ANHEUSER-BUSCH COMPANIES

September 12, 1989

Mr. C. H. Fancy
Florida Department of Environmental
Regulation
Air Pollution Control
2600 Blair Stone Road
Tallahassee, Florida 32301

Dear Mr. Fancy:

Enclosed please find four copies of an application to construct an anaerobic treatment facility at the Anheuser-Busch, Inc. brewery in Jacksonville. This facility will treat brewery process wastewater. The process generates a byproduct gas that is proposed to be combusted in fuel-fired sources at the brewery. The gas will be fired in the existing boilers, the existing cogeneration system's duct burner, a new boiler for wastewater temperature control, and/or a redundant flare system. The treatment facility will also include a wet scrubber to prevent process area odors.

A check for $2200.00 is enclosed to cover the application fee. Please don't hesitate to call me at (314) 577-4162 with any questions on this project.

Sincerely,

ANHEUSER-BUSCH COMPANIES, INC.

Dean E. Pusch
Sr. Environmental Engineer

DEP:cd

Enclosure

Anheuser-Busch Companies, Inc
Executive Offices
One Busch Place
St. Louis, MO U S A. 63118-1852
Telex 447 117 ANBUSCH STL

APPLICATION FOR PERMITS TO CONSTRUCT AN ANAEROBIC TREATMENT FACILITY AT THE ANHEUSER-BUSCH, INC. JACKSONVILLE BREWERY

Submitted to:

FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION

August 15, 1989

PROCESS DESCRIPTION

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An anaerobic pretreatment facility has been proposed for the Anheuser-Busch Brewery in Jacksonville, Florida. This system will treat brewery process wastewater and discharge effluent to the City's treatment plant. The anaerobic process generates a byproduct combustible gas that Anheuser-Busch proposes to combust in fuel-fired sources at the brewery. The pretreatment facility will also include a chemical wet scrubber to prevent the release of odors from the process area.

Biogas Combustion

The intent is to utilize the maximum quantity of biogas to offset fuel consumption in existing combustion sources. These include the brewery boilers, currently permitted to fire natural gas and fuel oil, and the cogeneration system duct burner which is permitted to fire natural gas. No biogas will be used to fire the cogeneration system turbine.

Preliminary design indicates that the most feasible approach is to tie the biogas into the natural gas feed line to these sources. As biogas contains less methane than natural gas, combustion controls will be needed to accept the low-BTU fuel mixture. Each of these sources may burn the total volume of gas at any time.

A new boiler, capable of firing 12 million BTU's per hour of biogas or natural gas, will be required to generate steam which will be utilized to maintain proper wastewater temperature.

Under certain conditions such as excess biogas production, insufficient steam demand, and mechanical malfunction, it may be necessary to direct biogas flow to a flare. Based upon data from similar treatment installations, the amount of biogas flared may be 10-20% of that produced. However, on a short-term basis, all of the biogas produced may need to be flared. The flare system will be redundant and incorporate auto-ignition.

Biogas Storage

Detailed design of a strategy for biogas utilization in the various combustion sources has not been completed. The current conceptual design, as stated above, involves injection of biogas as produced into the natural gas feeder, thus creating a blend of the two gases. There is a

small gasholder providing several minutes detention time for biogas, which acts both as a surge and back-pressure vessel. In this case, the maximum hourly combustion of biogas equals the maximum hourly production rate.

An optional design scenario would incorporate storage of biogas and fuel sequencing so that gases can be burned individually rather than together and at rates greater than the biogas production rate. With storage, there would be the capability to operate each combustion source on biogas to its rated capacity. This application reflects the biogas storage scenario which would generate higher emissions. However, the annual combustion of biogas will remain constant with or without the storage capability.

Vent Scrubber

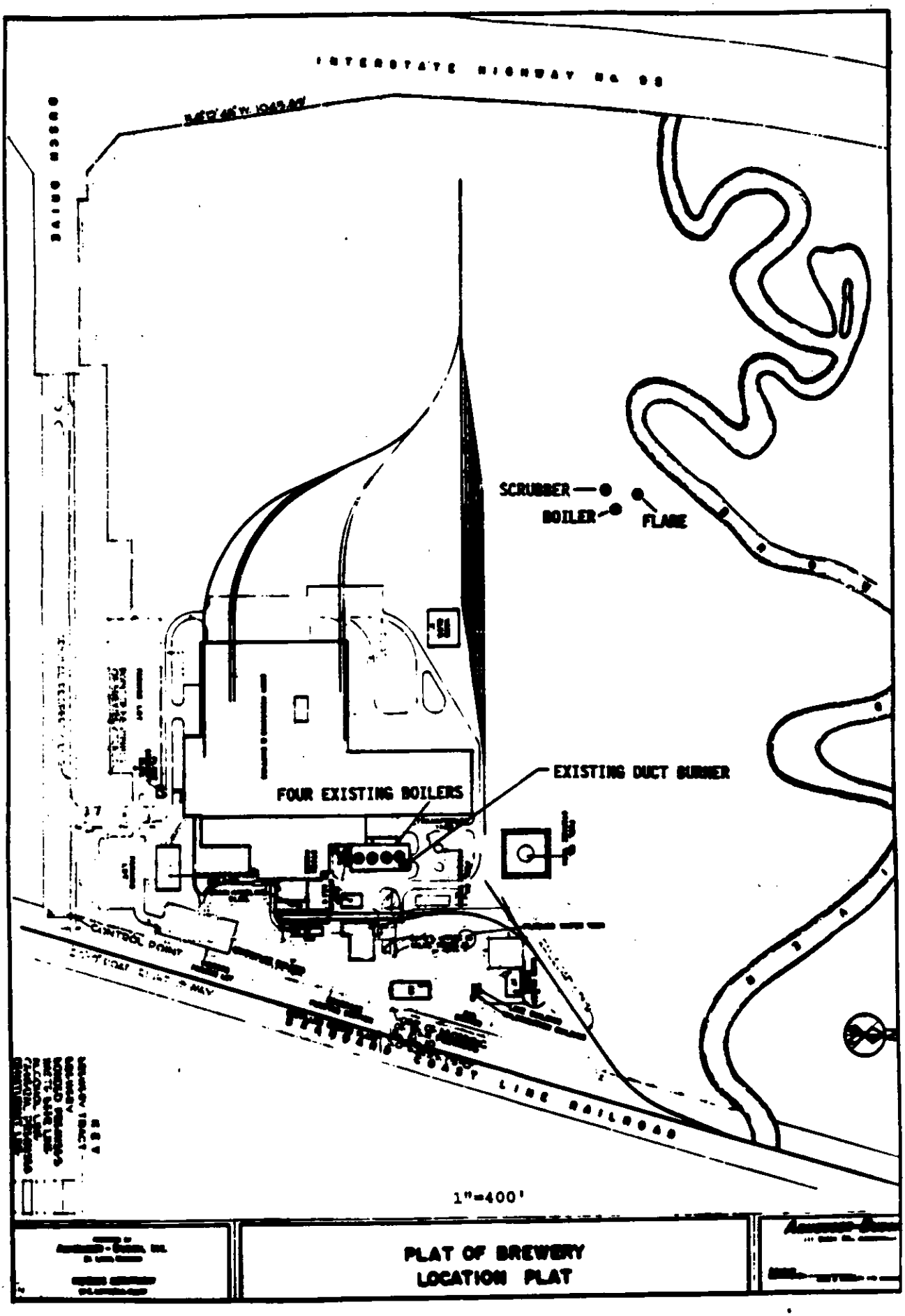
The anaerobic process converts all forms of sulfur in the waste into the reduced sulfide form. Depending upon the reactor pH and Henry's law constant, a certain amount of hydrogen sulfide (H_2S) will be released from solution into the biogas. Based upon chemical equilibria and empirical observations, the H_2S content of biogas will average 0.18% by weight. All biogas is collected under pressure (approx. 0.5 psi) within the anaerobic reactor.

Occasionally the anaerobic reactors may over-pressurize, venting biogas into the tank head space. For this reason, the reactor headspace, as well as other tanks and sumps in the system, are vented to an odor control scrubber. The wet scrubber is an atomization type, including dual reaction chambers. The scrubbing mist is an aqueous solution of sodium hydroxide (NaOH) and sodium hypochlorite (NaOCl), formulated to neutralize and oxidize H_2S. The spent solution will be discharged to treated effluent.

