performance and its environmental management system (EMS) This preliminary report contains a summary of the audit team's findings and recommendations, it will be followed by a comprehensive report that will provide detailed descriptions of the recommendations and specific guidance on how the property can upgrade its EMS

### 3. ISO 14001 EMS Gap Analysis

The audit team examined the property's policies, practices, procedures and management structure in order to determine how the existing environmental management process could be improved and brought closer to the requirement of ISO 14001. The ISO 14001 standard, which is used as the model for the property's EMS evaluation, is an internationally recognized standard that describes the basic elements of an effective and comprehensive EMS. This standard does not dictate specific environmental performance requirements, but rather describes the basic building blocks of a management system that can help a property establish and achieve its own environmental performance objectives. ISO 14001 is applicable to a broad range of industrial and service sectors, including the hospitality industry. The basic concept behind the ISO 14001 standard is that better environmental management leads to better environmental performance.

The Jamaica Bureau of Standards has formally adopted ISO 14001, and Jamaica's Natural Resources Conservation Authority recognizes ISO 14001 as a demonstration of an organization's commitment to meeting applicable Jamaican and international environmental laws and regulations.

The EMS gap analysis, summarized in Table 1, is designed to identify the discrepancies between the property's current practices and the ideal EMS model given by ISO 14001. The first two columns of this table present the main elements of the ISO 14001 EMS, the third column contains a rating which indicates how the property's current practices compare with the requirements of each element of the ISO 14001 EMS (the three ratings used in this evaluation are ● fully implemented, ◐ partially implemented, and ○ non-existent), and finally, the last column contains the audit finding upon which the ISO 14001 compliance rating is based.

**TABLE 1 SUMMARY OF THE EMS GAP ANALYSIS FOR THE NEGRIL GARDENS HOTEL**

ISO 14001 EMS element	Description of the EMS element and requirements	Rating	Finding
<b>Environmental policy</b>	The property must develop an environmental policy statement which describes its intentions and principles towards the environment. This policy sets the goal for the property's environmental responsibility and performance, and the benchmark against which the achievements of the property's EMS will be judged. The environmental policy must be documented, communicated to all employees, available to the public and appropriate to the scale and nature of the property's activities.	○	Currently, the NG hotel does not have a formal and documented environmental policy.
<b>Planning - Environmental aspects and impacts</b>	The property must establish a procedure to identify the environmental aspects of its activities and determine which of its activities have a significant impact on the environment. The identified significant environmental impacts must be taken into consideration in setting the property's environmental objectives.	◐	NG does not have an established procedure to identify and evaluate the environmental impacts of its activities. However, management and employees are aware of many of the environmental impacts of the hotel's activities.
<b>Planning - Legal and other requirements</b>	The property must establish a procedure to identify and access the legal and regulatory requirements that are applicable to the environmental aspects of its activities.	○	NG does not have an established procedure to identify and access the applicable environmental laws and regulations.
<b>Planning - Objectives and targets</b>	The property must establish and document its environmental objectives and targets. Whenever possible, these targets must be quantified, specific and measurable.	◐	NG does not establish formal environmental objectives and targets. However, several environmental objectives and targets are informally set by the hotel's top management (e.g., water conservation objectives, installation of low flow shower heads, purchase of recycled paper products for public bathrooms, use of paper straws).

Key ● The EMS element is in place and meets ISO requirements, ◐ EMS element is in place but doesn't meet ISO requirements, ○ EMS element does not exist

