STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

SOUTHWEST DISTRICT
7601 HIGHWAY 301 NORTH
TAMPA, FLORIDA 33610-9844

APPLICATION TO OPERATE/CONSTRUCT AIR POLLUTION SOURCES

SOURCE TYPE: McKay Bay Refuse to Energy Facility [ ] New[1] [X] Existing[1]

APPLICATION TYPE: [X] Construction [ ] Operation [X] Modification

COMPANY NAME: City of Tampa COUNTY: Hillsborough

Identify the specific emission point source(s) addressed in this application (i.e. Lime Kiln No. 4 with Venturi Scrubber; Peaking Unit No. 2, Gas Fired) flyash silo baghouse

SOURCE LOCATION: Street 107 N. 34th St. City Tampa

UTM: East 360.0 km North 3091.9 km

Latitude 27° 56' 51"N Longitude 82° 25' 14"W

APPLICANT NAME AND TITLE: Nancy McCann - Urban Environmental Coordinator

APPLICANT ADDRESS: Office of Environmental Coordination; City Hall Plaza, 5N Tampa, FL 33602

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative* of City of Tampa

I certify that the statements made in this application for a modification to construction permit are true, correct and complete to the best of my knowledge and belief. Further, I agree to maintain and operate the pollution control source and pollution control facilities in such a manner as to comply with the provision of Chapter 403, Florida Statutes, and all the rules and regulations of the department and revisions thereof. I also understand that a permit, if granted by the department, will be non-transferable and I will promptly notify the department upon sale or legal transfer of the permitted establishment.

*Attach letter of authorization

Signed: Nancy McCann

Nancy McCann, Urban Environmental Coordinator
Name and Title (Please Type)

Date: 7/23/86 Telephone No. (813) 223-8071

B. PROFESSIONAL ENGINEER REGISTERED IN FLORIDA (where required by Chapter 471, F.S.)

This is to certify that the engineering features of this pollution control project have been designed/examined by me and found to be in conformity with modern engineering principles applicable to the treatment and disposal of pollutants characterized in the permit application. There is reasonable assurance, in my professional judgment, that

[1] See Florida Administrative Code Rule 17-2.100(57) and (104)

the pollution control facilities, when properly maintained and operated, will discharge an effluent that complies with all applicable statutes of the State of Florida and the rules and regulations of the department. It is also agreed that the undersigned will furnish, if authorized by the owner, the applicant a set of instructions for the proper maintenance and operation of the pollution control facilities and, if applicable, pollution sources.

Signed Robert J Nespechal

Robert J. Nespechal
Name (Please Type)

Vølund USA Ltd.
Company Name (Please Type)

900 Jorie Blvd., Suite 222, Oak Brook, IL 60521
Mailing Address (Please Type)

Florida Registration No. 31287 Date: July 23, 1985 Telephone No. 312/655-1490

SECTION II: GENERAL PROJECT INFORMATION

A. Describe the nature and extent of the project. Refer to pollution control equipment, and expected improvements in source performance as a result of installation. State whether the project will result in full compliance. Attach additional sheet if necessary.

Fly ash collected from the electrostatic precipitators is transported via a pressurized pneumatic conveying system to an ash storage silo. Conveying air is vented from the silo to atmosphere through a bag filter located on top of the silo. Ash from the silo will be loaded into trucks for subsequent disposal in the City's designated sanitary residue disposal site. The expected improvements to the ash storage silo performance will be improved containment of ash in the silo for proper disposal. The discharge of particulate to the atmosphere will be in compliance with the emission limitations for particulate contained in the City of Tampa's Construction Permit AC29-47277.

B. Schedule of project covered in this application (Construction Permit Application Only)

Start of Construction November '84 Completion of Construction December '84

C. Costs of pollution control system(s): (Note: Show breakdown of estimated costs only for individual components/units of the project serving pollution control purposes. Information on actual costs shall be furnished with the application for operation permit.)

Bag Filter: $7,150.00

D. Indicate any previous DER permits, orders and notices associated with the emission point, including permit issuance and expiration dates.