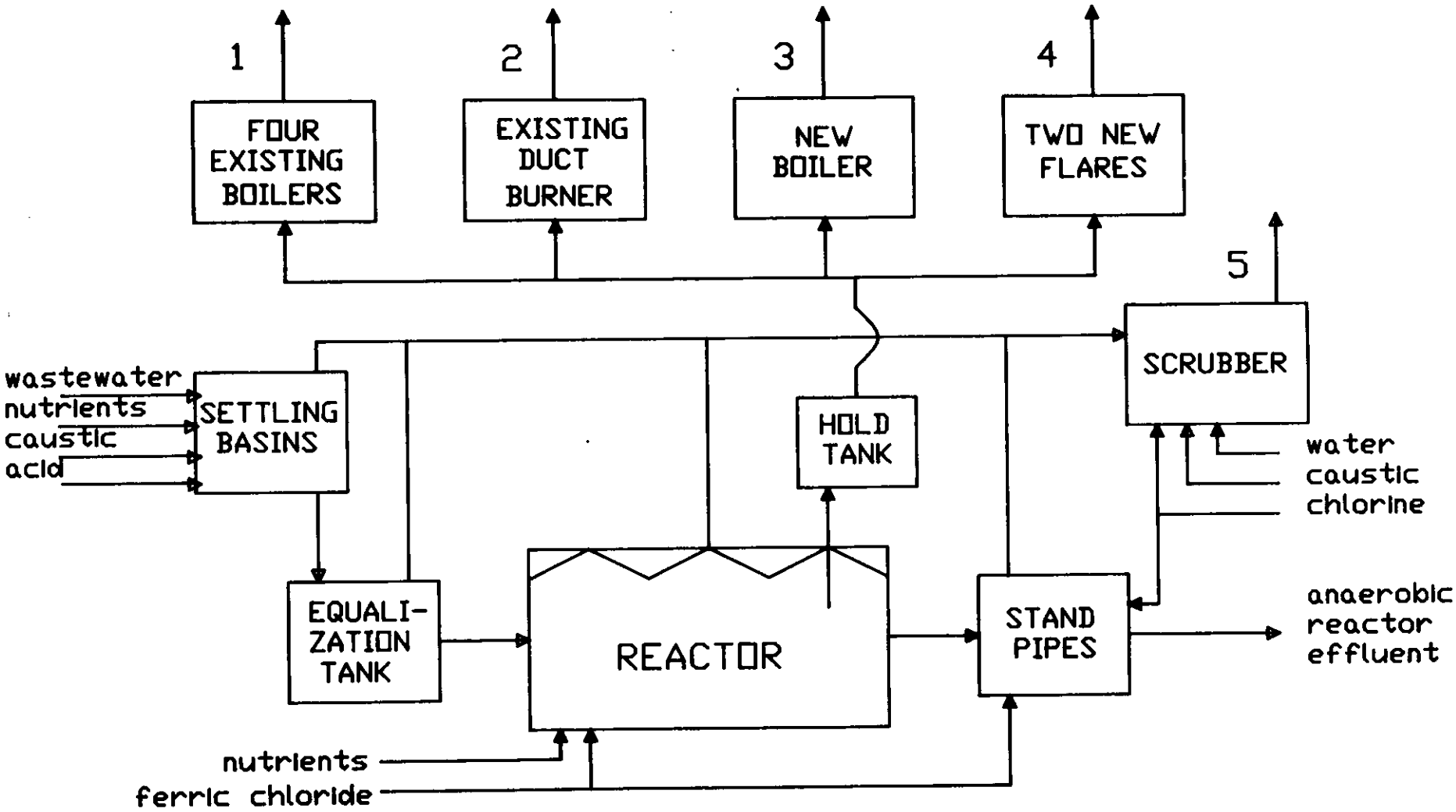
Process Monitoring

The anaerobic process is very stable with H_2S concentrations in the produced gas remaining constant over a 24-hour period. The stability of the process allows an instantaneous sample to be representative of conditions that persist for a much longer duration. Anheuser-Busch will track short-term sulfur dioxide emissions by monitoring daily biogas production and obtaining an H_2S grab sample every 24 hours. These data will be utilized to ensure compliance with short-term and long-term SO_2 emission limits.

PLOT PLAN


INTERSTATE HIGHWAY NO. 55
SCRUBBER
BOILER
FLARE
FOUR EXISTING BOILERS
EXISTING DUCT BURNER
1"=400'
PLAT OF BREWERY
LOCATION PLAT

FLOW DIAGRAM



ANAEROBIC TREATMENT FACILITY FLOW DIAGRAM

BIOGAS SPECIFICATIONS

BIOGAS SPECIFICATIONS

COMPOSITION

METHANE	75%
CARBON DIOXIDE	23%
WATER	1%
NITROGEN	1%
HYDROGEN SULFIDE	0.18% average; 0.40% maximum

DENSITY	0.076 pound per cubic foot
PRESSURE	1.039 atmosphere
pH	7.3

EMISSIONS DATA

EMISSIONS DATA

This section presents the estimated emissions from the brewery sources affected by the proposed anaerobic treatment facility. The assumptions used in developing emission factors and emission rates are listed.

Spreadsheets are presented which summarize emissions from combustion of the fuels which the sources will be capable of firing. These sources include:

- four existing boilers, currently permitted to fire oil and natural gas,
- an existing duct burner, permitted to fire natural gas,
- a new boiler, which will have natural gas- and biogas-firing capability, and
- two new biogas flares (one serving as backup).

The final table presents the maximum annual emissions increases which could occur at the brewery and the fuel firing scenario associated with these increases.

JACKSONVILLE BREWERY - ANAEROBIC TREATMENT FACILITY, AIR EMISSIONS

Biogas combustion sources

- four existing 80,000 lb/hr steam boilers
- existing cogeneration system duct burner (38 MM Btu/hr)
- new boiler (12 MMBtu/hr)
- new flare, with backup (78,800 cu ft/hr)

Additional source

- vent gas H2S scrubber

Emissions Basis

- average biogas production 800,000 cu ft/day
- maximum biogas production 70,000 cu ft/hr
- biogas heating value 750 Btu/cu ft
- average biogas H2S content 0.18 % (wt)
- maximum biogas H2S content 0.40 % (wt)
- biogas combustion emissions based on AP-42 factors, Section 1.4, Natural Gas Combustion, increased by the equivalent Btu content
- biogas combustion emissions from new boiler based on vendor guarantee
- natural gas combustion emissions from new boiler based on AP-42 Natural Gas Combustion factors
- average vent gas H2S content 100 ppmv
- maximum vent gas H2S content 500 ppmv
- vent gas scrubber feed rate 2000 cu ft/min

JACKSONVILLE BREWERY - ANAEROBIC TREATMENT FACILITY

MAXIMUM EMISSIONS INCREASES DUE TO THE PROJECT

	tons/yr
PM/PM-10 (a)	1.1
NOx (a)	20.8
CO (b)	76.5
VOC (b)	3.7
SO2 (a)	37.2
H2S (c)	0.04

(a) combustion of all biogas produced in new flare

(b) combustion of 12 MM Btu/hr biogas in new boiler (73.6 t/yr), and remaining volume in existing boilers, duct burner, and/or flare (2.9 t/yr)

(c) from vent gas scrubbing; maximum short-term emissions are 0.05 lb/hr

- scrubber efficiency 99% (based on vendor data)

Emission Factors

PM/PM-10

5 lb/MM cu ft x cu ft/750 Btu = 0.01 lb/MM Btu

0.005 lb/MM Btu (new boiler - biogas guarantee)

NOx

140 lb/MM cu ft x cu ft/750 Btu = 0.19 lb/MM Btu

0.1 lb/MM Btu (new boiler - biogas guarantee)

CO

35 lb/MM cu ft x cu ft/750 Btu = 0.05 lb/MM Btu

1.4 lb/MM Btu (new boiler - biogas guarantee (a))

VOC

2.8 lb/MM cu ft x cu ft/750 Btu = 0.01 lb/MM Btu

0.016 lb/MM Btu (new boiler - biogas guarantee)

SO2

average = 0.18 lb H2S/100 lb biogas x 0.076 lb/cu ft x cu ft/750 Btu x 64 lb SO2/34 lb H2S

= 0.34 lb/MM Btu

maximum = 0.40 lb H2S/100 lb biogas x 0.076 lb/cu ft x cu ft/750 Btu x 64 lb SO2/34 lb H2S

= 0.76 lb/MM Btu

(a) to meet 0.1 lb NOx/MM Btu, combustion/burner modifications are necessary which result in the increased CO emission rate.

JACKSONVILLE BREWERY - ANAEROBIC TREATMENT FACILITY
EMISSIONS SUMMARY - EXISTING POWER BOILERS

		oil	natural gas	biogas	biogas & oil	biogas & natural gas
PM/PM-10						
	lb/hr (a)	9.2	0.5	1.0	9.2	1.0
	ton/yr (a)	40.3	2.2	1.1	36.3	3.2
	total ton/yr (b)	84.8	8.4	1.1	75.1	9.0
NOx						
	lb/hr (a)	36.8	24.3	18.4	36.8	24.3
	ton/yr (a)	161.2	106.4	20.8	161.5	120.3
	total ton/yr (b)	338.7	424.9	20.8	316.3	418.2
CO						
	lb/hr (a)	3.1	3.3	4.9	4.9	4.9
	ton/yr (a)	13.6	14.5	5.5	17.4	19.1
	total ton/yr (b)	28.3	58.5	5.5	30.2	60.2
VOC						
	lb/hr (a)	0.2	0.3	1.0	1.0	1.0
	ton/yr (a)	0.9	1.3	1.1	1.9	2.3
	total ton/yr (b)	3.5	5.2	1.1	4.2	6.0
SO2						
	lb/hr (a)	144.4	0.1	73.7	144.4	73.7
	ton/yr (a)	632.5	0.3	37.2	589.1	37.5
	total ton/yr (b)	1332.0	1.2	37.2	1199.5	38.3

[a] Each of four boilers.

[b] Total for four boilers

JACKSONVILLE BREWERY - ANAEROBIC TREATMENT FACILIT
EMISSIONS SUMMARY - EXISTING DUCT BURNER

		natural gas	biogas	biogas & natural gas
PM/PM-10				
	lb/hr	0.2	0.4	0.4
	ton/yr	0.9	1.1	1.4
NOx				
	lb/hr	3.8	7.2	7.2
	ton/yr	16.6	20.8	26.5
CO				
	lb/hr	1.5	1.9	1.9
	ton/yr	6.6	5.5	7.8
VOC				
	lb/hr	0.2	0.4	0.4
	ton/yr	0.9	1.1	1.4
SO2				
	lb/hr	0.03	28.9	28.9
	ton/yr	0.13	37.2	37.2

JACKSONVILLE BREWERY - ANAEROBIC TREATMENT FACILITY
EMISSIONS SUMMARY -NEW BOILER AND FLARE

		Boiler		Flare
		natural gas	biogas	biogas
PM/PM-10				
	lb/hr	0.1	0.1	0.6
	ton/yr	0.4	0.3	1.1
NOx				
	lb/hr	1.7	1.2	11.2
	ton/yr	7.4	5.3	20.8
CO				
	lb/hr	0.4	16.8	3.0
	ton/yr	1.8	73.6	5.5
VOC				
	lb/hr	0.03	0.2	0.6
	ton/yr	0.13	0.8	1.1
SO2				
	lb/hr	0.01	9.1	44.9
	ton/yr	0.04	18.0	37.2

VENT GAS SCRUBBER SYSTEM

(TYPICAL SYSTEM, ACTUAL VENDOR NOT SELECTED)

CALVERT ODOR CONTROL SCRUBBER SYSTEM

PROCESS DESCRIPTION

The odor control scrubbing system consists of the following: a contact chamber, chemical supply, diluted chemical liquid distribution system, exhaust fan, exhaust stack, piping, controls, and accessories. Odorous gases enter the scrubber system at the top of the FRP contact chamber which is size based upon the required residence time for odor removal. A scrubbing mist is created by atomizing a chemical solution with pneumatic atomization nozzles. The chemical mist, of 5 to 20 micron in diameter, is mixed with the odorous air at the contact chamber inlet and is evenly dispersed throughout--providing intimate contact whereby the odorous compounds are oxidized. The deodorized air exits the contact chamber near the bottom and is discharged through a fan and a stack. The chemical mist falls to the bottom of the chamber and is drained continuously along with reaction by-products.

