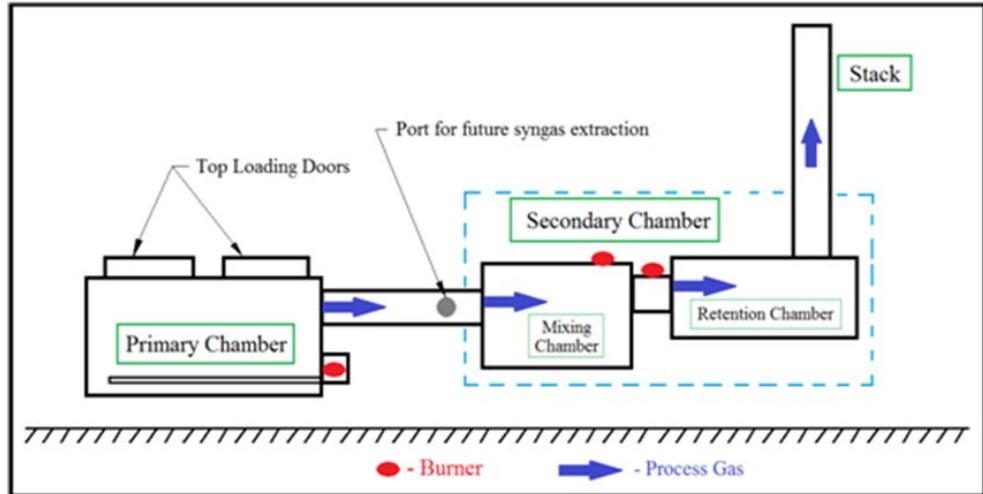


AIR FORCE PRESENTATION ON WASTE TO ENERGY AND WASTE WATER RECOVERY AT THE FALL 2014 JOINT COMMITTEE ON TACTICAL SHELTERS (JOCOTAS) MEETING HELD ON 18 NOV 2014. During the extended deployment of the U.S. Military to Afghanistan and Iraq the issue of open burn pits for disposal of solid waste drew considerable attention as a result of returning Warfighters identifying respiratory problems. This was a complex problem and included exposure to local, carbon heavy diesel fuel and leaded gasoline, incineration by products and, naturally occurring fine particulates found in the air. Many of these elements were independent of coalition activities. Open pit burning of solid wastes have essentially been banned by DoD. Solutions to the disposal of solid wastes are driven by the size of the base, the



anticipated length of deployment and the type and quantity of waste produced daily. The Air Force mission is focused on providing Combatant Commanders increased aircraft sortie generation and strike capability from austere areas. Known as a BEAR (Basic Expeditionary Airfield Resources) Base system it can range in size from 500 to over 3000 Warfighters. For this requirement the Air Force is developing a self sufficient waste to energy processing system that can produce and reuse syngas fuel to convert two to three tons of mixed refuse per day to a couple of 55 gallon drums of non hazardous ash; the system capacity can be doubled with the addition of 1-2 more primary chambers. The current prototype is housed in two, 20 foot long ISO shipping containers weighing less than 25,000 pounds each. The main components consist of a top loading primary incineration chamber, a secondary gas treatment chamber. The unit must meet U.S. environmental regulations for emissions and by-products. Testing, to validate emissions performance is scheduled for late December. Key usability features are no waste sorting required and a 24 hour batch cycle. The Air Force rep also briefed the Expeditionary Waste Water Processing System (EW2PS) unit designed to efficiently recover grey water for reuse. Water was another major logistical burden for contingency basing both in acquisition and disposal. The EW2PS leverages advanced filtration technologies and reverse osmosis to recover up to 90% of the grey water, reducing non-potable fresh water demands. The BICON based system's critical characteristics include a processing rate of 15,000 gallons/day, water meets reuse standards and weight is less than 10,000 pounds. The current project scope includes building the EW2PS and testing it at a contractor facility, followed by demonstration at Tyndall AFB Silver Flag training site.