# TECHNICAL EVALUATION
# &
# PRELIMINARY DETERMINATION

## APPLICANT

J-II Investments, Limited Partnership
3974 Calle de Santos
Tallahassee, Florida 32311

Buck Lake Facility
Air Curtain Incinerator
Facility ID No. 0730114

## PROJECT

Project No. 0730114-001-AC
Application for Minor Source Air Construction Permit
Air Curtain Incinerator

## COUNTY

Leon, Florida

## PERMITTING AUTHORITY

Florida Department of Environmental Protection
Air Resource Section
Northwest District Office
160 W. Government Street, Suite 308
Pensacola, Florida 32502-5740

February 22, 2012

## 1. GENERAL PROJECT INFORMATION

### Air Pollution Regulations

Projects at stationary sources with the potential to emit air pollution are subject to the applicable environmental laws specified in Section 403 of the Florida Statutes (F.S.). The statutes authorize the Department of Environmental Protection (Department) to establish regulations regarding air quality as part of the Florida Administrative Code (F.A.C.), which includes the following applicable chapters: 62-4 (Permits); 62-204 (Air Pollution Control – General Provisions); 62-210 (Stationary Sources – General Requirements); 62-212 (Stationary Sources – Preconstruction Review); 62-296 (Stationary Sources - Emission Standards); and 62-297 (Stationary Sources – Emissions Monitoring). Specifically, air construction permits are required pursuant to Rules 62-4, 62-210 and 62-212, F.A.C.

In addition, the U. S. Environmental Protection Agency (EPA) establishes air quality regulations in Title 40 of the Code of Federal Regulations (CFR). Part 60 specifies New Source Performance Standards (NSPS) for numerous industrial categories. Part 61 specifies National Emission Standards for Hazardous Air Pollutants (NESHAP) based on specific pollutants. Part 63 specifies NESHAP based on the Maximum Achievable Control Technology (MACT) for numerous industrial categories. The Department adopts these federal regulations on a quarterly basis in Rule 62-204.800, F.A.C.

### Glossary of Common Terms

Because of the technical nature of the project, the permit contains numerous acronyms and abbreviations, which are defined in Appendix A of this permit.

### Facility Description and Location

J-II Investments, Limited Partnership owns a Yard Trash Transfer Station/Solid Waste Organics Recycling Facility, the "Buck Lake Facility", which is categorized under Standard Industrial Classification Code No. 4953, Refuse Systems. The facility is located in Leon County at Buck Lake Road & Hill N Dale Road in Tallahassee, Florida. The UTM coordinates of the new facility are Zone 16, 775.2 km East, and 3399.6 km North. This site is in an area that is in attainment (or designated as unclassifiable) for all air pollutants subject to state and federal Ambient Air Quality Standards (AAQS).

### Facility Regulatory Categories

- The facility is not a major source of hazardous air pollutants (HAP).
- The facility has no units subject to the acid rain provisions of the Clean Air Act.
- The facility is not a Title V major source of air pollution in accordance with Chapter 213, F.A.C.
- The facility is not a major stationary source in accordance with Rule 62-212.400, F.A.C. for the Prevention of Significant Deterioration (PSD) of Air Quality.

### Project Description

The facility proposes to construct an Air Curtain Incinerator (ACI) at the existing Yard Trash Transfer Station/Solid Waste Organics Recycling Facility. The prefabricated unit will consist of three industrial high-pressure fans mounted so as to direct compressed high velocity air down a carrier pipe to a manifold that re-directs the air over and down into the pit. The manifold will be a welded steel construction equipped with scuffers that peel off the required amount of air down the manifold so as to maintain a uniform discharge rate along the entire length of the trench. Vanes in the discharge nozzle produce discharge ports with high exit velocities. Emissions are controlled by forced air over the burning pit. The ACI will be powered by a used 125 HP 3.0 L Mercedes-Benz diesel engine from 1985.