The chemical solution is produced by mixing potable water with sodium hypochlorite and sodium hydroxide. The sodium hydroxide is added for automatic pH and chlorine residual control in the contact chamber and exhaust air.

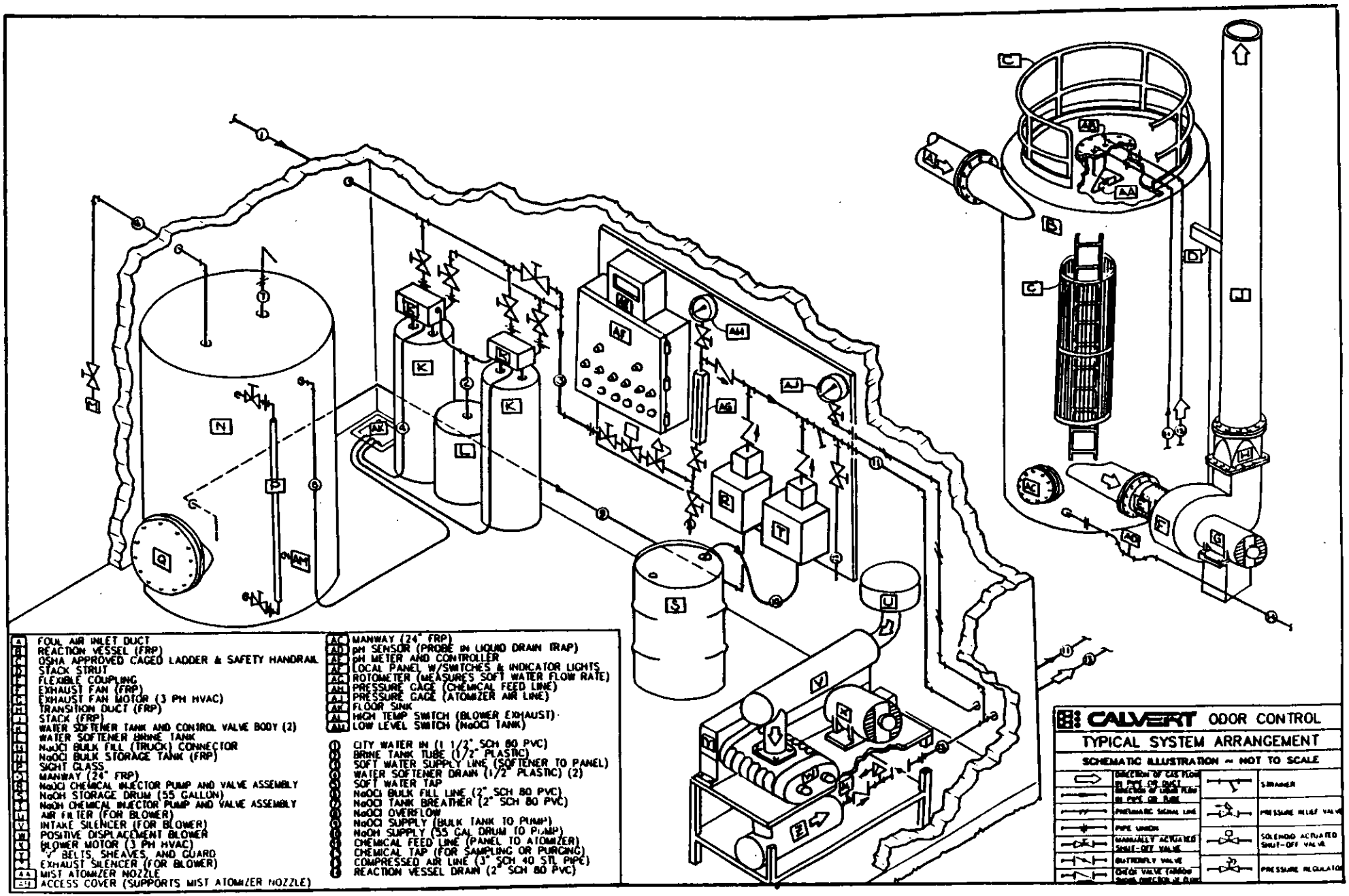
The odor scrubbing system is a once-through continuous process that does not require preconditioning of odorous gases, recirculation of chemicals, or redundancy of equipment. The liquid distribution system can be replaced without shutting down the odor scrubbing system.

The gaseous effluents from the odor scrubbing system are nontoxic, free of by-products, free of odor and pose no health problems.

MAJOR SYSTEM COMPONENTS

The major system components of a CALVERT Odor Control System are as follows:

1. Reaction Chamber
2. Exhaust Fan
3. Exhaust Stack
4. Chemical Dilution Panel
5. Electrical Control Panel
6. Atomizing Nozzle
7. Compressor
8. Water Softener
9. Chemical Storage Tank


A FOUL AIR INLET DUCT
B REACTION VESSEL (FRP)
C OSHA APPROVED CAGED LADDER & SAFETY HANDRAIL
D STACK STRUT
E FLEXIBLE COUPLING
F EXHAUST FAN (FRP)
G EXHAUST FAN MOTOR (3 PH HVAC)
H TRANSITION DUCT (FRP)
I STACK (FRP)
K WATER SOFTENER TANK AND CONTROL VALVE BODY (2)
L WATER SOFTENER BRINE TANK
M NaOCl BULK FILL (TRUCK) CONNECTOR
N NaOCl BULK STORAGE TANK (FRP)
O SIGHT GLASS
P MANWAY (24" FRP)
Q NaOCl CHEMICAL INJECTOR PUMP AND VALVE ASSEMBLY
R NaOH STORAGE DRUM (55 GALLON)
S NaOH CHEMICAL INJECTOR PUMP AND VALVE ASSEMBLY
T AIR FILTER (FOR BLOWER)
U INTAKE SILENCER (FOR BLOWER)
V POSITIVE DISPLACEMENT BLOWER
W BLOWER MOTOR (3 PH HVAC)
X "V" BELTS, SHEAVES, AND GUARD
Y EXHAUST SILENCER (FOR BLOWER)
AA MIST ATOMIZER NOZZLE
AB ACCESS COVER (SUPPORTS MIST ATOMIZER NOZZLE)
AC MANWAY (24" FRP)
AD pH SENSOR (PROBE IN LIQUID DRAIN TRAP)
AE pH METER AND CONTROLLER
AF LOCAL PANEL W/SWITCHES & INDICATOR LIGHTS
AG ROTOMETER (MEASURES SOFT WATER FLOW RATE)
AH PRESSURE GAGE (CHEMICAL FEED LINE)
AJ PRESSURE GAGE (ATOMIZER AIR LINE)
AK FLOOR SINK
AL HIGH TEMP SWITCH (BLOWER EXHAUST)
AM LOW LEVEL SWITCH (NaOCl TANK)
1 CITY WATER IN (1 1/2" SCH 80 PVC)
2 BRINE TANK TUBE (1/2" PLASTIC)
3 SOFT WATER SUPPLY LINE (SOFTENER TO PANEL)
4 WATER SOFTENER DRAIN (1/2" PLASTIC) (2)
5 SOFT WATER TAP
6 NaOCl BULK FILL LINE (2" SCH 80 PVC)
7 NaOCl TANK BREATHER (2" SCH 80 PVC)
8 NaOCl OVERFLOW
9 NaOCl SUPPLY (BULK TANK TO PUMP)
10 NaOH SUPPLY (55 GAL DRUM TO PUMP)
11 CHEMICAL FEED LINE (PANEL TO ATOMIZER)
12 CHEMICAL TAP (FOR SAMPLING OR PURGING)
13 COMPRESSED AIR LINE (3" SCH 40 STL PIPE)
14 REACTION VESSEL DRAIN (2" SCH 80 PVC)
CALVERT ODOR CONTROL
TYPICAL SYSTEM ARRANGEMENT
SCHEMATIC ILLUSTRATION – NOT TO SCALE
DIRECTION OF GAS FLOW IN PIPE OR DUCT
DIRECTION OF LIQUID FLOW IN PIPE OR DUCT
PNEUMATIC SIGNAL LINE
PIPE UNION
MANUALLY ACTUATED SHUT-OFF VALVE
BUTTERFLY VALVE
CHECK VALVE (SWING CHECK IN LINE)
STRAINER
PRESSURE RELIEF VALVE
SOLENOID ACTUATED SHUT-OFF VALVE
PRESSURE REGULATOR

