

Student Scientists Tour Pine Acres Renewable Energy Facility



Left to Right: Tavis Bell, Mariah Robinson, Nydea Terrell, Miles Frierson, Sabreyia Mason, Gjvon Robinson

As the saying goes, one person's garbage may be another person's gold. This is a true statement when considering how communities throughout the world are using biochemistry concepts to convert rotting garbage into usable forms of energy. Landfill gas (also referred to as methane gas) is a flammable byproduct that is derived from the decomposition of organic matter. It can be collected and used directly for industrial use or sold to gas-to-energy plants to produce electricity.

On December 4, 2013 Ecotek student scientists Gjvon Washington, Sabreyia Mason, Mariah Robinson and Tavin Bell (George Crockett Academy-Detroit, MI) along with Miles Frierson (Derby Middle School-Birmingham, MI) and Nydea Terrell (Berkshire Middle School-Birmingham, MI) visited the Waste Management Pine Acres Landfill Gas Energy Plant in Lenox, Michigan.

Upon arrival at the landfill the students met with Ms. Kathleen Klein, Director of Community Outreach at Waste Management. Ms. Klein provided a brief overview of the landfill industry and the Pine Acres site layout. She also discussed key scientific concepts such as the Law of Energy Conservation and how it applies to the garbage to energy conversion process. After the briefing with Ms. Klein the students drove around the landfill to see, first hand, how the methane gas is collected, stored, transported to the power station and converted into electricity. They also learned about the environmental conservation efforts that have been put in place in and around the Pine Acres plant to protect the wildlife and water resources.

Waste Management's Pine Tree Acres Landfill has been operation since 1986. It produces enough electricity to power 19,500 homes. Pine Acres is a certified Wildlife Habitat Council/Wildlife at Work program. It has over 100 acres of dedicated natural and reconstructed wetland area adjacent to the site.



Waste Management's landfill gas power plant at Pine Acres in Lenox, Michigan



Ms. Kathleen Klein providing overview of landfill gas technology and layout of the Pine Acres landfill site to students



Students at the Pine Acres power plant with Ms. Kathleen Klein discussing gas to electricity power generation

About the Ecotek Science Program

Ecotek is a science research lab program for young inventors and researchers in grades 5 thru 12. Student scientists work on projects aligned with the issues being addressed by world leaders at the United Nations. To learn more about Ecotek Lab go to <http://www.ecotek-us.com>