**Processing Schedule**

| | |
|---|---|
| August 29, 2011 | Received the application for a minor source air pollution construction permit. |
| September 20, 2011 | Requested additional information. |
| December 19, 2011 | Received additional information; application complete. |

## 2. PSD APPLICABILITY

### General PSD Applicability

For areas currently in attainment with the state and federal AAQS or areas otherwise designated as unclassifiable, the Department regulates major stationary sources of air pollution in accordance with Florida's PSD preconstruction review program as defined in Rule 62-212.400, F.A.C. Under preconstruction review, the Department first must determine if a project is subject to the PSD requirements ("PSD applicability review") and, if so, must conduct a PSD preconstruction review. A PSD applicability review is required for projects at new and existing major stationary sources. In addition, proposed projects at existing minor sources are subject to a PSD applicability review to determine whether potential emissions *from the proposed project itself* will exceed the PSD major stationary source thresholds. A facility is considered a major stationary source with respect to PSD if it emits or has the potential to emit:

- 250 tons per year or more of any regulated air pollutant; or
- 100 tons per year or more of any regulated air pollutant and the facility belongs to one of the following 28 PSD-major facility categories: fossil fuel-fired steam electric plants of more than 250 million British thermal units per hour heat input, coal cleaning plants (with thermal dryers), Kraft pulp mills, portland cement plants, primary zinc smelters, iron and steel mill plants, primary aluminum ore reduction plants, primary copper smelters, municipal incinerators capable of charging more than 250 tons of refuse per day, hydrofluoric, sulfuric, and nitric acid plants, petroleum refineries, lime plants, phosphate rock processing plants, coke oven batteries, sulfur recovery plants, carbon black plants (furnace process), primary lead smelters, fuel conversion plants, sintering plants, secondary metal production plants, chemical process plants, fossil fuel boilers (or combinations thereof) totaling more than 250 million British thermal units per hour heat input, petroleum storage and transfer units with a total storage capacity exceeding 300,000 barrels, taconite ore processing plants, glass fiber processing plants and charcoal production plants.

Once it is determined that a project is subject to PSD preconstruction review, the project emissions are compared to the "significant emission rates" defined in Rule 62-210.200, F.A.C. for the following pollutants: carbon monoxide (CO); nitrogen oxides ($NO_X$); sulfur dioxide ($SO_2$); particulate matter (PM); particulate matter with a mean particle diameter of 10 microns or less ($PM_{10}$); volatile organic compounds (VOC); lead (Pb); fluorides (Fl); sulfuric acid mist (SAM); hydrogen sulfide ($H_2S$); total reduced sulfur (TRS), including $H_2S$; reduced sulfur compounds, including $H_2S$; municipal waste combustor organics measured as total tetra- through octa-chlorinated dibenzo-p-dioxins and dibenzofurans; municipal waste combustor metals measured as particulate matter; municipal waste combustor acid gases measured as $SO_2$ and hydrogen chloride (HCl); municipal solid waste landfills emissions measured as non-methane organic compounds (NMOC); and mercury (Hg). In addition, significant emissions rate also means any emissions rate or any net emissions increase associated with a major stationary source or major modification which would construct within 10 kilometers of a Class I area and have an impact on such area equal to or greater than 1 $\mu g/m^3$, 24-hour average.

If the potential emission exceeds the defined significant emissions rate of a PSD pollutant, the project is considered "significant" for the pollutant and the applicant must employ the Best Available Control Technology (BACT) to minimize the emissions and evaluate the air quality impacts. Although a facility or project may be *major* with respect to PSD for only one regulated pollutant, it may be required to install BACT controls for several "significant" regulated pollutants.

**PSD Applicability for Project**

As provided in the application, the following table summarizes potential emissions and PSD applicability for the project.