City of Tampa Construction Permit AC29-47277

E. Requested permitted equipment operating time: hrs/day 24 ; days/wk 7 ; wks/yr 52 ;

if power plant, hrs/yr_____; if seasonal, describe:_____

F. If this is a new source or major modification, answer the following questions. (Yes or No)

1. Is this source in a non-attainment area for a particular pollutant? Yes

   a. If yes, has "offset" been applied? Yes

   b. If yes, has "Lowest Achievable Emission Rate" been applied? Yes

   c. If yes, list non-attainment pollutants. Particulate, ozone

2. Does best available control technology (BACT) apply to this source? If yes, see Section VI. No

3. Does the State "Prevention of Significant Deterioriation" (PSD) requirement apply to this source? If yes, see Sections VI and VII. No

4. Do "Standards of Performance for New Stationary Sources" (NSPS) apply to this source? Yes

5. Do "National Emission Standards for Hazardous Air Pollutants" (NESHAP) apply to this source? No

H. Do "Reasonably Available Control Technology" (RACT) requirements apply to this source? No

   a. If yes, for what pollutants?_____

   b. If yes, in addition to the information required in this form, any information requested in Rule 17-2.650 must be submitted.

Attach all supportive information related to any answer of "Yes". Attach any justification for any answer of "No" that might be considered questionable.

1.) City of Tampa Construction Permit AC29-47277

2.) Florida Department of Environmental Regulation, Bureau of Air Quality Management, Central Air permitting Technical Evaluation and Preliminary Determination for Permit AC29-47277.

SECTION III: AIR POLLUTION SOURCES & CONTROL DEVICES (Other than Incinerators)

A. Raw Materials and Chemicals Used in your Process, if applicable:

Description	Contaminants		Utilization Rate - lbs/hr	Relate to Flow Diagram
	Type	% Wt		
Not Applicable				

B. Process Rate, if applicable: (See Section V, Item 1)

1. Total Process Input Rate (lbs/hr): 7,640 (includes entrained fly ash)

2. Product Weight (lbs/hr): 72.3

C. Airborne Contaminants Emitted: (Information in this table must be submitted for each emission point, use additional sheets as necessary)

Name of Contaminant	Emission[1]		Allowed[2] Emission Rate per Rule 17-2	Allowable[3] Emission lbs/hr	Potential[4] Emission		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr			lbs/yr	T/yr	
Fly Ash	0.361	1.58	0.025 gr/dscf	30.4	633,423	316.7	Encl.(1)

[1]See Section V, Item 2.

[2]Reference applicable emission standards and units (e.g. Rule 17-2.600(5)(b)2. Table II, E. (1) - 0.1 pounds per million BTU heat input) Per Construction Permit AC29-47277

[3]Calculated from operating rate and applicable standard. Per Construction Permit AC29-47277

[4]Emission, if source operated without control (See Section V, Item 3).

D. Control Devices: (See Section V, Item 4)

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles Size Collected (in microns) (If applicable)	Basis for Efficiency (Section V Item 5)
FLEX KLEEN BVBC-36(IIG)/D010996	Fly Ash	99.5%	0.5 And Greater	Lab tests on similar devices

E. Fuels

Type (Be Specific)	Consumption*		Maximum Heat Input (MMBTU/hr)
	avg/hr	max./hr	
Not Applicable			

*Units: Natural Gas--MMCF/hr; Fuel Oils--gallons/hr; Coal, wood, refuse, other--lbs/hr.

Fuel Analysis:

Percent Sulfur: _____ Percent Ash: _____

Density: _____ lbs/gal Typical Percent Nitrogen: _____

Heat Capacity: _____ BTU/lb _____ BTU/gal

Other Fuel Contaminants (which may cause air pollution): _____

F. If applicable, indicate the percent of fuel used for space heating.

Annual Average _____ Maximum _____

G. Indicate liquid or solid wastes generated and method of disposal.

H. Emission ~~Stack~~ Silo Geometry and Flow Characteristics (Provide data for each stack):

~~Stack~~ Silo Height: 57 ft. ~~Stack~~ Silo Diameter: 20 ft.

~~Gas~~ Air Flow Rate: 2109 ACFM N/A DSCFM Gas Exit Temperature: Not Applicable °F.

Water Vapor Content: Not Applicable % Velocity: Not Applicable FPS

SECTION IV: INCINERATOR INFORMATION

Type of Waste	Type 0 (Plastics)	Type I (Rubbish)	Type II (Refuse)	Type III (Garbage)	Type IV (Pathological)	Type V (Liq.& Gas By-prod.)	Type VI (Solid By-prod.)
Actual lb/hr Incinerated							
Uncontrolled (lbs/hr)							

Description of Waste _____

Total Weight Incinerated (lbs/hr) _____ Design Capacity (lbs/hr) _____

Approximate Number of Hours of Operation per day _____ day/wk _____ wks/yr. _____

Manufacturer _____

Date Constructed _____ Model No. _____

	Volume $(ft)^3$	Heat Release (BTU/hr)	Fuel		Temperature (°F)
			Type	BTU/hr	
Primary Chamber					
Secondary Chamber					

Stack Height: _____ ft. Stack Diamter: _____ Stack Temp. _____

Gas Flow Rate: _____ ACFM _____ DSCFM* Velocity: _____ FPS

*If 50 or more tons per day design capacity, submit the emissions rate in grains per standard cubic foot dry gas corrected to 50% excess air.