ISO 14001 EMS element	Description of the EMS element and requirements	Rating	Finding
<b>Planning - Environmental management program</b>	The property must establish a program and designate responsibility for achieving its environmental objectives and targets. It must also provide the resources and define the time-frame for achieving the objectives and targets.	○	This property does not have a formal and documented program for achieving its environmental objectives and targets.
<b>Implementation and operation - Structure and responsibility</b>	The property's top management must give selected staff members the authority and responsibility for implementing the EMS. Top management must also provide the necessary resources for the implementation of the EMS.	○	Since NG does not have a formal EMS, it cannot assign the responsibility for its implementation.
<b>Implementation and operation - Training, awareness and competence</b>	The property must identify training needs and provide appropriate training to all personnel whose work may create a significant impact on the environment.	◐	Although management does provide training to its employees, little of this training addresses the environmental impacts of the hotel's operations.
<b>Implementation and operation - Communications</b>	The property must establish a procedure for the internal communication of issues related to its environmental impacts and EMS. It must also establish a procedure for receiving, processing, documenting and responding to relevant requests from external parties on the property's environmental impacts and EMS.	○	NG does not have a formal procedure for handling the internal or external communications related to its environmental impacts and EMS.
<b>Implementation and operation - EMS Documentation</b>	The property must develop a document which describes the core elements of the EMS.	○	Given the lack of an established EMS, NG does not yet possess such a document.
<b>Implementation and operation - Document control</b>	The property must develop a mechanism to control, maintain, review and store all documents related to the EMS.	◐	NG does not currently have any EMS documentation. It could however extend its current document control mechanisms to include any future EMS documentation.

Key ● The EMS element is in place and meets ISO requirements, ◐ EMS element is in place but doesn't meet ISO requirements, ○ EMS element does not exist

ISO 14001 EMS element	Description of the EMS element and requirements	Rating	Finding
<b>Implementation and operation - Operational control</b>	The property must develop written procedures for all activities which have or could have a significant impact on the environment	◐	Although NG is developing employee manuals for many of its departments, there is no formal process for developing written procedures for environmentally sensitive activities
<b>Implementation and operation - Emergency preparedness and response</b>	The property must be ready to respond to abnormal operating conditions, accidents and emergency situations which may negatively affect the environment It must establish a procedure to identify and respond to possible environmental incidents and emergencies	○	No formal procedure is in place at NG to identify and respond to possible environmental incidents
<b>Checking and corrective action - Monitoring and measurement</b>	The property must establish a procedure to regularly monitor its environmental performance and measure the main characteristics of its environmentally sensitive operations	○	NG keeps track of all of its bills, but it does not systematically monitor its use of electricity, LPG, water and key chemical products At the end of each month, the hotel should calculate how much electricity, LPG, water and chemicals it consumed per guest night This data will help the hotel define its normal consumption patterns, identify any unusual shifts in its consumption pattern, and track the results of its water/energy conservation and other environmental efforts
<b>Checking and corrective action - Nonconformance and corrective action</b>	The property must be prepared to correct and to prevent the recurrence of problems associated with its EMS In order to do so, it must establish a procedure to define responsibility and authority for handling and investigating episodes of nonconformance with the property's EMS, and for completing corrective and preventive action	○	Since NG does not currently have a EMS, it has no mechanism to deal with nonconformance issues

Key ● The EMS element is in place and meets ISO requirements, ◐ EMS element is in place but doesn't meet ISO requirements, ○ EMS element does not exist

ISO 14001 EMS element	Description of the EMS element and requirements	Rating	Finding
<b>Checking and corrective action - Records</b>	The property must establish procedures for the identification, maintenance and disposition of all relevant environmental records. These items include training activity records and the results of EMS audits and reviews.	●	Currently NG does not have a formal process for handling its environmental records. This property could however extend its current record keeping mechanisms to include any environmental records generated by its future EMS.
<b>Checking and corrective action - Environmental management system audit</b>	The property should periodically audit its EMS to insure that it conforms with the ISO standard and that it is properly implemented and maintained. The results of these EMS audits should be used as a source of information for the management review process.	○	NG does not have a formal EMS and does not therefore conduct any EMS audits.
<b>Management review</b>	Top management must periodically review the EMS to ensure its continuing suitability, adequacy and effectiveness. The management review process must address the possible need for changes to the property's environmental policy, objectives and other elements of the EMS.	○	NG does not have a formal EMS and does not therefore conduct any management reviews.

