

MUNICIPALITY SOLID WASTE MANAGEMENT IN THE HAVANA BAY LITTORAL

Félix Palacios¹
Ernesto García¹
Orleans García¹
Vladimir Fraguela²
Andrés Ruiz²
Carmen Sarduy²
Freddy Potrillé¹

¹*Centro de Ingeniería y Manejo Ambiental de Bahías y Costas, Cuba*

²*Dirección Provincial de Servicios Comunes, Cuba*

ABSTRACT

The work shows the characterization of the municipality solid waste (MSW) generated in the port enclosure and the 6 contiguous municipalities to the Havana Bay, as well as proposals of viable technological solutions for MSW management. The cardboard (31%), paper (19%) and in smaller measure of plastics and organic (9%) prevalence in the MSW generated in the port enclosure, a pondered generation index of $0.4 \text{ kg.inhabitant}^{-1}.\text{day}^{-1}$ and a production of 5.2 t.day^{-1} (4.6 t.day^{-1} of dry garbage and 0.6 t.day^{-1} of humid garbage). The 6 municipalities generate 314.4 t.day^{-1} (241.4 t.day^{-1} of humid garbage and 73 t.day^{-1} of dry garbage) and a pondered generation index of $0.49 \text{ kg.inhabitant}^{-1}.\text{day}^{-1}$ with a prevalence of organic (75%). It intends a semiautomatic selection plant of treatment primary in the port enclosure to process the dry garbage coming from the collection differed in the Habana Vieja municipality and the port enclosure in a first stage. The second stage incorporates the dry garbage of the Centro Habana municipality and Tarára Tourist Complex, and in the last stage the 10 de Octubre, San Miguel del Padrón, Guanabacoa and Regla municipalities. The organic fraction coming from the humid garbage will be used in the compost production. An important economic impact takes place to short, medium and large term for the extension of the useful life of the Street 100 landfill for 4 years more, (14 year-old) because the setting in march of the selection plant will diminish the contribution from MSW to the Street 100 landfill in approximately 700 t.day^{-1} , as well as the additional revenues for the sale of the recovered materials to Empresa Provincial de Recuperación de Materias Primas ($2755.02 \text{ USD.day}^{-1}$) and the compost ($2250 \text{ Cuban pesos.day}^{-1}$). The employment exchange in the territory will increase in 40 new employments during the 1st stage. The project facilitates the environmental acting of the port terminals and industries of the port enclosure and municipalities.