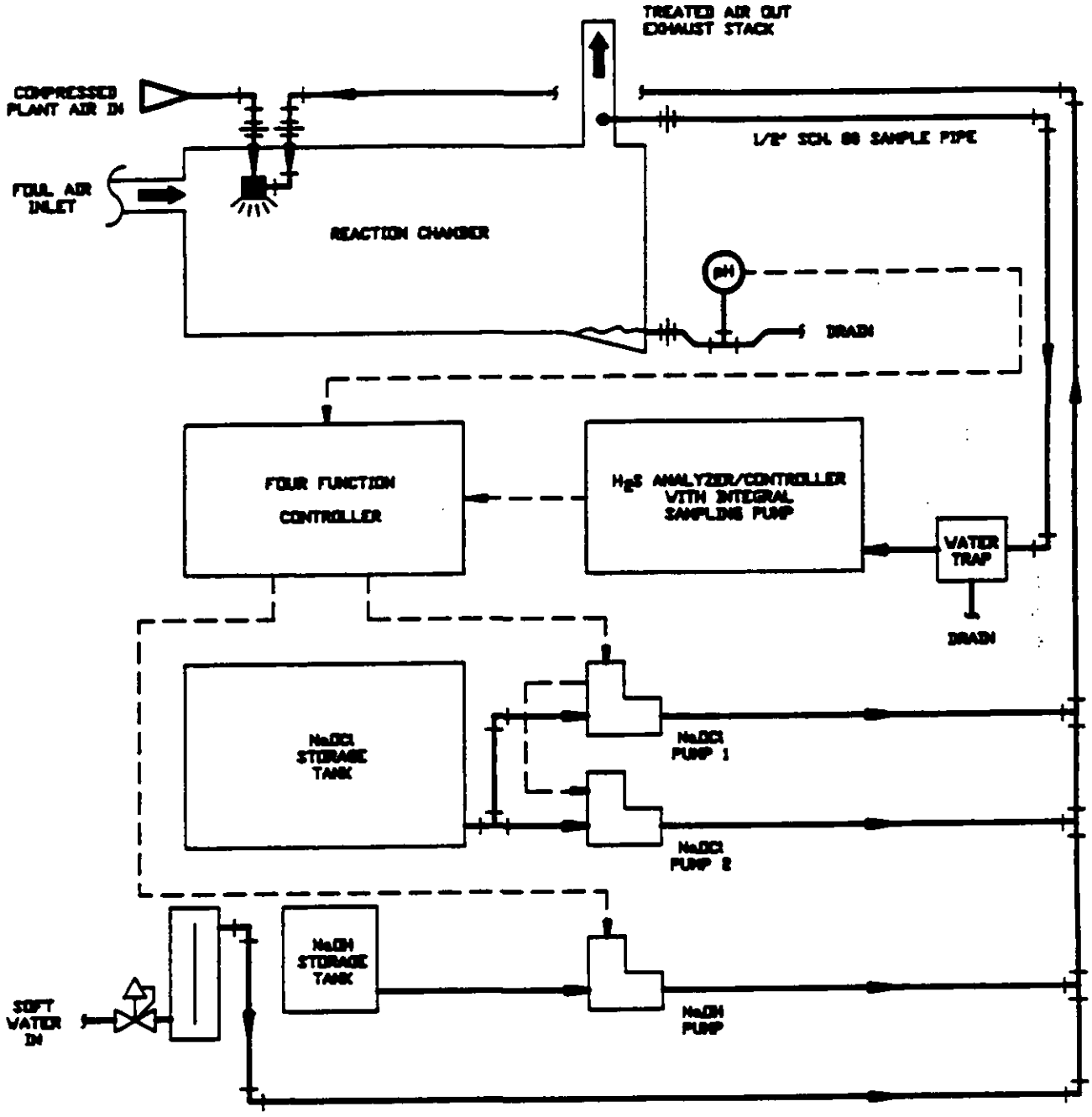


FIGURE 1. : PROCESS SCHEMATIC

LIST OF CALVERT ODOR CONTROL SYSTEMS INSTALLATIONS

Location	System Application	# of Sys	Flow Rate, scfm	H_2S Conc., ppm	Removal Eff., %	Comments	Design Engineer	Client/Contact	Contractor
Union Sanitation District Union City, CA	Rotating Bio. Towers	8	15,000	<1	99+	On line since 7/86	J.M. Montgomery Engrs. (415) 933-2250 Ann Farrell	Union Sanitation Dist (415) 471-0577 Roger Ham	Union Sanitation Dist. (415) 471-0577 Roger Ham
Union Sanitation District	Primary Tow. Clarifiers	2	25,000	<1	99+	On line since 7/86	"	"	"
Union Sanitation District	Sludge Thickeners	1	3,000	15	99+	On line since 7/86	"	"	"
Union Sanitation District	Site Waste Pump. Plant	1	3,000	15	99+	On line since 7/86	"	"	"
Union Sanitation District	Solids Hand. Building	2	15,000	15	99+	On line since 7/86	"	"	"
Union Sanitation District	Alvarado Pump. Plant	1	6,000	15	99+	On line since 12/87	"	"	"
Union Sanitation District	Primary Clarifiers	3	15,000	10	99+	On line since 7/87	"	"	"
Union Sanitation District	Aeration Tanks	1	15,000	10	99+	On line since 7/87	"	"	"
Reno-Sparks WWTP Reno, NV	Wastewater Treat Plant	1	12,000	5	99	On line since 2/88	Kennedy Jenks Engineers (415) 362-6065 Maurice Laks	Reno-Sparks WWTP	Harris Mechanical (612) 646-2911 Richard Slovarp
Knollwood WWTP Dupage Cty, IL	Knollwood W.W.T.P.	2	4,000-7,000	20	99	On line since 2/87	P.R.C. Engineers (312) 938-0300 Ed Klaus	Knollwood W.W.T.P. (312) 323-0677 Bill Bowles	A.J. Lowe and Sons (312) 242-3897 Neil Lindberg
Jefferson Parish East Bank WWTP Jefferson Prsh,LA	North Grit Chambers	1	18,000	5	99	On line since 2/88	J.M. Montgomery Engrs. (213) 681-4255 David Harrison	Engineering Science (504) 736-6299 Joseph Dipre	Pittman Construction (504) 945-4163 Michael Pittman
Jefferson Parish East Bank WWTP	South Grit Chambers	1	18,000	5	99	On line since 2/88	"	"	"
Jefferson Parish East Bank WWTP	Headworks Building	1	18,000	5	99	On line since 2/88	"	"	"
Jefferson Parish East Bank WWTP	Sludge Hold Tanks	1	12,000	50	99	On line since 2/88	"	"	"

LIST OF CALVERT ODOR CONTROL SYSTEMS INSTALLATIONS (continued)

Location	System Application	# of Sys	Flow Rate, scfm	H_2S Conc., ppm	Removal Eff., %	Comments	Design Engineer	Client/Contact	Contractor
Jefferson Parish East Bank WWTP	Belt Press Building	1	48,000	5	99	On line since 2/88	J. M. Montgomery Engrs (213) 681-4255 David Harrison	Engineering Science (504) 736-6299 Joseph Dipre	Pittman Construction (504) 945-4163 Michael Pittman
City of Boise WWTP Boise, ID	W.W.T.P.	1	2,500	40	99	On line since 6/86	CH_2M Hill Engineers Inc (208) 345-5310 John Wiskus	Jerry McMackin (208) 384-4261 City of Boise	Drake Mechanical, Inc. (208) 336-1786 Rick Drake
Monterey Regional WWTP Monterey, CA	W.W.T.P.	2	1,800	25	99	On line since 1/89	Engineering Science Berkeley, CA	Mortenson/Watkin J.V. (408) 883-2011 Tom Morrison	Mortenson/Watkin J.V (408) 883-2011 Tom Morrison
Baltimore City Compost Facility Baltimore, MD	Compost Facility	1	51,000	n/a	98	On line since 7/87	Metcalf & Eddy Engrs. (201) 685-4154 Manual Ponte	Metcalf & Eddy (301) 354-1636 Scott McFarland	Metcalf & Eddy (301) 354-1636 Scott McFarland
Rock Creek WWTP Hillsboro, OR	Headworks	1	33,000	10	99	On line since 6/87	Brown & Caldwell Engrs. (503) 640-8211 Greg Mathews	Hillsboro WWTP (503) 681-7050 Sam Logan	EMR Contractors (503) 683-3715 Ken Marques
So. Valley Water Reclamation Salt Lake Cty, UT	W.W.T.P.	1	16,000	10	99	On line since 4/88	James M. Montgomery (801) 272-1900 Bob Meyers	Western Sheet Metal (801) 973-7072 R.C. Montrone	Western Sheet Metal (801) 973-7072 R.C. Montrone
Missouri River WWTP Omaha, NE	Trickling Filters	1	36,400	10	99	On line since 9/88	CH_2M HILL (303) 771-0900 Tom Heinemann	Missouri River WWTP (402) 733-5465 Louis Tomsu III	Natkin & Co. (402) 346-9119 Edd Lang
Turkey Creek Houston, TX	Bar Screen Room	1	3,150	25	99	On line since 3/88	Dannenbaum Engr. (713) 622-8011 Barry Sparshwasher	Basic Constructors (713) 869-6575 Robert Mullen	Basic Constructors (713) 869-6575 Robert Mullen
City of San Diego, CA	Sewage Pump Sta #1	1	20,000	20-50	99	On line since 4/87	A.P.T. (CALVERT) San Diego, California	Hans Torabi (City) (619) 696-3605	Metro Young Constr.
City of San Diego, CA	Sewage Pump Sta #2	1	30,000	30	99	On line since 9/87	"	"	T.B. Gorton Constr. (619) 562-1004
City of Hamilton, Ohio	Compost Facility	1	76,200	N/A	97	On line since 9/88	Burgess & Niple Limited (614) 459-2050	City of Hamilton (513) 868-5971 Michael Wheeler	Ashbrook-Simon-Hartley (205) 823-5231 Earl Capps
Indianapolis WWTP Indianapolis, IN	Incinerator and Dewatering Buildings	2	37,000	20	99	Will be on line 12/89	Greeley & Hansen (312) 573-3611 John Tromp	J.A. House, Inc. (317) 634- 2434 Thomas A. Carr	J.A House, Inc. (317) 634-2434 Thomas A. Carr
Des Moines WWTP Des Moines, WA	Trickling Filter	1	18,000	15	99	Will be on line 1989	URS Corporation (206) 623-6000 Mr. Deryl Jech	Venture & Associates (206) 852-8080	Venture & Associates (206) 852-8080

LIST OF CALVERT ODOR CONTROL SYSTEMS INSTALLATIONS (continued)