Key ● The EMS element is in place and meets ISO requirements, ● EMS element is in place but doesn't meet ISO requirements, ○ EMS element does not exist

## 4 Environmental Aspects and Impacts

One of the principal requirements of the ISO 14001 EMS is that a property must examine its operations to identify the environmental aspects of its activities -- an environmental aspect is an element of an activity which interacts, in a beneficial or detrimental manner, with the environment. It must be noted that this identification process must focus only on the environmental aspects which the property can control or influence; the property is obviously not expected to tackle issues that are beyond its grasp. Once the environmental aspects have been identified, the property must then determine the impact of these activities on the environment -- an impact is a change to the environment which results from a specific activity. While environmental aspects are interactions with the environment, impacts are the changes in the environment resulting from that interaction, the relationship between environmental aspects and impacts is, therefore, one of cause and effect. The identification of environmental aspects and impacts provides the property with a sense of its current environmental performance and enables the property to establish the environmental targets and objectives of its future EMS activities.

During the evaluation of the property's activities, the audit team identified the property's primary environmental aspects and impacts. The audit team also determined that most of the property's activities could be classified in at least one of the following environmental aspect categories:

- water use,
- energy use,
- solid waste generation,
- generation of water pollutants,
- use of hazardous products,
- generation of air emissions, and
- damage to the eco-system

A description of the environmental impacts and the types of activities associated with Negril Garden's principal environmental aspects is given in Table 2. This table also includes a list of the possible objectives for this property's future EMS efforts.

<b>Type of environ aspect of the hotel's activities</b>	<b>Type of activities which have these environmental aspects</b>	<b>Environmental impact of the activities</b>	<b>Objective of the property's EMS</b>
<b>WATER USE</b>	<ul style="list-style-type: none"> <li>- Use of guest room and public bathrooms</li> <li>- Laundry room and operations</li> <li>- Housekeeping and cleaning operations</li> <li>- Kitchen and bar operations</li> <li>- Garden upkeep</li> </ul>	<ul style="list-style-type: none"> <li>- Inefficient use of a valuable resource</li> <li>- Excessive consumption reduces the amount of clean water available to the Negril community</li> </ul>	- Reduce water consumption

**TABLE 2 SUMMARY OF NEGRIL GARDENS' ENVIRONMENTAL ASPECTS, IMPACTS AND EMS OBJECTIVES**

<b>ENERGY USE</b>	<ul style="list-style-type: none"> <li>- Operation of a/c units, water heaters, washing machines, dryers and pool pumps</li> <li>- Use of hot water and lighting</li> </ul>	<ul style="list-style-type: none"> <li>- Inefficient use of valuable and non-renewable resources</li> <li>- Generates air pollution (mainly at the power plant), greenhouse gases, acid rain</li> </ul>	<ul style="list-style-type: none"> <li>- Reduce energy consumption</li> </ul>
<b>SOLID WASTE GENERATION</b>	<ul style="list-style-type: none"> <li>- Office operations (paperwork)</li> <li>- Food purchasing, preparation and serving</li> <li>- Bar operations</li> <li>- Maintenance operations</li> <li>- Garden and beach upkeep</li> </ul>	<ul style="list-style-type: none"> <li>- Disposal of solid wastes in inadequate municipal dumps</li> <li>- Contamination of groundwater and surface water</li> <li>- Loss of raw materials</li> </ul>	<ul style="list-style-type: none"> <li>- Reduce the amount of solid waste generated by the property</li> </ul>
<b>GENERATION OF WATER POLLUTANTS</b>	<ul style="list-style-type: none"> <li>- Laundry room operations (e.g., use of phosphate based detergents)</li> <li>- General housekeeping and cleaning operations (excessive use of chemical cleaning and disinfecting products)</li> <li>- Maintenance operations (improper disposal of used oil and spent solvents)</li> <li>- Food preparation (disposal of grease and oil in the sink)</li> </ul>	<ul style="list-style-type: none"> <li>- Increases pollutant load discharged to surface and groundwater</li> <li>- Reduces the effectiveness of septic tanks and wastewater treatment systems</li> </ul>	<ul style="list-style-type: none"> <li>- Reduce the pollutant load contained in the hotel's effluent</li> </ul>
<b>USE OF HAZARDOUS PRODUCTS</b>	<ul style="list-style-type: none"> <li>- Laundry room operations (use of bleach, and acid or caustic cleaners)</li> <li>- General housekeeping and cleaning operations (use of bleach, toxic cleaning chemicals, insecticides)</li> <li>- Maintenance operations (use of lead paint, drain clearing chemicals)</li> <li>- Grounds keeping (use of pesticides and insecticides)</li> </ul>	<ul style="list-style-type: none"> <li>- Exposes guests and employees to hazardous products</li> </ul>	<ul style="list-style-type: none"> <li>- Reduce the number and amount of hazardous products used on the property</li> </ul>
<b>GENERATION OF AIR EMISSIONS</b>	<ul style="list-style-type: none"> <li>- Maintenance operations (e.g., release of CFC from air-conditioning units, use of solvents)</li> <li>- General housekeeping and cleaning operations (use of CFC containing aerosols)</li> <li>- Grounds keeping (insecticide fogging)</li> </ul>	<ul style="list-style-type: none"> <li>- Release of CFCs to the atmosphere</li> <li>- Exposes guests and employees to hazardous air pollutants</li> </ul>	<ul style="list-style-type: none"> <li>- Phase out CFC refrigerants from the property</li> <li>- Reduce the use of solvents, insecticides, pesticides and other air pollutants</li> </ul>
<b>DAMAGE TO THE ECOSYSTEM</b>	<ul style="list-style-type: none"> <li>- Discharge of untreated gray water in wetlands</li> <li>- Improper disposal of the property's solid waste or septic tank sludge</li> <li>- Excessive use of fertilizer, insecticides and pesticides in the gardens</li> </ul>	<ul style="list-style-type: none"> <li>- Damages the environment and ecosystem surrounding the property</li> </ul>	<ul style="list-style-type: none"> <li>- Reduce the damage caused by the property's operations on the ecosystem</li> </ul>