Type of pollution control device: [ ] Cyclone [ ] Wet Scrubber [ ] Afterburner

[ ] Other (specify) _____

Brief description of operating characteristics of control devices: _____

_____

_____

_____

_____

Ultimate disposal of any effluent other than that emitted from the stack (scrubber water, ash, etc.):

_____

_____

_____

_____

NOTE: Items 2, 3, 4, 6, 7, 8, and 10 in Section V must be included where applicable.

SECTION V: SUPPLEMENTAL REQUIREMENTS

Please provide the following supplements where required for this application.

1. Total process input rate and product weight -- show derivation [Rule 17-2.100(127)]

2. To a construction application, attach basis of emission estimate (e.g., design calculations, design drawings, pertinent manufacturer's test data, etc.) and attach proposed methods (e.g., FR Part 60 Methods 1, 2, 3, 4, 5) to show proof of compliance with applicable standards. To an operation application, attach test results or methods used to show proof of compliance. Information provided when applying for an operation permit from a construction permit shall be indicative of the time at which the test was made.

3. Attach basis of potential discharge (e.g., emission factor, that is, AP42 test).

4. With construction permit application, include design details for all air pollution control systems (e.g., for baghouse include cloth to air ratio; for scrubber include cross-section sketch, design pressure drop, etc.)

5. With construction permit application, attach derivation of control device(s) efficiency. Include test or design data. Items 2, 3 and 5 should be consistent: actual emissions = potential (1-efficiency).

6. An 8 1/2" x 11" flow diagram which will, without revealing trade secrets, identify the individual operations and/or processes. Indicate where raw materials enter, where solid and liquid waste exit, where gaseous emissions and/or airborne particles are evolved and where finished products are obtained.

7. An 8 1/2" x 11" plot plan showing the location of the establishment, and points of airborne emissions, in relation to the surrounding area, residences and other permanent structures and roadways (Example: Copy of relevant portion of USGS topographic map).

8. An 8 1/2" x 11" plot plan of facility showing the location of manufacturing processes and outlets for airborne emissions. Relate all flows to the flow diagram.

9. The appropriate application fee in accordance with Rule 17-4.05. The check should be made payable to the Department of Environmental Regulation.

10. With an application for operation permit, attach a Certificate of Completion of Construction indicating that the source was constructed as shown in the construction permit.

SECTION VI: BEST AVAILABLE CONTROL TECHNOLOGY

A. Are standards of performance for new stationary sources pursuant to 40 C.F.R. Part 60 applicable to the source?

[XX] Yes [ ] No

Contaminant	Rate or Concentration
Particulate	0.08 gr/dscf @ 12% CO_2

B. Has EPA declared the best available control technology for this class of sources (If yes, attach copy)

[ ] Yes [XX] No

Contaminant	Rate or Concentration

C. What emission levels do you propose as best available control technology?

Contaminant	Rate or Concentration
Particulate	0.02 grains/acf

D. Describe the existing control and treatment technology (if any).

1. Control Device/System: Pulse jet Fabric Filter
2. Operating Principles: Bag filter with back jet pulsing for cleaning bags
3. Efficiency:* 99.5%
4. Capital Costs: $ 7,150.00

*Explain method of determining Lab tests

5. Useful Life: 40 years with occasional bag replacement

6. Operating Costs: Minimal

7. Energy: Minimal

8. Maintenance Cost: $ 1,820/yr

9. Emissions:

Contaminant	Rate or Concentration
Particulate	0.02 Grains/acf

10. Stack Parameters

a. Height: ft.

b. Diameter: ft.

c. Flow Rate: ACFM

d. Temperature: °F.

e. Velocity: FPS

E. Describe the control and treatment technology available (As many types as applicable, use additional pages if necessary). No other method of filtering particulate from storage silo.

1.

a. Control Device:

b. Operating Principles:

c. Efficiency:[1]

d. Capital Cost:

e. Useful Life:

f. Operating Cost:

g. Energy:[2]

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

2.

a. Control Device:

b. Operating Principles:

c. Efficiency:[1]

d. Capital Cost:

e. Useful Life:

f. Operating Cost:

g. Energy:[2]

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

[1]Explain method of determining efficiency.
[2]Energy to be reported in units of electrical power - KWH design rate.