Table A. Potential Emissions (Tons/Year) and PSD Applicability

| Pollutant (TPY) | Project Potential Emissions | Contempo-raneous Emissions | Post Project Potential Emissions | Total Emissions | Significant Emissions Rate | Subject to PSD |
|---|---|---|---|---|---|---|
| CO | 0.17 | | | 0.17 | 100 | NO |
| $NO_X$ | 5.8 | | | 5.8 | 40 | NO |
| $PM/PM_{10}$ | 16.3 | | | 16.3 | 25/15 | NO |
| $SO_2$ | 0.13 | | | 0.13 | 40 | NO |
| VOC | | | | | 40 | NO |

This facility is not considered a major stationary source with respect to PSD because existing potential emissions do not exceed the 250 tons per year threshold and because the facility is not a listed major stationary source in the "List of 28" so the 100 tons per year threshold does not apply. The proposed project itself is not subject to PSD review because the potential emissions increase alone from the project itself do not equal or exceed the PSD major stationary source thresholds for this type of facility. Based on these facts it is determined that the project is not subject to PSD preconstruction review.

## 3. APPLICATION REVIEW

### Application Fee

This is an AC1D ($1,000 fee) source more than 5 TPY but less than 25 TPY.

### Discussion of Emissions

The estimated emissions for PM and NOx are 16.3 tons per year and 5.8 tons per year, respectively. These emissions are kept at a low level because the ACI operation is limited to 416 hours per year.

**Air Curtain Incineration**

PM TPY = (13.0 lbs/ton)(6 tons/hr)(416 hrs/yr)(1 ton/2000 lbs) = 16.2 TPY, AP42 Table 2.1-12
NOx TPY = (4.0 lbs/ton)(6 tons/hr)(416 hrs/yr)(1 ton/2000 lbs) = 4.99 TPY, AP42 Table 2.1-12
SO2 TPY = (0.1 lbs/ton)(6 tons/hr)(416 hrs/yr)(1 ton/2000 lbs) = 0.125 TPY, AP42 Table 2.1-12
CO TPY = neg

**125 Hp diesel engine**

PM TPY = (125 hp)(2.20 E-03 lbs/hp-hr)(416 hrs/yr)(1 ton/2000 lbs) = 0.06 TPY, AP42 Table 3.3-1
NOx TPY = (125 hp)(0.031 lbs/hp-hr)(416 hrs/yr)(1 ton/2000 lbs) = 0.81 TPY, AP42 Table 3.3-1
SOx TPY = (125 hp)(2.05 E-03 lbs/hp-hr)(416 hrs/yr)(1 ton/2000 lbs) = 0.05 TPY, AP42 Table 3.3-1
CO TPY = (125 hp)(6.68 E-03 lbs/hp-hr)(416 hrs/yr)(1 ton/2000 lbs) = 0.17 TPY, AP42 Table 3.3-1

### State Requirements

This source is regulated in accordance with Rule 62-296.401(7), F.A.C., which includes both emissions limits and operational requirements.

### Federal NSPS Provisions

This source is subject to the requirements in 40 CFR 60, subpart CCCC.

### Federal NESHAP Provisions

This engine is subject to 40 CFR 63, subpart ZZZZ - NESHAP for Stationary Reciprocating Internal Combustion Engines, adopted and incorporated by reference in Rule 62-204.800(11)(b)82, F.A.C., with a compliance date of May 3, 2013.

### Other Draft Permit Requirements

Initial VE testing (60 minutes, EPA method 9) and annually; record keeping of tons of materials burned and hours of operation.

## 4. PRELIMINARY DETERMINATION

The Department makes a preliminary determination that the proposed project will comply with all applicable state and federal air pollution regulations as conditioned by the draft permit. This determination is based on a technical review of the complete application, reasonable assurances provided by the applicant, and the conditions specified in the draft permit. Angelia Jackson is the project engineer responsible for reviewing the application and drafting the permit. Additional details of this analysis may be obtained by contacting the project engineer at 850/595-0598 or angelia.jackson@dep.state.fl.us.