## 5. Environmental Aspects of the Property's Activities and Recommendations

Table 3 provides a summary of the recommendations proposed by the audit team to help the property address many of its activities that have a negative impact on the environment. It is important to note, however, that this list only contains the recommendations identified during the course of a three day audit, these recommendations should therefore be viewed as only the first phase of the property's continuous EMS process.

The recommended actions listed in Table 3 are classified by department or area of activity (e.g., maintenance department, housekeeping department, guest rooms, gift shop) and by the environmental aspect category addressed by each recommendation (e.g., water use, energy use, solid waste generation).

An evaluation of the environmental impact, the implementation cost and the cost effectiveness of each recommended action is provided in the last three columns of Table 3. The ratings used to qualify the recommendations are defined as follows:

Criteria	Rating	Description of rating
Environmental benefit of the action	High (H)	Significant reduction of the property's impact on the environment (e.g., a large reduction in the toxicity or volume of generated waste, a significant improvement in the use of water, energy, chemicals or other products)
	Moderate (M)	Moderate reduction of the property's impact on the environment
	Low (L)	Low or insignificant reduction of the property's impact on the environment
Cost to implement the action	High	Significant investment of labor or capital
	Moderate	Moderate investment of labor or capital
	Low	No or negligible investment of labor or capital
Cost effectiveness of the action	High	Immediate payback (payback < 1 month)
	Moderate	Payback < 1 year
	Low	Payback > 1 year

The property's management and staff can use the ratings to select the recommendations that should be implemented first and to identify the recommendations that yield the greatest benefits -- that is, High environmental benefit, Low implementation cost and High cost effectiveness. The high priority actions listed in Table 3 are highlighted with the "⊗" symbol. These actions are those which either have an immediate payback (cost effectiveness = H) or have a high environmental benefit combined with a moderate payback (cost effectiveness = M).