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

3.

a. Control Device: b. Operating Principles:

c. Efficiency:[1] d. Capital Cost:

e. Useful Life: f. Operating Cost:

g. Energy:[2] h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

4.

a. Control Device: b. Operating Principles:

c. Efficiency:[1] d. Capital Costs:

e. Useful Life: f. Operating Cost:

g. Energy:[2] h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

F. Describe the control technology selected:

1. Control Device: Pulse jet bag filter 2. Efficiency:[1] 99.5% Lab tests

3. Capital Cost: $ 7,150.00 4. Useful Life: 40 years with occasional bag replacement

5. Operating Cost: Minimal 6. Energy:[2] Minimal

7. Maintenance Cost: $1,820/year 8. Manufacturer: FLEX_KLEEN

9. Other locations where employed on similar processes:

a. (1) Company: General Foods

(2) Mailing Address: W. North St.

(3) City: Dover (4) State: Delaware

[1]Explain method of determining efficiency.
[2]Energy to be reported in units of electrical power - KWH design rate.

(5) ~~Environmental Manager~~ Project Engineer: Jim Schwartz

(6) Telephone No.: 302/734-0373

(7) Emissions:[1]

Contaminant	Rate or Concentration
Coal Fly Ash Particulate	0.02 Grains/ACF Max.

(8) Process Rate:[1] 8000 lb/hr

b. (1) Company: Carolina Power and Light

(2) Mailing Address: 411 Fayetteville St.

(3) City: Raleigh (4) State: NC 27602

(5) ~~Environmental Manager~~ Project Engineer: Bob McCullum

(6) Telephone No.: 919/836-8266

(7) Emissions:[1]

Contaminant	Rate or Concentration
Coal Fly Ash Particulate	

(8) Process Rate:[1] 50 tons per hour

10. Reason for selection and description of systems:

[1]Applicant must provide this information when available. Should this information not be available, applicant must state the reason(s) why.

SECTION VII - PREVENTION OF SIGNIFICANT DETERIORATION

A. Company Monitored Data

1. _____no. sites _____ TSP _____( ) SO^2* _____ Wind spd/dir

Period of Monitoring ____/____/____ to ____/____/____
month day year month day year

Other data recorded _____

Attach all data or statistical summaries to this application.

*Specify bubbler (B) or continuous (C).

2. Instrumentation, Field and Laboratory

a. Was instrumentation EPA referenced or its equivalent? [ ] Yes [ ] No

b. Was instrumentation calibrated in accordance with Department procedures?

[ ] Yes [ ] No [ ] Unknown

B. Meteorological Data Used for Air Quality Modeling

1. _____ Year(s) of data from _____/_____/_____ to _____/_____/_____
month day year month day year

2. Surface data obtained from (location)_____

3. Upper air (mixing height) data obtained from (location)_____

4. Stability wind rose (STAR) data obtained from (location)_____

C. Computer Models Used

1. _____ Modified? If yes, attach description.

2. _____ Modified? If yes, attach description.

3. _____ Modified? If yes, attach description.

4. _____ Modified? If yes, attach description.

Attach copies of all final model runs showing input data, receptor locations, and principle output tables.

