TECHNICAL EVALUATION

APPLICANT

University of Florida
Animal Resource Department
Post Office Box 100006
Gainesville, Florida 32610
Progress Park Facility
Facility ID No. 0010072

PROJECT

Project No. 0010072-006-AO
Permit Revision
Simonds Biological Waste Incinerator

COUNTY

Alachua, Florida

PERMITTING AUTHORITY

Florida Department of Environmental Protection
Northeast District Office
Waste and Air Resource Management
8800 Baymeadows Way West, Suite 100
Jacksonville, Florida 32256

COMPLIANCE AUTHORITY

Florida Department of Environmental Protection
Northeast District Office
Compliance Assurance
8800 Baymeadows Way West, Suite 100
Jacksonville, Florida 32256

August 18, 2014

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 (FS). 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); 62-213 (Operation Permits for Major Sources of Air Pollution); 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, FAC.

Facility Description and Location

The University of Florida Progress Park Facility operates a Simonds, dual chambered natural gas-fired biological waste incinerator (Model 604L) which is designed to burn pathological, animal waste. The maximum design capacity of this emissions unit is 600 pounds per hour. (Certification of Completion of Construction dated June 26, 1991) The incinerator consists of primary and secondary (afterburner) chambers, each fired on natural gas. The incinerator utilizes four primary Eclipse 936SIB-G chamber burners (1 MMBtu/hr each), and one ThermAir TA200 second stage burner (2.071 MMBtu/hr). Emissions are controlled by the afterburner, which maintains a minimum secondary chamber combustion zone temperature of 1800 degrees Fahrenheit prior to and during combustion of material in the primary chamber. The secondary chamber is designed to insure one-second residence time at a gas temperature of 1800 degrees Fahrenheit (F), and is equipped with a continuous temperature monitor.

The existing facility Standard Industrial Classification Code (SIC) (8733) is classified as a synthetic non-title V source of air pollution because the potential emissions of regulated air pollutants are less than 100 tons per year, and individual and total hazardous air pollutants are less than 10 and 25 tons per year, respectively in accordance with Chapter 62-210, FAC. The facility has restricted hours of operation so that potential HCl emissions are below the major source threshold. The facility is located at Research Drive and S.E. 12th Street, in Alachua County. UTM Coordinates: Zone 17, 355.3 km East and 3295.5 km North.

2. RULE APPLICABILITY AND TECHNICAL EVALUATION

I. State Requirements

The existing facility will continue to be subject to the requirements of Rule 62-296.401(4) F.A.C. for Biological Waste Incinerators.

II. Technical Evaluation & Limits

On January 17th, 2014, the Department issued construction permit 0010072-005-AC which authorized:

1). The installation of a Program Logic Controller (PLC) to the existing Simonds 604L Biological Waste Incinerator.
2). Establish a restriction of 495 lbs/hr. maximum incinerator operating rate (applicant request).
3). Authorize a change to the PM emissions limiting standards from 0.030 grains per dry standard cubic feet of flue gas corrected to 7% O_2 (Rule 62-296.401(4) (b) 3a. F.A.C.), to 0.100 grains per dry standard cubic feet of flue gas corrected to 7% O_2 (Rule 62-296.401(4) (b) 2a. F.A.C).

Only 100% pathological wastes and, if applicable, the bedding and the remains associated with the animals placed in leak-proof containers, are incinerated. Chlorinated materials shall not be incinerated.

Installation of the PLC placed a physical restriction on the existing Simonds 604L Biological Waste Incinerator to an operating rate of no more than 495 lbs/hr of pathological animal waste (Permit No. 0010072-005-AC).

Revision to the operation permit are as follows:

{Permitting Note: Strikethroughs indicate items deleted and red font double underlined indicates items added.}

SECTION 3 EMISSIONS UNIT SPECIFIC CONDITIONS;

PERFORMANCE RESTRICTIONS

2. ~~Maximum Incinerator~~ Operating ~~Rate~~ Capacity. The maximum throughput rate shall not exceed 495 lbs/hr. of pathological animal waste. ~~maximum incinerator operating rate shall be limited to no more than 546.7 pounds per hour[2] of pathological and animal waste based on the compliance test conducted August 23, 2012~~ (see **Specific Condition No. ~~19~~** 2). Chlorinated materials shall not be incinerated.
The design incinerator operating rate (design permitted capacity) of this emissions unit is 600 pounds per hour[1].

[1] The design incinerator operating rate is in accordance with the Certification of Completion of Construction dated June 26, 1991. ~~The maximum incinerator operating rate is limited based on the most recent compliance test in accordance with Rule 62-297.310(2), F.A.C. The facility may increase the incinerator operating rate up to the design incinerator operating rate pursuant to this rule (see **Specific Condition No. 19**). Once the incinerator is operated at the 600 pounds per hour design incinerator operating rate, the owner or operator shall quarter the carcasses so that no more than 600 pounds is charged into the incinerator at any time over any one-hour period of time should a total animal charge weigh more than 600 pounds.~~

~~[2] Equals 110 percent of the 497 pound per hour incinerator operation rate during the August 23, 2012 compliance test.~~

[Rules 62-4.070(3), 62-4.160(2) and 62-210.200(PTE), F.A.C.; Construction Permit No. AC01-168936; Construction Permit No. 0010072-005-AC Applicant ~~Request in Additional Information Response received 02/01/08;~~ Certification of Completion of Construction dated 06/26/91]

~~11.~~ 3. Particulate Matter. ~~For any unit with a capacity greater than 500 pounds per hour, but less than or equal to 2,000 pounds per hour:~~ Particulate matter emissions shall not exceed ~~0.030~~ 0.100 grains per dry standard cubic foot of flue gas, corrected to 7% O_2.