**TABLE 3 ENVIRONMENTAL ASPECTS OF NEGRIL GARDENS' ACTIVITIES AND RECOMMENDED ACTIONS**

Env aspect of the property's activity	Recommended action	Environ impact of the action	Cost to implement the action	Action's cost effectiveness
<b>MAINTENANCE DEPARTMENT</b>		<b>H = high M = moderate L = low</b>		
General issues	<p>⊕ Negril Gardens should implement a formal preventive maintenance program (PMP) that will cover the property's equipment. The equipment should be routinely checked, and the maintenance schedules and results should be tracked in a PMP log book. A PMP program ensures that equipment is running efficiently and safely, it also extends the useful life of the equipment.</p>	H	M	H
Water use	<p>Water consumption at Negril Gardens (191 gallons per guest night) is greater than the industry average for a water efficient property (154 gallons per guest night). Since the cost of the water used by Negril Gardens is extremely high (\$79 J\$/1,000 gallons -- this value includes the fee paid to NWC and to the cesspool pumping service), it is in this property's best interest to engage in an aggressive water conservation program.</p>	H	See specific recommendations	See specific recommendations
	<p>⊕ Promptly fix all leaks in faucets, toilets, pipes and other fixtures. Several of the guest room and public bathrooms inspected by the audit team had leaky toilets -- such leaks can waste thousands of gallons per year. Maintenance staff should replace defective flapper balls and check toilet tanks for scale deposits that might obstruct the flapper.</p>	M	L	H
	<p>Continue the installation of low flow shower heads. Since the low flow shower heads currently installed by Negril Gardens use on average 1.5 gpm as compared to 5 gpm for the standard shower heads, the installation of these devices is a very cost effective water conservation measure. Negril Gardens started installing new low flow shower heads a few weeks before the visit of the audit team.</p>	M	M	M
	<p>⊕ Reduce water consumption in guest rooms, public restrooms, kitchen and bar and by installing flow aerators on all faucets that are not yet equipped with such water conservation devices. The use of flow aerators is particularly important in places such as the kitchen where taps are left running for long periods of time.</p>	M	L	H
	<p>Consider installing "hand free" (spring loaded, infrared or foot valve) faucets in locations where the taps are likely to be left running when not in use (e.g., hand washing station in the kitchen, public restrooms).</p>	M	M	M
	<p>In the future, consider replacing damaged or old toilets (4 to 5 gallon tanks) with water efficient toilets which use approximately 2 gallons per flush.</p>	M	M	L
	<p>⊕ Install toilet dams or pop flush devices in the water tanks of all non water efficient toilets (4 to 5 gallon tanks). The use of these devices can reduce by approximately 1/2 gallon the amount of water used for each flush.</p>	M	L	H

Env aspect of the property's activity	Recommended action	Environ impact of the action	Cost to implement the action	Action's cost effectiveness
	<p>☉ Given the high cost of NWC water (200 J\$/1,000 gallons), Negril Gardens should seriously consider collecting and reusing the rainwater that falls on the rooftops of its cottages and buildings. The principal uses for the collected rainwater include grounds irrigation and laundry -- rainwater is naturally soft and would therefore eliminate the need for the water softening chemicals currently used in the laundry, or the need to purchase the water softening system that is currently being considered.</p>	H	M / H	M
	<p>Monitor water consumption and calculate monthly gallons/room night or gallons/guest night figures. Use this information to spot potential problems or leaks in the water supply lines and evaluate the progress of the water conservation efforts.</p> <p>The audit team discovered that the daily water use data collected by the maintenance department was not accurate. The consumption figures of the three meters were totaled without observing the fact that the garden side meters measure m<sup>3</sup> and the beach side meter measures 1,000 of gallons. The audit team prepared and gave the maintenance department new data collection forms that should eliminate possible confusion in future data collection efforts.</p>	M	L	Not applicable
Energy use Electricity and lighting	<p>The property's overall voltage supply is low. Negril Gardens should consider upgrading its voltage to 415 V, 3ph to compensate for low voltage.</p>	M	Not yet determined	Not yet determined
	<p>Negril Gardens's system loading is not balanced. This property should consider redistributing its loads to reduce the imbalance and lower distribution losses.</p>	M	Not yet determined	Not yet determined
	<p>Negril Gardens should investigate power factor correction measures to remedy the existing low power factor (82%) conditions.</p>	M	Not yet determined	Not yet determined
	<p>The supply voltage at the sub-distribution panels is lower than standard supply levels. Negril Gardens should consider improving voltage supply by tapping up service transformer.</p>	M	Not yet determined	Not yet determined
	<p>☉ Although pool filter pumps are generally operated continuously, experience has shown that pool water quality can be maintained by running the filter pumps for 12 to 16 hours per day. Negril Gardens should therefore shut off its filter pump at night, this measure will save energy and increase the useful life of the pump.</p>	M	L	H
	<p>There is a large number of incandescent bulbs used around this property (especially for exterior illumination). Wherever possible, Negril Gardens should consider replacing burnt-out incandescent bulbs with energy efficient fixtures (e.g., compact fluorescent bulbs).</p>	M	M	M
	<p>Lighting levels in the kitchen are poor and should be upgraded to improve working conditions for kitchen staff.</p>	H	M	Not applicable

