

Temporary Ash Aggregate Screening and Storage Project

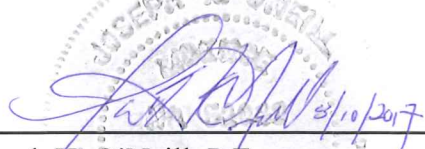
Operation & Maintenance Plan Southeast County Landfill



**Hillsborough
County** Florida

**SOUTHEAST COUNTY LANDFILL
HILLSBOROUGH COUNTY
PUBLIC WORKS DEPARTMENT
SOLID WASTE MANAGEMENT DIVISION
15960 County Road 672
Lithia, Florida 33547**

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1.0 INTRODUCTION

The Hillsborough County Public Works Department, Solid Waste Management Division (SWMD) operates a Waste-to-Energy (WTE) plant, designated as the Resource Recovery Facility (RRF), and a Class I disposal landfill, designated as the Southeast County Landfill (SCLF). The SWMD is developing a demonstration project that will process and screen combined WTE residual ash taken from the RRF for use in road bases and combining with asphalt and concrete in various construction projects. As part of the demonstration project, WTE residual ash will be screened and segregated into different size gradations. Physical and other environmental testing and permits for the demonstration of the project will be submitted under separate cover to the Florida Department of Environmental Project (FDEP) for review and approval. The temporary stockpiling and screening of the WTE residual ash, hereafter referred to as the Temporary Ash Re-Use Aggregate Screening and Storage Project (Project), is the portion of the demonstration project that is covered under this Temporary Operations and Maintenance Plan (Plan). The processing and screening portion of the Project will occur at the SCLF within the disposal limits of Phase I-VI areas.

This operation and maintenance plan for the Project was prepared to describe the processing and screening operations only. The location of the processing and screening will be within the Phase III disposal area at the SCLF.

This Plan has been prepared for the Project to meet the permit requirements of the FDEP. The Project will occur in two (2) phases that may occur separately, or overlap. Any overlap will be based on the contractor's availability to process and screen the ash and the availability for obtaining screened ash to test and permit the use of the screened ash on the demonstration project. The first phase of the Project will consist of County staff stockpiling 25,000 tons of combined ash from the County's RRF and storing this material in the Phase III disposal area of the SCLF. The second phase of the Project will involve a contractor screening the material and creating three (3) separate aggregate fractions, collection of test samples for permitting, and temporary storage of the screened ash piles in the Phase III disposal area until this material is needed for use as part of the construction activities for the demonstration project.

Anticipated Project Timeline

- Phase I - The initial stockpiling of 25,000 tons of combined ash is expected to take 3 to 4 months depending on ash generation rates at RRF. Once 25,000 tons stockpiled, no additional ash will be processed or screened.
- Phase II - The testing and permitting is expected to take 3 to 4 months, with construction use of the ash occurring approximately 6 months to 12 months following FDEP approval of the screened ash for use in the construction portion of the demonstration project. Upon completion of the construction use of the screened ash, the temporary stockpile area will no longer be utilized and the stockpile area returned to general landfill and disposal operations.

A copy of this temporary Plan will be kept at the SCLF. Updates or revisions will be forwarded to FDEP for review and approval.

1.1 Southeast County Landfill (SCLF) Location and History

The SCLF is located in southeast Hillsborough County within Sections 14, 23, and 24; Township 31S; Range 21E, at 15960 County Road 672, approximately 9 miles east of US 301 in Lithia, Florida. Before the 1950's, the SCLF was used for phosphate mining and mining waste products such as sand tailings and phosphatic clays, the materials remained on-site and are currently used when possible in disposal operations. In the mid-1980's the SCLF was permitted by the FDEP as a Class I solid waste disposal Facility (Permit No. 35435-024).

1.2 Overview of General Landfill Operations

The SCLF is a Class I disposal landfill with two distinct and separate disposal areas, designated as Phases I-VI and the Capacity Expansion Area.

The SCLF is the final depository for municipal solid waste (MSW), ash residues, non-processables, and bypass wastes from the Solid Waste Management System of Unincorporated Hillsborough County. The SCLF also receives solid waste from the cities of Temple Terrace and Tampa, as well as MSW ash residues and bypass wastes from the Waste-to-Energy Incinerator Facilities of the City of Tampa and Hillsborough County. Hazardous waste is not accepted at the Facility.

1.3 Overview of the Temporary Ash Re-Use Screening and Storage Area Operations

This Plan is only for the development and use of the Project, which will be located in Phase III of the SCLF (see Figure 1). The Project area will be for the temporary storage of bulk ash residual material, screening, and stockpiling of the screened ash for use a demonstration project. Refer to the following section for details on the operations of the Project area. Once the stockpiled screened waste for the Project has been used, the Phase III area will be returned to general landfill disposal operations.