[Rule 62-296.401(4) (b) ~~32.a.~~, F.A.C.]

~~12.~~ 5.**Hydrochloric Acid.** Hydrochloric acid (HCl) emissions shall not exceed 4.0 pounds per hour; ~~or shall be reduced by 90% by weight on an hourly average basis.~~

[Rule 62-296.401(4)(b)~~3~~2.b., F.A.C.]

TEST METHOD(S) AND PERFORMANCE TEST(S)

~~20~~ 7. **Particulate Matter.** The reference test method for particulate emissions shall be EPA Method 5 or 26A. The minimum sample volume shall be thirty (30) dry standard cubic feet. This compliance test shall be conducted on ~~an annual basis~~, ~~at least once each federal fiscal year (October 1 – September 30)~~ prior to submitting the application for a renewal air operation permit.

[Rules 62-296.401(4)(d)~~4~~5., and 62-296.401(4)(e)~~2~~1.b., F.A.C.]

~~21~~ 8. **Hydrochloric Acid.** The reference test method for hydrochloric acid shall be EPA Method 26 or 26A. This compliance test shall be conducted ~~on an annual basis, at least once each federal fiscal year (October 1 – September 30)~~ prior to submitting the application for a renewal air operation permit.

[Rules 62-296.401(4)(d)5.,~~62-296.401(4)(e)2., and 62-296.401(4)(e)2.b., F.A.C.~~ 62-296.401(4)(e)1.b., F.A.C.]

~~23. **Oxygen.** The reference test method for carbon monoxide shall be EPA Method 3 or 3A.~~

~~[Rule 62-296.401(4)(d)3., F.A.C.]~~

~~24.~~ 10 **Visible Emissions.** The reference test method for visible emissions shall be EPA Method 9. The test shall be conducted by an observer certified in accordance with the requirements of Rule 62-297.320, F.A.C. – Standards for Persons Engaged in Visible Emissions Observations. This compliance test shall be conducted ~~on an annual basis, at least once each federal fiscal year (October 1 – September 30).~~ prior to submitting the application for an operation permit and annually thereafter.

[Rules 62-296.401(4)(d)1., 62-296.401(4)(e)2.a.]

EMISSIONS MONITORING

~~18. **Continuous Emissions Monitor (CEM) – Oxygen.** The owner or operator shall install, operate, and maintain, in accordance with the manufacturer's instructions, continuous monitoring equipment to record oxygen.~~

~~[Rules 62-296.401(4)(f) and (f)1.b., F.A.C.]~~

III. Performance Test for Compliance.

On August 30, 2013, the facility conducted a source test for PM, VE and HCL emissions EPA Methods 1-4, 9 and 26A, report No. 13015-ST, to demonstrate compliance with permit No. 0010072-004-AO. The facility met compliance with both the 5 % opacity standard for VE and the 4.0 lbs/hr. HCL limit. However compliance with the PM standard was not met. The facility tested at .046 gr/dscf for particulate matter. The average allowable emissions rate for PM base on Rule 62-296.401(4)3.a. F.A.C. is 0.030 gr/dscf.

Construction permit No. 0010072-005-AC issued on January 17th, 2014 placed a physical restriction on the Simonds 604L Biological Waste Incinerator by the installation of the PLC. The PLC restricted operation of the unit to a rate of no more than 495 lbs/hr of pathological animal waste. Particulate matter emissions based on Rule 62-296.401(4)(b)2.a., F.A.C. shall not exceed 0.100 grains per dry standard cubic foot of flue gas, corrected to 7% O_2. (Permit No. 0010072-005-AC)

As part of the regulated community cost savings initiative the Department's Compliance Assurance section authorized the use of the August 30th, 2013 test as acceptable to demonstrate compliance with the new conditions of Permit No. 1010072-005-AC. The facility is currently in compliance with all applicable emissions limiting standards as stated by the permit.

3. CONCLUSION

Based on information provided by the applicant, the Department has reasonable assurance that the operation of the biological waste incinerator will comply with all applicable, state and air pollution regulations as conditioned by the 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 permit. Yasmin K. Enriquez is the project specialist responsible for reviewing the application and drafting the permit. Additional details of this analysis may be obtained by contacting the project specialist at the Florida Department of Environmental Protection, Northeast District Office, Waste and Air Resource Management Program, 8800 Baymeadows Way West, Suite 100, Jacksonville, FL 32256, Phone: 904-256-1700.