

**Puerto Rico Landfill Initiative (PR)**  
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**ISSUES**

Many operating landfills in Puerto Rico have been in significant non-compliance with Federal and Commonwealth solid waste landfill regulations for over 10 years and are considered open dumps that present an ongoing risk to human health and the environment. The Solid Waste Management Authority (SWMA) and the Environmental Quality Board (EQB) have not been effective in correcting this non-compliance.

**CURRENT STATUS**

ARA K. Callahan met with the honorable Anibal Acevedo Vila, Governor of the Commonwealth of Puerto Rico, Carlos Lopez, Chairman of the Puerto Rico EQB, Dr. Guillermo Riera, Executive Director, SWMA, and Javier Velez, Secretary of the Department of Natural and Environmental Resources, the week of March 7th, 2005, regarding solid waste management in Puerto Rico. The ARA raised the critical problem of the open dumps facing Puerto Rico to the Governor.

On March 23, 2005, the ARA sent a letter to the Governor as a followup to their earlier meeting on solid waste management. The ARA's message was that Puerto Rico needs to take action to correct the current open dump crisis.

On March 18, 2005, the ARA sent an email to Carlos Lopez with EPA's comments on the Hormigueros Landfill Order, the Florida Landfill Order and compliance plan, and the Barranquitas, Arecibo, and Juana Diaz compliance plans.

On March 31, 2005, Carlos Lopez replied to the ARA with respect to EPA comments on the Hormigueros Landfill. A response to Carlos Lopez has been prepared in an email and has been provided to the ARA.

On April 20, 2005, the RA sent a letter to Carlos Lopez, Dr. Riera, and Javier Velez confirming agreements reached at the meeting held the week of March 7, 2005. This letter enclosed the March 18, 2004, letter to EQB from George Meyer and the March 18, 2005, email from the RA to Carlos Lopez.

On April 26, 2005, the RA sent an email to Carlos Lopez which included EPA's comments on the March 21, 2005, response from Carlos Lopez.

On April 26, 2005, EPA reviewed the recently received english version of SWMA's August 2004, waste characterization and measurement study, including perimeter

delineation, at twenty nine landfills/dumps. The following areas are addressed in the report:

- Waste Measurement at 29 landfills (wt and vol)
- Waste Characterization at 12 landfills and 2 transfer stations (composition and source)
- Delineation of perimeter (footprint) of 29 landfills

**Actions Needed from the Commonwealth:**

(1) Immediately take action against municipalities to close any open dumps that were closed in 1994 but are still operating or have reopened, such as Santa Isabel.

(2) Take action through Operation Compliance and Consent Orders to require municipalities to implement interim measures at all operating landfills, as appropriate. These interim measures, which should include operational steps, such as ensuring security, controlling waste acceptance, and applying daily cover, need to be put in place pending the implementation of an acceptable Commonwealth solid waste management plan resulting in landfills in compliance with Commonwealth and Federal landfill requirements. Also, the interim measures need to include the upgrading of the few existing acceptably run municipal landfills, such as the one in Humacao. Such landfills would operate as the first of the regional landfills.

(3) Take action to revise the 2004 strategic plan for solid waste management issued by the SWMA so that it is consistent with the March 1995 Plan that EPA found acceptable. Such a Plan will call for (a) the closure of most of the existing open dumps/municipal landfills that have been operating in significant non-compliance for the last 10 years, especially those located in sensitive and vulnerable areas; (b) the conversion of a number of these closed landfills to acceptably run transfer stations; (c) the construction of new regional landfills, that are protective of human health and the environment into regional landfills; (d) an acceptable schedule and financing plan for achieving the above. This Plan should be submitted to EPA for review and approval.