Env aspect of the property's activity	Recommended action	Environ impact of the action	Cost to implement the action	Action's cost effectiveness
	Laundry room equipment and ventilation fan need servicing (drive belts need adjusting)	M	M	M
	⊗ Maintenance and management should encourage staff to turn off lights and equipment that are not in use	M	L	H
Energy use Air-conditioning	The louvered windows and the large gaps under many entrance doors result in a significant heat gain in the guest rooms and add to the load on the a/c units Install durable weather stripping on the louvered windows and at the base of the entrance doors to reduce heat gain and the energy consumed by the a/c units	M	L	H
	Many of the a/c units are in need or servicing	M	M	M
	Bathroom windows are left open in many rooms while the air conditioners are on Negril Gardens garden should consider installing door closure devices on bathroom doors to eliminate heat gain from bathroom windows	M	M	M
Energy use Hot water supply	Install timers on water heaters -- currently, water heaters are on 24 hours per day	M	M	M
Solid waste generation	⊗ Negril Gardens should implement a hotel-wide recycling program to segregate glass, metal, cardboard, paper and green waste from its general waste stream	H	M	M
	⊗ Sell old equipment to a scrap dealer or use it for parts Currently, old equipment is usually thrown out This practice not only increases the amount of waste being disposed of, it is also a lost source of revenue	H	L	M
Damage to the ecosystem	Negril Gardens should stop discharging untreated gray water from it laundry operations in the wetlands located behind the tennis court The discharge of sewage and noxious effluents in bodies of water or onto the ground is prohibited by Jamaica's Natural Resources Conservation Authority Act	H	M / H	Not applicable
Generation of air emissions	Implement a CFC phase-out program This program should include the proper handling and recycling of R-11 and R-12 CFC refrigerant from old equipment, and the gradual replacement of old equipment with CFC-free equipment	H	H	Not applicable

**FRONT OFFICE AND GIFT SHOP**

Solid waste generation	⊗ Implement a paper reuse program Once-used paper (i e , printed on one side only) can be reused as scrap paper for taking notes, writing inter-office memos, etc	M	L	H
	⊗ In the gift shop, replace the brown paper currently used to wrap breakable items with used newspaper	L	L	H

Env aspect of the property's activity	Recommended action	Environ impact of the action	Cost to implement the action	Action's cost effectiveness
	<ul style="list-style-type: none"> <li>Whenever feasible, don't automatically give out plastic bags for gift shop purchases, instead ask guests if they would like one Replace plastic bags with paper bags</li> </ul>	L	L	H

**PURCHASING DEPARTMENT**

Solid waste generation	<p>Purchase as much recycled paper products as possible (office paper, toilet paper, facial tissues, paper towels, etc ) Most paper products manufacturer have environmentally friendly alternatives which contain a minimum of 20% POST CONSUMER waste The price and quality of recycled paper products are often comparable to those of virgin paper products Negril Gardens must be commended for already purchasing many recycled paper products and the purchasing department should be encouraged to persevere in its efforts</p>	H	L	Not applicable
	<ul style="list-style-type: none"> <li>Implement a program to return all chemical drums to distributors</li> </ul>	M	L	H

**HOUSEKEEPING DEPARTMENT**

Water use	<ul style="list-style-type: none"> <li>Instruct housekeepers to use a bucket when cleaning instead of allowing the faucets to run continuously</li> </ul>	M	L	H
Energy use	<ul style="list-style-type: none"> <li>Turn air conditioners off during room cleaning operations After cleaning the rooms, leave the a/c units off or, if requested by the guests, turn them back on at a low energy setting Supervisors should include this task on their checklists</li> </ul>	M	L	H
	<ul style="list-style-type: none"> <li>Create a policy which instructs housekeepers to turn off all lights after cleaning a room Supervisors should include this task on their checklists</li> </ul>	M	L	H
	<ul style="list-style-type: none"> <li>Many guests leave the air conditioner running and lights on after leaving the room for the day's activities Negril Gardens should place a tactful note in the rooms to encourage guests to turn off air conditioners and lights whenever they leave their rooms for extended periods</li> </ul>	M	L	H