Location	System Application	# of Sys	Flow Rate, scfm	H_2S Conc., ppm	Removal Eff., %	Comments	Design Engineer	Client/Contact	Contractor
County of Hillsborough Dale-Mabry WWTP Tampa, FL	Headworks	1	5,600	150	99	Will be on line 1989	Greeley & Hansen (312) 573-3611 John Tromp	County of Hillsborough (813) 272-5362	Ralph M. Parsons (813) 932-2434 Steve Schaefer
Lakota WWTP Federal Way, WA	Headworks Belt Press Clarifiers	1	20,700	25	99	Will be on line 1989	H.D.R. Engineering (206) 682-9000 Lee Sawyer	Pease & Sons. Inc. (206) 531-7700 John Cristello	Pease & Sons. Inc. (206) 531-7700 John Cristello
Lakota WWTP	Wet Well Aeration Basins Sludge Hldg	1	36,910	8	99	Will be on line 1989	H.D.R. Engineering (206) 682-9000 Lee Sawyer	Pease & Sons. Inc. (206) 531-7700 John Cristello	Pease & Sons. Inc. (206) 531-7700 John Cristello
Colorado Springs WWTP Colorado Spgs,CO	Digester	1	30,000	5	99	Will be on line 1989	Brown and Caldwell Consulting Engineers (303) 750-3983 Mr. Bob Bolten	Job under construction	Central Jones (303) 233-8440 Terry Montague
Roseburg WWTP Roseburg, OR	Primary Clarifier	1	12,600	5	99	On line since 11/88	CH2M Hill (503) 223-67197 Mike Bracken	Roseburg WWTP	Contractors Inc. (503) 692-0100 Ed Duncan
Santa Rosa WWTP Santa Rosa, CA	Sludge Dewatering Building	1	28,000	10	99	Will be on line 1989	CH2M Hill (415) 652-2426	Job under construction	Campbell Construction (415) 785-8910 Dan Bufton
L. A. County Sanitation Dist. Los Angeles, CA	Wet Well	1 1	750 1,000	500 500	99 99	Will be on line 1989	L. A. County (213) 699-7411 Wes Bolfmaster	L.A. County (213) 699-7411 Wes Bolfmaster	Scott Company (213) 538-4200 Gary Buxton
Hillsborough Folkenberg Lift Station Tampa, FL	Pump Station	1	2,000	150	99+	Will be on line 1989	H.D.R. (813) 287-1960 Michael Mehan	Job under construction	Dynasty (817) 968-9538 Mr. Ronnie C. Lau
El Paso WWTP El Paso, TX	Headworks	2	20,000	43	99	Will be on line 1990	Parkhill, Smith, Cooper (915) 533-6811 Daniel Knorr	Job under construction	Harris Mechanical (915) 858-1951 Rich Martin
El Paso WWTP	Primary Clarifiers	2	68,000	5	99	Will be on line 1990	"	"	"
El Paso WWTP	Sludge Building	1	30,000	5	99	Will be on line 1990	"	"	"

LIST OF CALVERT ODOR CONTROL SYSTEMS INSTALLATIONS (continued)

Location	System Application	# of Sys	Flow Rate, scfm	H^2S Conc., ppm	Removal Eff., %	Comments	Design Engineer	Client/Contact	Contractor
City of Dayton WWTP Dayton, OH	Headworks	1	3,000	100	99	Will be on line 1989	Greeley & Hansen (317) 924-3380 Tom Poehls	Job under construction	Sycamore Construction (513) 274-2892 Darl Kuck
Fairfield Pump Station Fairfield, CA	Wet Well	1	2,200	5	99	Will be on line 1989	J. M. Montgomery (415) 933-2250 Neil Mann	"	McGuire & Hester (415) 632-7676
Camden WWTP Camden, NJ	Sludge Storage Tanks	2	16,500	20	99	Will be on line 1989	Greeley & Hansen (317) 924-3380 David R. Zima	"	PKF-MARK III, Inc. (215) 968-5031 Ron May
Daytona Bch WWTP Daytona Beach, FL	Belt Press	1	23,000	15	99	Will be on line 1989	Camp Dresser & McKee (904) 254-1974 John Hill	"	Lee Construction Co. (407) 322-5022 Tony Brown
Lahaina WWTW Lahaina, Maui	Wet Well	2	1,000	200	99.5	Will be on line 1989	M & E Pacific (808) 521-3051 Victor Moreland	"	Massart Anthony Const. (206) 762-3780 Doug Maybee
Oxnard WWTP Oxnard, CA	Headworks Solids Proc. Area	1 1	5,600 12,750	0-50 0-10	99 99	Will be on line 1989	John S. Mirk Engineers (619) 438-7444 Donald King	"	Paul A. Lawrence Co. (805) 488-0088

TOTAL NUMBER OF SYSTEMS: 64

TOTAL NUMBER OF INSTALLATIONS: 30

FLARE SYSTEM

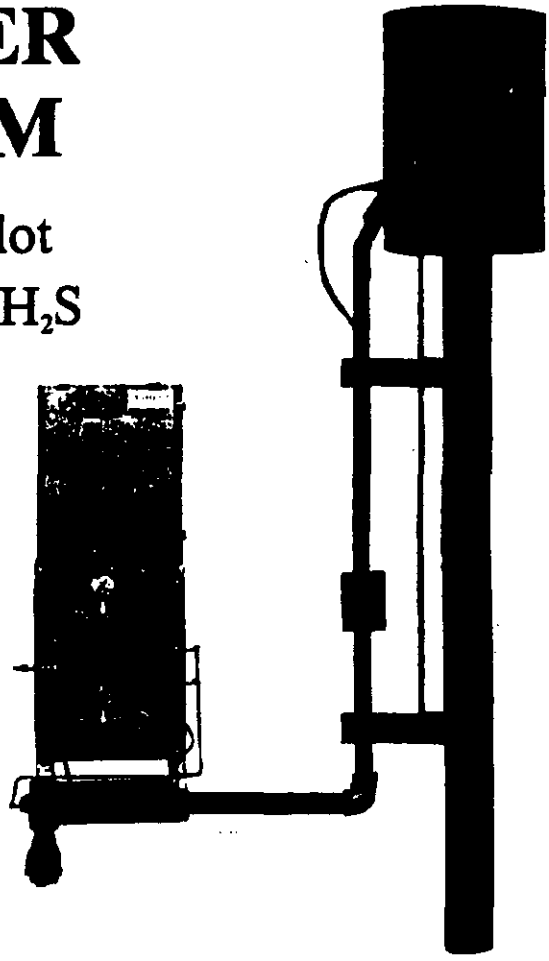
(TYPICAL SYSTEM, ACTUAL VENDOR NOT SELECTED)

VAREC

PDS 244WT
11/88

244W SERIES

WASTE GAS BURNER & IGNITION SYSTEM



- Highly Reliable Stoichiometric Pilot
- High Temperature Conversion of H_2S
- Simplified Maintenance — All Performed at Ground Level
- 110 mph Wind Survival Without Secondary Stack
- Long Life Stainless Steel Tip
- Solid State Controller Provides Automatic Re-Ignition

INTRODUCTION

The VAREC 244W Series Waste Gas Burner is a highly reliable flare and ignition system. It is developed from systems used extensively in the petroleum industry. The pilot has proven reliable, even in the extremes of Alaska's climate. The Model 244W is ideal for use in the Waste Treatment Industry to burn excess waste gas.

APPLICATION

Excess waste gas must be disposed of safely. The gas is flared to avoid an odor nuisance or an explosion hazard. Waste gas is generated by the anaerobic digestion of organic solids. It is produced in municipal or industrial anaerobic digesters, lagoons, and municipal landfills. The waste gas is typically a highly moist mixture of gases. It consists of approximately 55 to 70% methane, 25 to 35% carbon dioxide and trace amounts of nitrogen and hydrogen sulfide. The waste gas often has a fluctuating flow and BTU value. The VAREC Model 244W is designed to operate reliably at low and high flow rates, and is not affected by changes in the waste gas BTU value.

OPERATION

The VAREC 244W Burner utilizes a patented pilot ignition system. Pilot gas and air are mixed and ignited at ground level, remote from the burner stack. This controlled method results in a stable pilot flame with an ideal gas-to-air burning ratio. The pilot burns a true stoichiometric, non-smoking flame. It is not affected by changes in the waste gas flow rate or BTU content.

The electronics package controls pilot ignition and monitoring. During the ignition cycle, pilot gas is directed to the flame retention nozzle. Additionally, gas is directed to the venturi where air is inspirated. The air/gas mixture is ignited at the venturi outlet. This generates a flame front which exits the continuous flame nozzle. The flame retention nozzle is ignited by this flame front. Once the continuous flame nozzle piping purges, it is automatically re-ignited by the flame retention pilot.

A thermocouple is installed in the continuous flame nozzle. When it reaches the temperature setting, the controller shuts off the flame retention pilot to conserve fuel. The pilot in the larger nozzle burns continuously. It ignites the waste gas as it is relieved through the burner. Should the pilot go out, an alarm is energized and the controller cycles to relight the pilot. If unsuccessful after several attempts, a second alarm is activated. The system continues to cycle for re-ignition until the operator changes the controller mode.

VAREC 244W SERIES WASTE GAS BURNER AND IGNITION SYSTEM

DESIGN FEATURES

The 244W design provides flow capacity nearly twice that of conventional "pilot-ring" burners. Baffles, downdraft preventers, vortex vanes, and secondary stacks are not required. This streamlined, high capacity design allows the use of smaller diameter burners, reducing the cost of connecting piping. The pilot is inclined, penetrating the waste gas with a long profile flame. This feature ensures the waste gas is ignited at flows near zero to the rated capacity. The pilot system provides reliable ignition and a continuous pilot in all weather conditions. The unprotected pilot will withstand winds up to 110 mph (177 km/h). These features provide for reliable, efficient operation.

Installation is simplified. Because the burner has a high turn-down ratio, there is no need to manifold several burners together. Extra regulators and controls for cascading multiple burners are not required. Pre-cast concrete supports are not necessary. The burner includes an integral 150 lb. RF flange. The contractor provides a matching flange and pipe supports. These features keep installation costs to a minimum.

The pilot ignition system includes a solid state controller. The controller sequences the components which operate the valve and regulator-controlled venturi. The venturi driven pilot burns at an elevated temperature when fueled by propane or natural gas. This improves H_2S conversion, reducing odor to a minimum. The heavy wall continuous pilot nozzle and flame retention nozzle are mounted at the burner tip. These nozzles are designed to withstand the elevated pilot temperature and H_2S environment. Pilot monitoring is accomplished by a heavily protected thermocouple. The thermocouple provides an extremely reliable pilot signal.

Contacts are provided as standard for remote pilot indication and system alarm. Manual, automatic, or standby ignition modes are switch selectable. Complete remote control is easily achieved. Low cost signal wiring (by others) may be connected to the control switch and manual ignite button.

Flame fronts may be quenched by small diameter lines. The VAREC 244W is designed to operate satisfactorily in very cold climates. The large venturi design allows the ignition components to be mounted up to 100 feet (30 m) away from the burner. The control package may also be mounted at this distance without suffering any performance loss. The venturi includes a backflash preventer for safety. An anti-clog orifice is supplied, eliminating the need for pilot filters.

The VAREC Model 244W is designed with operator safety in mind. All hi-tension leads and sparking devices are removed from the burner stack. Adjustments and maintenance are performed at ground level, away from the heat of combustion. Ignition components are located remote from the burner, providing for long service life with minimal maintenance.