D. Applicants Maximum Allowable Emission Data

Pollutant	Emission Rate	
TSP	_____	grams/sec
SO^2	_____	grams/sec

E. Emission Data Used in Modeling

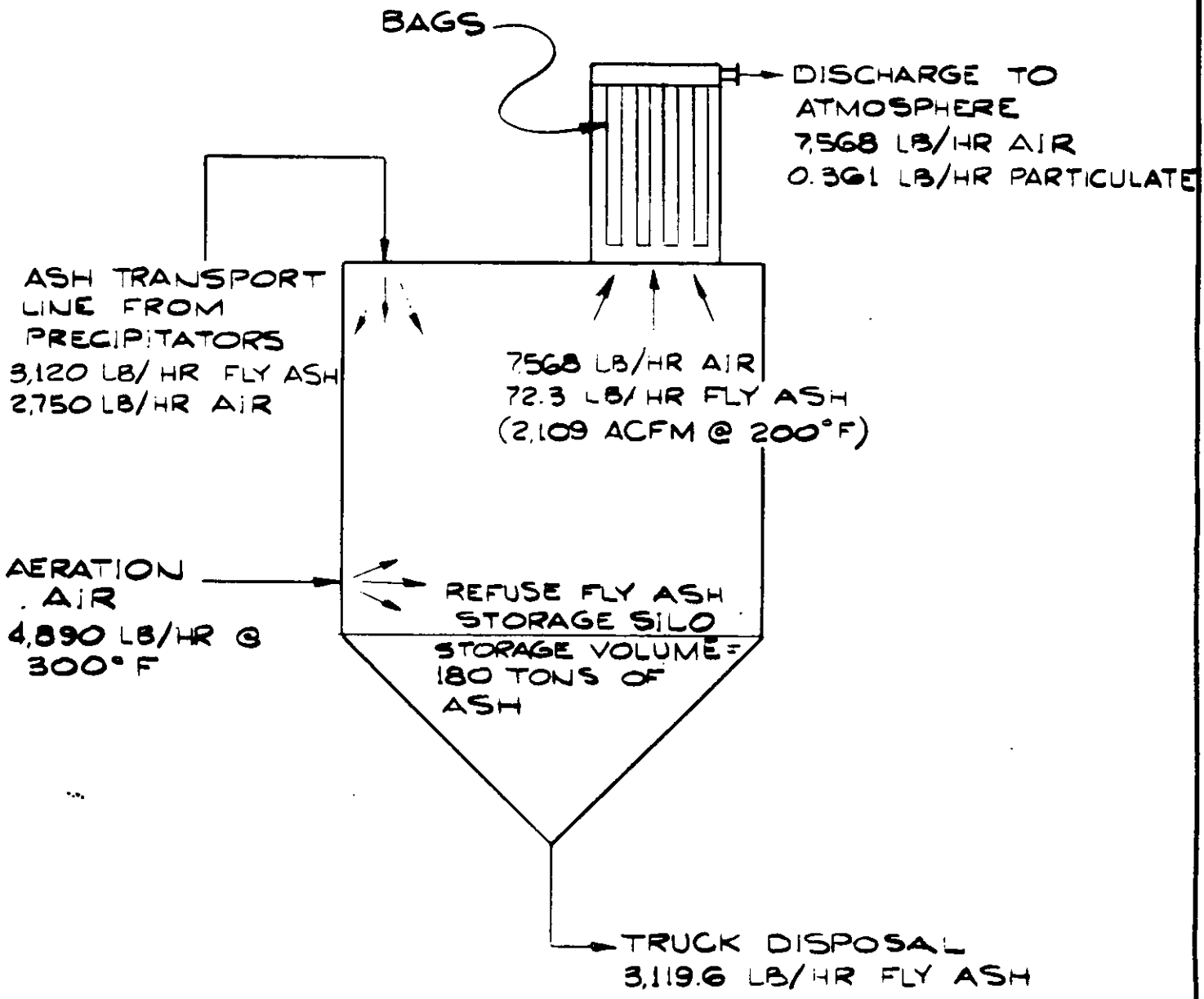
Attach list of emission sources. Emission data required is source name, description of point source (on NEDS point number), UTM coordinates, stack data, allowable emissions, and normal operating time.

F. Attach all other information supportive to the PSD review.

G. Discuss the social and economic impact of the selected technology versus other applicable technologies (i.e., jobs, payroll, production, taxes, energy, etc.). Include assessment of the environmental impact of the sources.

H. Attach scientific, engineering, and technical material, reports, publications, journals, and other competent relevant information describing the theory and application of the requested best available control technology.

BAG FILTER - 457 SQ. FT.
OF BAG SURFACE



REV.	DESCRIPTION	ENG.

DRAWING RELEASE RECORD

DRAWN 7/24/85 DATE
CHECKED DATE
ENGINEER DATE
APPROVED DATE

PROJECT NUMBER 78100

SCALE ~

PROJECT TITLE: McKAY BAY REFUSE TO ENERGY PROJ. TAMPA, FL.

SHEET TITLE: FLOW DIAGRAM FOR FLY ASH SILO VENT FILTER

Volund
Volund USA Ltd.
OAK BROOK, ILLINOIS

DRAWING NO. ENCLOSURE 1

REV.

Enclosure 2
July 23, 1985

Vølund
Vølund USA Ltd

BASIS OF POTENTIAL DISCHARGE

1. Uncontrolled emmission rate is based on having no baghouse filter with a 4 grains/acf particulate loading in the air to be vented to the atmosphere.

Vented air to atmosphere:	2,109 acfm
Particulate loading:	4 grains/acf
Uncontrolled emission:	$2{,}109 \frac{ft^3}{Min} \times \frac{4 \text{ grains}}{ft^3} \times \frac{LB}{7000 \text{ grains}} \times \frac{60 \text{ min}}{hr} \times \frac{8{,}760 \text{ hr}}{year}$: 633,423 lb/yr

TAMPAENV