2.0 OPERATIONS

2.1 Project Area Development and Maintenance

The Project area, approximately 4.5 to 5 acres, will be placed within the Phase III disposal area that is currently covered with an approximately 2-foot thick layer of soil and grass. No final closure cover barrier layers that would require special protection exist in the Project Area.

The SWMD will construct an earthen, containment berm around the Project area, as shown in Figure 1, prior to placement of the diverted ash material into the bulk stockpile(s). The containment berm will divert stormwater runoff and contain leachate that is developed within the Project Area. Stormwater outside of the containment berm will be treated as clean runoff and managed in accordance with the SCLF operations permit. Runoff and leachate that is generated within the Project area will be collected in the sump and pumped, via a temporary HDPE forcemain connection, from the Project area to the double-lined Pond B. The Project area will be pumped in a manner to prevent flooding of the Project area. During rain events, pumping will continue until all contained leachate has been removed. Removal of the collected leachate will allow access to the processing equipment and keep the soils dry to minimize rutting of the existing cover soils.

The earth containment berms will be maintained and sodded to minimize erosion. Any erosion or deteriorated section of the containment berms will be repaired.

The County will maintain the existing stabilized roadway from the entrance of the SCLF to the Project area. This road is also used for normal traffic and is required for landfill operations.

Several active landfill gas collection system wells and water level measurement piezometers are located adjacent to or within the Project area. Barriers will be erected around all gas extraction well-heads and piezometers to protect them from damage. Access to the well-heads and piezometers for periodic monitoring and adjustment shall be maintained during the entire duration of the Project.

2.2 Equipment Requirements

Following are key design features and specifications for the equipment to be used:

- Front-end Loader: articulated rubber tire loader; 3 cubic yard light material bucket; dumping height of 10 feet measured from bottom of bucket; and, enclosed air-conditioned cab with air filtration is recommended.
- Vacuum Assist Pump: 4 inch vacuum assisted diesel pump to move contact stormwater and leachate from the sump area in the Project area to the SCLF's Pond B.
- Processing Equipment – Including but not limited to a power screen and other support equipment.

2.3 Incoming/Receiving

All bulk diverted ash delivered to the stockpile will be weighed using the SWMD's truck scales, which are located at the SCLF scale house. An estimated 25,000 tons of inbound ash is needed to produce sufficient quantities of screened material sizes needed for the demonstration project.

Incoming ash delivery trucks will be directed at the scalehouse and loads of WTE ash will be diverted to the Project area. All loads of by-pass and/or other municipal Class I waste will be sent to the working face at the SCLF.

Once at the Project area, the diverted ash delivery trucks will be directed to unload the ash material into a bulk stockpile. Unloaded ash waste has already been inspected (spotted) at the RRF; however, staff at the SCLF spot for unauthorized waste material as defined in the SCLF operations permit.

SWMD staff, in conjunction with Contractor staff, for the processing and screening of the ash, shall perform all activities within the Project area as shown on Figure 1.

All stockpiles shall be constructed to uniform dimensions with smooth and even surfaces. Maximum stockpile height shall be 15-feet with a maximum of 2(h):(1v) sideslopes.

2.4 Ash Aggregate Fractions

Phase II of the Project will take the ash from the bulk stockpile to be processed and screened using a mechanical screening system and sorted into three separate stockpiles for ash aggregate products as follows:

Stockpile No 1. ¼ inch to 1 ½ inch size fraction

Stockpile No 2. ¼ inch to ¾ inch size fraction

Stockpile No 3. Fraction less than ¼ inch

Initial Bulk Screening

Ash that has been screened with aggregate sizes greater than 1½-inch fraction will be stockpiled at one location within the Project area. Ash Aggregate greater than 1½-inch size fraction will be taken to active landfill working face for disposal after running all loads over the scales to determine tonnage.

Processed Stockpile No. 1

This stockpile will consist of ash aggregate from ¼ inch to 1½-inch aggregate size. Ash aggregate greater than 1½-inch will be removed during the screening and disposed as described above. Screened ash aggregate less than ¼-inch material generated from the production of the ¼ inch to 1½-inch size fraction will be taken to Stockpile No. 3.

Processed Stockpile No. 2

This stockpile will consist of ash aggregates from ¼ inch to ¾ inch in size. The aggregate greater than ¾ inch fraction generated from the production of this material shall be stockpiled with the greater than 1½-inch fraction for disposal as described above. The fraction less than ¼ inch generated from the production of this material shall be taken to Stockpile No. 3.