OPTIONAL FEATURES

For applications where waste gas will be flared intermittently, an option to conserve pilot fuel is available. This "Auto-Start" option includes a pilot gas supply solenoid installed on the valve and regulator package. The solenoid opens only when pilot ignition is called for and remains open only while the waste gas is flaring. The solenoid may be specified to fail open, delivering pilot fuel to support combustion even during a power failure. If required, the solenoid can be provided to fail closed. This is generally used when a blower delivers the waste gas to the burner. The "call for ignition" signal may be provided by a pressure switch, flow switch, or other dry contact.

If the available pilot gas supply is less than 10 PSIG (70 kPa), a blower package should be specified. The blower panel replaces the venturi and regulator panel. The blower delivers the proper air/gas mixture to the continuous pilot.

For ambient temperatures below −20°F (−29°C), a heater and thermostat are recommended. These are installed in the electronic panel to ensure proper operation of the controller.

FEATURES/BENEFITS

VAREC FEATURE	USER BENEFIT
• Highly Reliable Stoichiometric Pilot	• Remains lit in freezing temperatures and high winds
• High Temperature Conversion of H_2S	• Eliminates odor nuisance
• Simplified Maintenance — All Performed at Ground Level	• Improves plant operator safety
• 110 MPH Wind Survival Without Secondary Stack	• Highly reliable pilot with reduced installation cost
• Long Life Stainless Steel Tip	• Corrosion resistant in high temperature H_2S environment
• Solid State Controller Provides Automatic Re-Ignition	• Reliable control of pilot ignition and status

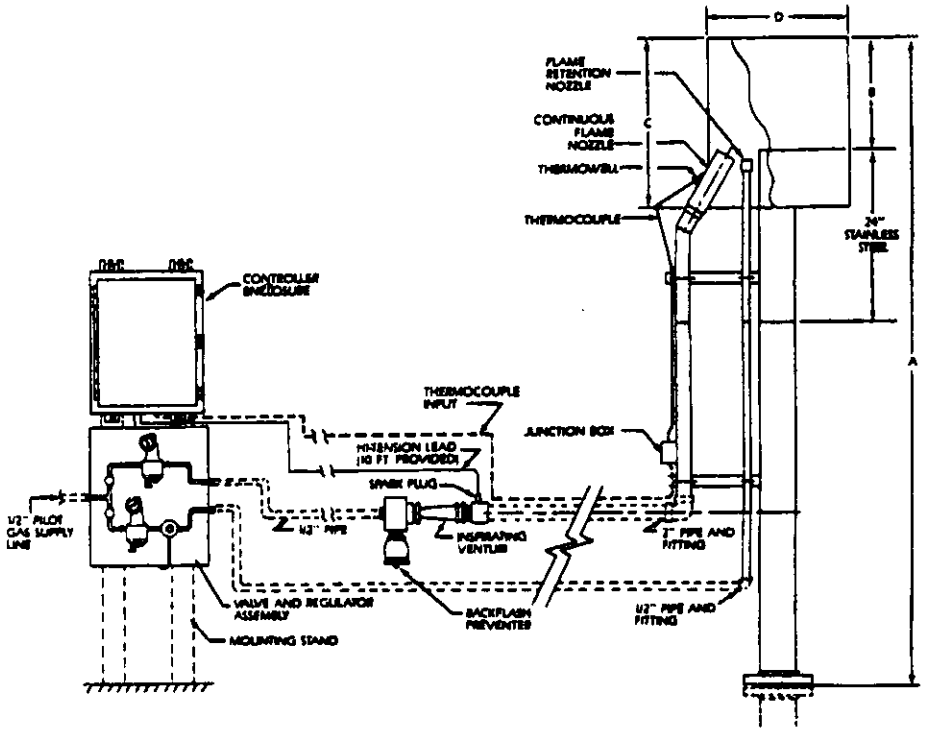
DIMENSIONAL DRAWING

SIZE CODE	2	3	4	6	8	0	1
NOMINAL PIPE SIZE	2 50	3 75	4 100	6 150	8 200	10 250	12 300
A	88 2235	92 2337	92 2337	128 3251	144 3658	176 4470	188 4775
B	12 305	16 406	16 406	20 508	36 914	32 813	44 1118
C	20 508	24 610	24 610	32 813	48 1219	48 1219	60 1524
D	15 381	18 457	20 508	22 559	24 610	30 762	36 914
WEIGHT (BURNER)	150 68	175 79	200 91	300 136	425 193	750 341	950 432

Inches and lb in bold, mm and kg in light
Flange drilling per ANSI 150 PSI raised face

NOTES:

1. SYSTEM MANUFACTURED UNDER PATENT PROTECTION NUMBERS
   UNITED STATES #4025281
   CANADIAN #1054506
2. 2" PIPE TO SLOPE TOWARD VENTURI LINE NOT TO BE BURIED
3. BACKFLASH PREVENTER TO BE A MINIMUM OF 24" ABOVE GRADE AND MOUNTED VERTICALLY AS SHOWN
4. DOTTED LINES INDICATE PIPING, FITTINGS, ETC. BY OTHERS
5. STANDARD VENTURI SYSTEM SHOWN



Installation, mounting arrangement, and dimensions are preliminary general information not to be used for construction. Certified drawings are available.

SPECIFICATIONS

Sizes: 2", 3", 4", 6", 8", 10", and 12"

Connection (Burner Stack): 150 lb ANSI raised face flange

Controller:
- Power supply input: 115 VAC, 60 Hz, standard
- Load: 0.7 Amps at 115 VAC
- Approval: CSA
- Ambient temperature rating:
  −20°F to +150°F (−29°C to +65°C), standard

Remote Alarm Contacts:
- SPDT (NC, NO, and Common) contacts
- Contact Rating: 2 Amps at 115 VAC
- Function: Pilot Out and System Alarm

Controller Enclosure:
- NEMA 4, standard
- NEMA 4X or NEMA 7, optional

Materials of Construction:
- Burner stack — stainless steel shroud and upper 24" of stack; remainder mild steel, standard
- Pilot nozzles — 316 stainless steel
- Thermocouple and thermowell — 316 stainless steel

Pipe length from venturi to continuous flame nozzle:
- Minimum distance 25 feet (8 m)
- Maximum distance 100 feet (30 m)

Pipe length from blower package to continuous flame nozzle:
(for blower option only)
- Minimum distance 25 feet (8 m)
- Maximum distance 33 feet (10 m)

Waste Gas:
- Digester gas, landfill gas, or biogas which is primarily methane and CO_2
- Minimum inlet pressure: 0.5" (12 mm) WC

Pilot Gas:
- Natural Gas
- LPG
- Waste gas of 500 BTU/ft³ minimum
- Minimum supply pressure 10 PSIG (70 kPa)* 27.7" w.c.
- Maximum supply pressure 100 PSIG (700 kPa)*
- *Blower package option should be specified when available pilot gas pressure is less than 10 PSIG (70 kPa) and greater than 6" WC

Options:
- Auto-start signal (specified per order)
  - Dry contact, standard
  - 115 VAC input signal, optional
- Explosion proof pressure switch
  - Operating range: 4" — 20" (100 mm — 500 mm) WC
  - Deadband: Approximately 0.5" (13 mm) WC
- Blower Package
  - General purpose motor, standard
  - Explosion proof motor, optional
- Heater and Thermostat (installed in control enclosure)
  - Rating: 50 Watts, 115 VAC
  - Adjustable Range: 50° to 300°F (10° to 150°C)

BURNING CAPACITY

Flow stated in air at 60°F and 14.7 PSIA at 1/2" (13 mm) WC pressure drop. For capacities at site elevations above sea level, consult factory.

SIZE	FT³/HR	M³/HR
2"	3440	97
3"	10370	294
4"	19890	563
6"	45860	1299
8"	78800	2231
10"	134100	3797
12"	223500	6329

Note: Flow stated in SCFH air can be corrected for waste gas at other specific gravities and temperatures. (See Technical Section)

VAREC 244W SERIES WASTE GAS BURNER AND IGNITION SYSTEM

ORDERING INFORMATION

244W	WASTE GAS BURNER AND IGNITION SYSTEM

Size / Code	Size	2"	3"	4"	6"	8"	10"	12"
	Code	2	3	4	6	8	0	1

Code	Power Requirements (Select One)
1	115/120 VAC, 60 Hz (Standard)
2	230/240 VAC, 50/60 Hz

Code	Electronics Enclosure Rating (Select One)
4	NEMA 4, Weatherproof (standard)
7	NEMA 7, Explosion-proof
9	NEMA 4X, Stainless steel

Code	Auto-Start Option (Select One)
0	None — Manual Start
1	Dry Contact — Pressure switch included
2	Dry Contact — Pressure switch not required
3	12 VAC to 120 VAC signal, non-fluctuating

Code	Pilot Solenoid (Used only with Auto-Start option) (Select One)
0	No Auto-Start option required
1	Pilot solenoid shall fail open (not available with blower package)
2	Pilot solenoid shall fail closed

Code	Blower Package Option (Select One) (Required when pilot gas supply is less than 10 PSIG)
0	None required — pilot gas is 10 PSIG or above
1	Natural Gas — General purpose construction, weatherproof enclosure
2	Natural Gas — Explosion proof construction, weatherproof enclosure
3	Waste Gas — General purpose construction, weatherproof enclosure
4	Waste Gas — Explosion proof construction, weatherproof enclosure
5	Waste Gas — General purpose construction, stainless steel enclosure
6	Waste Gas — Explosion proof construction, stainless steel enclosure
8	Natural Gas — Explosion proof construction, stainless steel enclosure
9	Natural Gas — General purpose construction, stainless steel enclosure

Code	Heater Option (Select One)
0	None required (standard)
1	Heater and thermostat mounted within electronics enclosure

244W	6	1	4	1	1	0	0	(EXAMPLE)

VAREC
a Rosemount Division
10800 Valley View St., Cypress, CA 90630 (714) 761-1300 Telex: 4722044 FAX: (714) 952-2701

APPLICATION FORMS

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

$800 pd. 10-3-89 Rcpt #176064

NORTHEAST DISTRICT
3426 BILLS ROAD
JACKSONVILLE, FLORIDA 32207
904/798-4200

AC 16-170990

APPLICATION TO OPERATE/CONSTRUCT AIR POLLUTION SOURCES

SOURCE TYPE: Four B & W Boilers [ ] New[1] [X] Existing[1]

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

COMPANY NAME: Anheuser-Busch, Inc. COUNTY: Duval

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) Biogas Burners

SOURCE LOCATION: Street 111 Busch Drive City Jacksonville

UTM: East 438.01 North 3366.79

Latitude 30 ° 26 ' 08 "N Longitude 81 ° 38 ' 32 "W

APPLICANT NAME AND TITLE: Dean E. Pusch, Sr. Environmental Scientist

APPLICANT ADDRESS: 202-4, One Busch Place, St. Louis, MO 63118

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative* of Anheuser-Busch, Inc.