(4) As called for in the March, 1995 plan of Regional Infrastructure for Recycling and Disposal of Solid Waste in Puerto Rico, all 29 remaining open dumps need to be closed and replaced with a system of regional landfills and/or other facilities meeting 40 CFR Part 258. The Humaco landfill is the only exception and can remain in operation. The 1995 plan needs to be updated to reflect current conditions. EPA anticipates that such an updated plan would require that of the 29 other landfill closures, that the TOA Baja, TOA Alta and Florida dumps would be closed on a priority basis because of poor location and potential environmental threats consistent with assuring that the waste presently being disposed at these dumps is sent to facilities meeting 40 CFR 258. Therefore, we recommend that these three open dumps be closed as soon as possible.

## **BACKGROUND**

In 1978, the Solid Waste Management Authority (SWMA) was created to address what was called then, "the critical problem related to the production of solid waste in Puerto Rico, which threatens to overwhelm the Commonwealth's economic and environmental resources."

In 1989, EQB found that only two existing landfills were "well-operated," while 80-88% were termed "a disaster." This led SWMA to undertake a review of solid waste management as well as strategies to pursue. Subsequently, 37 landfills were closed. In 1994, EPA conducted an adequacy determination and found EQB's RCRA Subtitle D Solid Waste Management Program to be adequate, thereby constituting an approved program.

In January 1994, EPA determined that EQB had an adequate solid waste permit and enforcement program. EPA also accepted Puerto Rico's seven-year solid waste management plan, prepared in 1991 and announced by SWMA on August 10, 1993. The plan included the construction of 10 regional landfills, two resource recovery facilities, and 17 waste transfer stations. The plan was modified by SWMA in 1995 to slightly reduce the number of regional facilities and to reduce construction and operation and maintenance costs.

Although approximately 30 open dumps have been closed in the last 15 years, the remaining 29 operating municipal solid waste landfills are still in significant noncompliance with both the Commonwealth and Federal Solid Waste Landfill regulations, and there has been no apparent effort made by the Government of Puerto Rico to implement the August 10, 1993 Solid Waste Management Plan.

The SWMA completed a waste characterization and measurement study, including perimeter delineation, at twenty nine landfills/dumps in 2003. EPA funding was provided. The SWMA then issued a revised plan dated August, 2004. Although it was not in English, initial translation and information indicated that the plan is intended to be "strategic" in nature and did not commit to any new regional landfills or other major construction. The strategy apparently relied heavily on increasing recycling to extend the life of the landfills and dumps. The new plan also apparently did not provide for funding to help educate the municipalities about recycling but does suggest additional study of the problem, changing laws and regulations, and includes vague declarations to promote future action. On April 26, 2005, DEPP reviewed an english translation of the plan and identified the following areas that are addressed in the report:

- Waste Measurement at 29 landfills (wt and vol)
- Waste Characterization at 12 landfills and 2 transfer stations (composition and source)
- Delineation of perimeter (footprint) of 29 landfills

This plan, therefore, cannot be used to guide Puerto Rico to a satisfactory solution to its solid waste management problem and is unacceptable in its present form.

DECA-RCB has inspected 18 municipal landfills since March, 2003, and found widespread long-term non-compliance with municipal landfill requirements consistent with past EQB findings (78% found substantially out of compliance). Most significantly, none of the landfills had required liners or leachate controls, few had adequate placement of daily cover, and some of the landfills were situated in karst sink holes (risking direct groundwater contamination).

A letter was sent to EQB on August 22, 2003, asking for a Plan of Action to address the non-compliance. In response, EQB submitted a strategy called "Operation Compliance," along with a Compliance Operation Plan. The plan pardons all administrative fines against municipal landfills if they notified EQB of intent to enter consent agreements with EQB by August 12, 2003, met to discuss consent agreements by September 27, 2003, and negotiated proposed consent agreements by December 11, 2003. As of November, 2004, EQB has evaluated most of the compliance plans submitted by the landfills; the PR Solid Waste Management Authority (SWMA) allocated \$8 million to the 22 municipally owned landfills to help in paying for the costs of compliance (the other 8 are privately owned and received no money from SWMA). However, as far as DECARCB knows, no Consent Orders have been fully negotiated with any municipality and public noticed. Therefore, EQB/SWMA are far behind schedule in their implementation of Operation Compliance.