Processed Stockpile No. 3

This stockpile will consist of ash aggregates of less than ¼ inch aggregate size. This ash aggregate will be the finest and smallest aggregate produced during the screening process. Aggregate material less than ¼-inch produced during the screening operations for Stockpiles No. 1 and 2 will be taken to this stockpile for temporary storage.

The ash aggregate shall be processed in a manner that breaks down the ash into individual particles to the greatest possible extent and screened into three production fractions with discarded aggregates over 1 ½-inch fraction.

2.5 Dust Control

Appropriate precautions will be taken at all times over the duration of the Project to control dust emissions. These precautions include the application of water, dust suppressants, or covers. The SWMD and the Contractor processing the materials shall monitor site conditions to ensure that dust emissions are controlled in accordance with the SCLF operations permit.

2.6 Metals Removal

Ferrous and non-ferrous metal will be removed from the screening process of the ash, to the greatest practical extent using a combination of magnetic and electrostatic recovery technologies. Other technologies to enhance metals removal may be utilized by the County's contractor that is assisting with the operations of the Project area, to demonstrate other methods for metals recovery. One additional result or demonstration of the screening process for the Project is to maximize the percentage of metals from the in-bound ash materials. An enhanced metals recovery process will have a twofold benefit i) increased

revenue from the recovery of the metals and ii) a reduction in metal content in the ash aggregate to potential improve environmental testing of the ash aggregates in the demonstration project.

2.7 Protection of LFG System and Piezometers

During the initial stockpiling, processing, screening, and screened stockpiling, all LFG system and piezometers will be protected and access to the structures maintained during the entire duration of the Project. No ash aggregate should be placed within approximately 5-feet (min) of these structures.

3.0 STORMWATER AND LEACHATE MANAGEMENT

3.1 Stormwater Containment Berms

Containment berms will be constructed surrounding the Project boundary. All stormwater that falls within the Project boundary berms will be treated as leachate and will be conveyed to the Project leachate collection sump. Stormwater falling outside of the containment berms, and has not contacted ash or waste material, will be treated as clean runoff and allowed to flow into the stormwater management system.

3.2 Leachate Collection Sump and Pump Station

The interior area of the Project currently, and during the duration of the Project, drains toward the north and thus the flow inside of the containment berms will convey leachate from the bulk storage pile, stockpile(s), and equipment staging areas toward the north. A perforated collection pipe will collect leachate at the north side of the Project area. This pipe will be connected to a leachate collection sump that will be connected to a 4-inch diesel vacuum assisted pump. The pump discharge will be routed, within a HDPE pipe, to the double-lined Pond B located south of the Section 7, 8, and 9 disposal area. Leachate collected within Pond B will be pumped to the main pump station and the onsite Leachate Treatment and Reclamation Facility.

The SWMD will continue to operate the leachate collection sump area until the Project has been completed and all ash stockpiles have been removed from the Project area.

4.0 PROJECT COMPLETION

4.1 Project Area Restoration

Upon completion of stockpiling, screening activities, testing, and use on the demonstration project the processing and screening areas will be restored to the conditions prior to initiating the Project. Restoration activities will include removal of the containment berms, removal of the leachate collection piping, sump, and pumps, removal of remaining unused ash, removal of surficial ash residual material, re-establishing the surface diversion stormwater berms, and seed/sodding the Project area to stabilize the cover.

The Project area will be regraded to match the grades shown on the Phase I-VI Fill Sequence plans, the intermediate cover verified for thickness (areas with 18-inches will have additional cover added), and the Project area seeded and mulched.

\\TAM-FS02\TAMPA\FILES\PROJECT\09215600.03\PHASE 1\TASK 1100 - GENERAL\ASH PILOT STUDY\FIG 1 PROPOSED ASH PILOT STUDY AREA AUG 2017.DWG



LEGEND:

- PHASE LIMIT
- RAW ASH STOCKPILE
- PROCESSED ASH STOCKPILE
- BERMS

NOTES:

1. AERIAL PHOTO DATED JANUARY 2016.
2. ALL STORMWATER RUNOFF FROM ASH MUST BE CONTAINED AND TREATED AS LEACHATE.
3. ALL LANDFILL GAS EXTRACTION WELLS AND PIEZOMETERS MUST BE PROTECTED BY BARRIERS

SCS ENGINEERS

FIGURE 1. PROPOSED ASH PILOT STUDY AREA
SOUTHEAST COUNTY LANDFILL
AUGUST 2017