I certify that the statements made in this application for a 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: John P. Wilchek

John P. Wilchek, Plant Manager
Name and Title (Please Type)

Date: 9/15/89 Telephone No. (904) 751-0700

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 hav been designed/examined by me and found to be in conformity with modern engineerin principles applicable to the treatment and disposal of pollutants characterized in th permit application. There is reasonable assurance, in my professional judgment, tha

[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 _____

CHARLES M. NOLAN
Name (Please Type)

THE NOLAN COMPANY
Company Name (Please Type)

11560-5 ST. AUGUSTINE ROAD
JACKSONVILLE, FL 32258
Mailing Address (Please Type)

Florida Registration No. 19889 Date 9-6-89 Telephone No. 262-0743

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.

An anaerobic treatment facility is proposed which will treat brewery process wastewater and will generate a byproduct combustible gas. The existing four boilers and the existing cogeneration system duct burner will be modified to burn this gas. A new boiler and redundant flare system will also be constructed. The new boiler will have the capability to fire natural gas.

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

Start of Construction 3-1-90 Completion of Construction 3-1-91

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.)

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

All four boilers are permitted to operate under Permit #A016-140099, dated January 29, 1988 and revised September 26, 1988 and expiring December 31, 1992.

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? N/A

   b. If yes, has "Lowest Achievable Emission Rate" been applied? N/A

   c. If yes, list non-attainment pollutants. 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? No

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.

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		

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

1. Total Process Input Rate (lbs/hr): _____

2. Product Weight (lbs/hr): _____

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	
PM/PM-10	1.0	1.1	N/A	N/A	1.0	1.1	1
NO_x	18.4	20.8	N/A	N/A	18.4	20.8	1
CO	4.9	5.5	N/A	N/A	4.9	5.5	1
VOC	1.0	1.1	N/A	N/A	1.0	1.1	1
SO_2	73.7	37.2	N/A	N/A	73.7	37.2	1

*Emissions are for each of four boilers firing biogas at its rated capacity. Permits are requested to fire biogas in addition to the previously permitted natural gas and fuel oil.

[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)

[3]Calculated from operating rate and applicable standard.

[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)

E. Fuels

Type (Be Specific)	Consumption*		Maximum Heat Input (MMBTU/hr)
	avg/hr	max./hr	
Biogas	33,300 cu ft	129,300 cu ft	97.0

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

Fuel Analysis:

Percent Sulfur: 0.18% H_2S - average; 0.40% H_2S - maximum Percent Ash: --

Density: 0.076 lb/cu ft lbs/gal Typical Percent Nitrogen: 1.0

Heat Capacity: 750 BTU/cu ft 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 5 Maximum 10

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

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

Stack Height: 100 ft. Stack Diameter: 3.5 ft.

Gas Flow Rate: 33000 ACFM 17160 DSCFM Gas Exit Temperature: 410 °F.

Water Vapor Content: 13% % Velocity: 57.2 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?

[ ] Yes [✓] No

Contaminant	Rate or Concentration

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

[ ] Yes [X] No

Contaminant	Rate or Concentration

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

Contaminant	Rate or Concentration

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

1. Control Device/System:
2. Operating Principles:
3. Efficiency:*
4. Capital Costs:

*Explain method of determining

5. Useful Life:

6. Operating Costs:

7. Energy:

8. Maintenance Cost:

9. Emissions:

Contaminant	Rate or Concentration

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).

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:

2. Efficiency:[1]

3. Capital Cost:

4. Useful Life:

5. Operating Cost:

6. Energy:[2]

7. Maintenance Cost:

8. Manufacturer:

9. Other locations where employed on similar processes:

a. (1) Company:

(2) Mailing Address:

(3) City:

(4) State:

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

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions:[1]

Contaminant	Rate or Concentration

(8) Process Rate:[1]

b. (1) Company:

(2) Mailing Address:

(3) City: (4) State:

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions:[1]

Contaminant	Rate or Concentration

(8) Process Rate:[1]

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 N/A

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.

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

$500 pd. 10-3-89 Recpt. #117069

NORTHEAST DISTRICT
3426 BILLS ROAD
JACKSONVILLE, FLORIDA 32207
904/798-4200

AC 16-170991

APPLICATION TO OPERATE/CONSTRUCT AIR POLLUTION SOURCES

SOURCE TYPE: Duct Burner [ ] New[1] [X] Existing[1]

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

COMPANY NAME: Anheuser-Busch, Inc. COUNTY: Duval

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) Biogas burner

SOURCE LOCATION: Street 111 Busch Drive City Jacksonville

UTM: East 437.92 North 3366.81

Latitude 30 ° 26 ' 08 "N Longitude 81 ° 38 ' 32 "W

APPLICANT NAME AND TITLE: Dean E. Pusch, Sr. Environmental Scientist

APPLICANT ADDRESS: 202-4, One Busch Place, St. Louis, MO 63118

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative* of Anheuser-Busch, Inc.

I certify that the statements made in this application for a 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: John P. Wilchek

John P. Wilchek, Plant Manager
Name and Title (Please Type)

Date: 9/15/89 Telephone No. (904) 751-0700

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 _____

CHARLES M. NOLAN
Name (Please Type)

THE NOLAN COMPANY
Company Name (Please Type)

11560-5 ST. AUGUSTINE ROAD
JACKSONVILLE, FL 32258
Mailing Address (Please Type)

Florida Registration No. 19889 Date: 9-6-89 Telephone No. 262-0743

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.

An anaerobic treatment facility is proposed which will treat brewery process wastewater and will generate a combustible gas. The existing cogeneration system duct burner and existing boilers will be modified to burn this gas. A new boiler and redundant flare system will also be constructed. The new boiler will have the capabilities to fire natural gas

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

Start of Construction 3-1-90 Completion of Construction 3-1-91

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.)

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

The duct burner and heat recovery boiler are permitted to operate under permit #A016-147102, dated June 3, 1988, expiring April 30, 1993.

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? N/A

   b. If yes, has "Lowest Achievable Emission Rate" been applied? N/A

   c. If yes, list non-attainment pollutants. 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? No

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.

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		

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

1. Total Process Input Rate (lbs/hr): _____

2. Product Weight (lbs/hr): _____

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	
PM/PM-10	0.4	1.1	N/A	N/A	0.4	1.1	2
NO_x	7.2	20.8	"	"	7.2	20.8	2
CO	1.9	5.5	"	"	1.9	5.5	2
VOC	0.4	1.1	"	"	0.4	1.1	2
SO_2	28.9	37.2	"	"	28.9	37.2	2

*Emissions are from duct burner firing biogas at its rated capacity. Permits are requested to fire biogas in addition to the previously permitted natural gas.

[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)

[3]Calculated from operating rate and applicable standard.

[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)

E. Fuels

Type (Be Specific)	Consumption*		Maximum Heat Input (MMBTU/hr)
	avg/hr	max./hr	
Biogas	33,300 cu ft	50,700 cu ft	38.0

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

Fuel Analysis: 0.18% H_2S - average

Percent Sulfur: 0.40% H_2S - maximum Percent Ash: --

Density: 0.076 lb/cu ft lbs/gal Typical Percent Nitrogen: 1.0

Heat Capacity: 750 BTU/cu ft 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 Geometry and Flow Characteristics (Provide data for each stack):

Stack Height: 100 ft. Stack Diameter: 5.8 ft.

Gas Flow Rate: 102,590 ACFM 64725 DSCFM Gas Exit Temperature: 285 °F.

Water Vapor Content: 6.2 % Velocity: 64.1 FPS

Commom stack with combustion turbine

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?

[ ] Yes [X] No

Contaminant	Rate or Concentration

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

[ ] Yes [X] No

Contaminant	Rate or Concentration

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

Contaminant	Rate or Concentration

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

1. Control Device/System:
2. Operating Principles:
3. Efficiency:*
4. Capital Costs:

*Explain method of determining

5. Useful Life:

6. Operating Costs:

7. Energy:

8. Maintenance Cost:

9. Emissions:

Contaminant	Rate or Concentration

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).

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:

2. Efficiency:[1]

3. Capital Cost:

4. Useful Life:

5. Operating Cost:

6. Energy:[2]

7. Maintenance Cost:

8. Manufacturer:

9. Other locations where employed on similar processes:

a. (1) Company:

(2) Mailing Address:

(3) City:

(4) State:

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

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions:[1]

Contaminant	Rate or Concentration

(8) Process Rate:[1]

b. (1) Company:

(2) Mailing Address:

(3) City: (4) State:

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions:[1]

Contaminant	Rate or Concentration

(8) Process Rate:[1]

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 N/A

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.

$1,000 pd.
10-3-89
Rcpt. #117644

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

NORTHEAST DISTRICT
3426 BILLS ROAD
JACKSONVILLE, FLORIDA 32207
904/798-4200

AC 16-170992

APPLICATION TO OPERATE/CONSTRUCT AIR POLLUTION SOURCES

SOURCE TYPE: Gas-fired Boiler [X] New[1] [ ] Existing[1]

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

COMPANY NAME: Anheuser-Busch, Inc. COUNTY: Duval

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) Wastewater Boiler

SOURCE LOCATION: Street 111 Busch Drive City Jacksonville

UTM: East 437.65 North 3367.01

Latitude ____° ____' ____"N Longitude ____° ____' ____"W

APPLICANT NAME AND TITLE: Dean E. Pusch Sr. Environmental Scientist

APPLICANT ADDRESS: 202-4, One Busch Place, St. Louis, MO 63118

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative* of Anheuser-Busch, Inc.