DECA-RCB has, through a (1) meeting in November, 2003, (2) a letter sent to EQB on February 5, 2004, (3) a meeting held on March 3, 2004 with EQB and the SWMA and a follow-up letter sent on March 18, 2004, and (4) a meeting held on August 25, 2004 with EQB, followed-up regarding the status of Operation Commitment. Follow-up has included a review of the Consent Order negotiation schedule submitted by EQB, a discussion of how the municipalities will obtain the funding necessary to bring their landfills into compliance, tracking and discussing with EQB, the progress made in negotiating Consent Orders with each of the municipalities, and a review of Compliance Plans submitted by four municipalities and two draft Consent Orders prepared by EQB. In addition, at the March 3, 2004 meeting, it was agreed by EQB that DECA-RCB would review the Consent Orders for the seven landfills considered to pose the greatest risk to public health and the environment prior to their finalization. Of the four Compliance Plans reviewed, three were for high risk landfills (Arecibo, Florida, and Hormigueros), and the two draft Orders reviewed were for Florida and Hormigueros.

Many of the landfills need to be closed owing to their location in highly vulnerable areas, prohibitive cost of compliance/technical improbability of compliance, limited remaining capacity, and/or long history of recalcitrant behavior. Only those landfills that: 1) are in substantial compliance or can achieve substantial compliance within a reasonable timeframe and at reasonable cost, 2) are protective of human health and the environment, and 3) have significant remaining capacity should be allowed to operate. This approach is consistent with the Solid Waste Management Plan that was originally submitted in 1993. Letters to EQB, SWMA, and the Governor for the RA's signature have been drafted, indicating these findings and requiring the submission of an acceptable plan for the management of solid waste on the island.

In addition to the above factors, EPA has been made aware of other circumstances which heightened our concern regarding Puerto Rico's solid waste management program, including:

1. EPA has received a letter from attorneys representing landowners in Santa Isabel requesting EPA action on this reopened MSWLF. The landfill, closed since 1993, has been allowed to resume operations without attempting to meet RCRA Subtitle D municipal landfill requirements; and
2. EPA has received information from an attorney representing the Municipality of Lajas alleging that their own landfill was in serious noncompliance, was expanding laterally (as defined by original Environmental Impact Study), would not be able to meet the requirements of Operation Compliance, and would soon lose funding from SWMA. Such problems were not reflected on EQB's progress chart.

To summarize, the fundamental flaws in the Puerto Rico MSWLF system are well known and documented. The State Plan issued in 1993 addressed the most significant problems by construction of modern, environmentally protective regional landfills and subsequent closure of most of the smaller landfills and all of the remaining environmentally high risk sites. Currently, only one of the landfills reviewed by EPA could be considered as environmentally protective (Humacao). The failure to carry out this plan is the underlying problem. Any attempted solutions, such as Operation Compliance, that do not involve implementation of an acceptable state plan, closure of many, if not most, of the current landfills, and does not shift municipal and commercial solid waste to landfills with environmentally-sound siting and design, sufficient long-term capacity, and sufficient funding, are unacceptable.

In the absence of any realistic, funded, and satisfactory plan, developed by the SWMA and approved by the Government of Puerto Rico, to correct the fundamental problems with the current MSWLF system, EPA must consider its legal options. For example, Section 4007 of the Resource Conservation and Recovery Act (RCRA) provides for EPA to review a state's plan from time to time, and if revisions are needed, to bring the plan into compliance with the minimum requirements in Section 4003 of RCRA. EPA may

withdraw approval of the plan until such time as it becomes acceptable again. EPA may, in its discretion, consider use of other enforcement and program options, including RCRA 7003 and withdrawal of EPA's adequacy determination, available to it to remedy the solid waste situation in Puerto Rico.

EPA plans to issue letters to the Governor and to the heads of EQB and SWMA, requesting immediate action. We will then meet with SWMA and EQB in early 2005 to discuss our findings and conclusions and formulate follow-up strategies.