**LAUNDRY**

Water use / Energy use / Generation of water pollutants	<ul style="list-style-type: none"> <li>Let guests decide if they want to replace their linens and towels every day International and Jamaican (JHTA) experience has revealed that such an option can reduce the laundry load by up to 40% By reducing the volume of materials processed through the laundry, the hotel can lower its water, chemicals and energy costs, lengthen the useful life of its laundry equipment, and reduce its discharge of pollutants to the environment</li> </ul>	H	L	H
Energy use	<p>The drying and cooling times on the drying machines are manually set This practice should be controlled and optimized in order to conserve energy in the laundry room</p>	M	L / M	M

Env aspect of the property's activity	Recommended action	Environ impact of the action	Cost to implement the action	Action's cost effectiveness
	☉ Washer and dryers are not always operated at optimal loads Negril Gardens should insure that the washing machines and dryers are operated at recommended <u>full</u> load as often as possible	M	L	H
Solid waste generation	Discontinue the practice of wrapping linens and towels in plastic bags Purchase durable, reusable canvas bags as an alternative	M	L	M
Generation of water pollutants	Discontinue the use of the Swift LD-500 water conditioner This product contains poly and pyro-phosphates which damage aquatic systems, and should be replaced by a phosphate-free alternative	H	L	Not applicable
<b>KITCHEN</b>				
General	Plant an herb garden Chef Bailly expressed an interest in planting an herb garden in order to supply the restaurant with fresh herbs This feature will reduce costs in purchasing, diversify the existing landscape, and increase the marketability of the restaurant and hotel We also recommend that the plants should be labeled and made available to the guests to view to enhance the guest experience	M	L	M
Water use	☉ Make an effort to thaw as few items as possible under running water Use the refrigerator or a basin of water as an alternative when possible	M	L	H
	Instead of hosing down the kitchen every day, the stewards should mop the floors to conserve water	M	L	M
Energy use	The exhaust fans should be regularly cleaned	M	L	M
Solid waste generation	Purchase sealable, reusable plastic containers (e g , Tupperware) to reduce the use of disposable plastic wrap for food storage	M	L	M
Generation of water pollutants	☉ Purchase a measuring cup for pot washer to control the amount of concentrated dish soap that is used Currently an excessive amount of soap is used	M	L	H
<b>RESTAURANT AND BAR</b>				
Water use / Solid waste generation	Discontinue the practice of supplying guests with new glasses or disposable cups for each drink they order If a guest orders the same beverage twice, offer to refill the glass as an alternative to giving a new glass This measure will cut down on water used for dish washing, chemical use, and the generation of solid waste	M	L	M

Env aspect of the property's activity	Recommended action	Environ impact of the action	Cost to implement the action	Action's cost effectiveness
Solid waste generation	Wherever possible, replace disposable plastic or paper wares with reusable alternatives	M	L	M
	☉ Reduce packaging waste by purchasing sugar, jellies and jams, butter and cereal in bulk	M	L	H
	☉ Do not give straws out automatically with drinks Guests should be asked if they would like one Replace plastic straws with paper straws	L	L	H
	Implement a policy to use/sell excess inventory before introducing new items to the menu (i.e. wine)	M	L	Not applicable
	Replace paper napkins with linen napkins	L	L	L
	☉ Eliminate the use of paper doilies	L	L	H
<b>POOL</b>				
Water use	☉ Sweep the pool deck instead of hosing it down, or at least minimize the amount of water used to clean the pool deck A continuously running hose is a very costly alternative to a broom	M	L	H
<b>GARDENS</b>				
Water use	☉ Sweep patios and walkways instead of hosing them down A continuously running hose is a very costly alternative to a broom	M	L	H
Solid waste generation	☉ Start a composting program for the garden's green waste and the kitchen's vegetable and fruit scraps The finished compost can then be used on the hotel grounds to replace chemical fertilizers	H	L	M
	☉ Use durable and reusable canvas bags rather than disposable plastic bags to gather green garden waste	M	L	H