I certify that the statements made in this application for a 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: John P. Wilchek

John P. Wilchek, Plant Manager
Name and Title (Please Type)

Date: 9/15/87 Telephone No. (904) 751-0700

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, tha

[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 _____

CHARLES M. NOLAN
Name (Please Type)

THE NOLAN COMPANY
Company Name (Please Type)

11560-5 ST. AUGUSTINE ROAD
JACKSONVILLE, FL 32258
Mailing Address (Please Type)

Florida Registration No. 19889 Date: 9-6-89 Telephone No. 262-0743

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.

An anaerobic treatment facility is proposed which will treat brewery process wastewater and will generate a byproduct combustible gas. A new boiler, capable of firing this biogas, as well as natural gas will be constructed to heat the wastewater stream to its appropriate temperature.

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

Start of Construction 3/1/90 Completion of Construction 3/1/91

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.)

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

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? N/A

   b. If yes, has "Lowest Achievable Emission Rate" been applied? N/A

   c. If yes, list non-attainment pollutants. 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? No

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.

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		

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

1. Total Process Input Rate (lbs/hr): _____

2. Product Weight (lbs/hr): _____

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	
PM/PM-10	0.1	0.3	N/A	N/A	0.1	0.3	
NO_x	1.2	5.3	"	"	1.2	5.3	
CO	16.8	73.6	"	"	16.8	73.6	
VOC	0.2	0.8	"	"	0.2	0.8	
SO_2	9.1	18.0	"	"	9.1	18.0	

*Emissions are from firing biogas at boiler rating of 12 MM BTU/hr. Permits are requested to fire biogas and natural gas.

[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)

[3]Calculated from operating rate and applicable standard.

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

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? N/A

   b. If yes, has "Lowest Achievable Emission Rate" been applied? N/A

   c. If yes, list non-attainment pollutants. 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? No

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.

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		

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

1. Total Process Input Rate (lbs/hr): _____

2. Product Weight (lbs/hr): _____

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	
PM/PM-10	0.1	0.4	N/A	N/A	0.1	0.4	3
NO_x	1.7	7.4	"	"	1.7	7.4	3
CO	0.4	1.8	"	"	0.4	1.8	3
VOC	0.03	0.1	"	"	0.03	0.1	3
SO_2	0.01	0.04	"	"	0.01	0.04	3

*Emissions are from firing natural gas at boiler rating of 12 MM BTU/hr. Permits are requested to fire biogas and natural gas

[1]See Section V, Item 2.

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

[3]Calculated from operating rate and applicable standard.

[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)

E. Fuels

Type (Be Specific)	Consumption*		Maximum Heat Input (MMBTU/hr)
	avg/hr	max./hr	
Biogas	16,000 cu ft	16,000 cu ft	12.0

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

Fuel Analysis:

Percent Sulfur: 0.18% H_2S average 0.40% H_2S maximum Percent Ash: --

Density: 0.076 lb/cu ft lbs/gal Typical Percent Nitrogen: 1.0

Heat Capacity: 750 BTU cu ft 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 Geometry and Flow Characteristics (Provide data for each stack):

Stack Height: 40 ft. Stack Diameter: 1.67 ft.

Gas Flow Rate: 2500 ACFM 1466 DSCFM Gas Exit Temperature: 400 °F.

Water Vapor Content: 3 % Velocity: 19.0 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) _____

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)

E. Fuels

Type (Be Specific)	Consumption*		Maximum Heat Input (MMBTU/hr)
	avg/hr	max./hr	
Natural Gas	12000 cu ft	12000 cu ft	12.0

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

Fuel Analysis:

Percent Sulfur: _____ Percent Ash: _____

Density: 0.044 lb/cu ft lbs/gal Typical Percent Nitrogen: 1.0

Heat Capacity: 1000 BTU/cu ft 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 Geometry and Flow Characteristics (Provide data for each stack):

Stack Height: 40 ft. Stack Diameter: 1.67 ft.

Gas Flow Rate: 2500 ACFM 1466 DSCFM Gas Exit Temperature: 400 °F.

Water Vapor Content: 3 % Velocity: 19.0 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?

[ ] Yes [X] No

Contaminant	Rate or Concentration

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

[ ] Yes [X] No

Contaminant	Rate or Concentration

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

Contaminant	Rate or Concentration

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

1. Control Device/System:
2. Operating Principles:
3. Efficiency:*
4. Capital Costs:

*Explain method of determining

5. Useful Life:

6. Operating Costs:

7. Energy:

8. Maintenance Cost:

9. Emissions:

Contaminant	Rate or Concentration

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).

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:

2. Efficiency:[1]

3. Capital Cost:

4. Useful Life:

5. Operating Cost:

6. Energy:[2]

7. Maintenance Cost:

8. Manufacturer:

9. Other locations where employed on similar processes:

a. (1) Company:

(2) Mailing Address:

(3) City:

(4) State:

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

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions:[1]

Contaminant	Rate or Concentration

(8) Process Rate:[1]

b. (1) Company:

(2) Mailing Address:

(3) City: (4) State:

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions:[1]

Contaminant	Rate or Concentration

(8) Process Rate:[1]

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

N/A

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.

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

$1000 pd. 10-3-89 Recpt. #117664

NORTHEAST DISTRICT
3426 BILLS ROAD
JACKSONVILLE, FLORIDA 32207
904/798-4200

AC 16-170993
AC 16-170994

APPLICATION TO OPERATE/CONSTRUCT AIR POLLUTION SOURCES

SOURCE TYPE: Biogas Flare (with backup) [X] New[1] [ ] Existing[1]

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

COMPANY NAME: Anheuser-Busch, Inc. COUNTY: Duval

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) Biogas Flares

SOURCE LOCATION: Street 111 Busch Drive City Jacksonville

UTM: East 437.65 North 3367.01

Latitude ____° ____' ____"N Longitude ____° ____' ____"W

APPLICANT NAME AND TITLE: Dean E. Pusch Sr. Environmental Scientist

APPLICANT ADDRESS: 202-4, One Busch Place, St. Louis, MO 63118

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative* of Anheuser-Busch, Inc.

I certify that the statements made in this application for a 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: John P. Wilchek

John P. Wilchek, Plant Manager
Name and Title (Please Type)

Date: 7/15/89 Telephone No. (904) 751-0700

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 characteristic of 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 _____

CHARLES M. NOLAN
Name (Please Type)

THE NOLAN COMPANY
Company Name (Please Type)

11560-5 ST. AUGUSTINE ROAD
JACKSONVILLE, FL 32258
Mailing Address (Please Type)

Florida Registration No. 19889 Date: 9-6-89 Telephone No. 262-0743

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.

An anaerobic treatment facility is proposed which will treat brewery process wastewater and will generate a byproduct combustible gas. This biogas will be combusted in the existing boilers, the existing duct burner and a new boiler. At times this gas will need to be flared; two flares, one operating as a backup, are proposed

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

Start of Construction 3/1/90 Completion of Construction 3/1/91

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.)

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

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? Yest

   a. If yes, has "offset" been applied? No

   b. If yes, has "Lowest Achievable Emission Rate" been applied? No

   c. If yes, list non-attainment pollutants. 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? No

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.

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		

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

1. Total Process Input Rate (lbs/hr): _____

2. Product Weight (lbs/hr): _____

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	
PM/PM-10	0.6	1.1	N/A	N/A	0.6	1.1	4
NO_x	11.2	20.8	"	"	11.2	20.8	4
CO	3.0	5.5	"	"	3.0	5.5	4
VOC	0.6	1.1	"	"	0.6	1.1	4
SO_2	44.9	37.2	"	"	44.9	37.2	4

[1]See Section V, Item 2.

*Emissions are from one flare combusting all biogas produced. Permits are requested for two flares, one serving as a backup.

[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)

[3]Calculated from operating rate and applicable standard.

[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)
VAREC 244W	H_2S	100%	N/A	total conversion to SO_2
(typical, actual vendor not selected)				

E. Fuels

Type (Be Specific)	Consumption*		Maximum Heat Input (MMBTU/hr)
	avg/hr	max./hr	
Biogas	33,300 cu ft	78,800 cu ft	59.1

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

Fuel Analysis:

Percent Sulfur: 0.18% H_2S - average; 0.40% H_2S - maximum Percent Ash: --

Density: 0.076 lb/cu ft 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 Geometry and Flow Characteristics (Provide data for each stack):

Stack Height: 20 ft. Stack Diameter: 2.0 ft.

Gas Flow Rate: 1300 ACFM -- DSCFM Gas Exit Temperature: 800-1200 °F.

Water Vapor Content: -- % Velocity: _____ 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 Diameter: _____ 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?

[ ] Yes [X] No

Contaminant	Rate or Concentration

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

[ ] Yes [X] No

Contaminant	Rate or Concentration

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

Contaminant	Rate or Concentration

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

1. Control Device/System:
2. Operating Principles:
3. Efficiency:*
4. Capital Costs:

*Explain method of determining

5. Useful Life:

6. Operating Costs:

7. Energy:

8. Maintenance Cost:

9. Emissions:

Contaminant	Rate or Concentration

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).

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:

2. Efficiency:[1]

3. Capital Cost:

4. Useful Life:

5. Operating Cost:

6. Energy:[2]

7. Maintenance Cost:

8. Manufacturer:

9. Other locations where employed on similar processes:

a. (1) Company:

(2) Mailing Address:

(3) City:

(4) State:

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

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions:[1]

Contaminant	Rate or Concentration

(8) Process Rate:[1]

b. (1) Company:

(2) Mailing Address:

(3) City: (4) State:

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions:[1]

Contaminant	Rate or Concentration

(8) Process Rate:[1]

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 N/A

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.

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

$200 pd
10-3-89
Recpt. #117664

NORTHEAST DISTRICT
3426 BILLS ROAD
JACKSONVILLE, FLORIDA 32207
904/798-4200

AC 16-170995

APPLICATION TO OPERATE/CONSTRUCT AIR POLLUTION SOURCES

SOURCE TYPE: Vent Gas H_2S Scrubber [X] New[1] [ ] Existing[1]

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

COMPANY NAME: Anheuser Busch, Inc. COUNTY: Duval

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) H_2S Scrubber

SOURCE LOCATION: Street 111 Busch Drive City Jacksonville

UTM: East 437.65 North 3367.01

Latitude ____° ____' ____"N Longitude ____° ____' ____"W

APPLICANT NAME AND TITLE: Dean E. Pusch Sr. Environmental Scientist

APPLICANT ADDRESS: 202-4, One Busch Place, St. Louis, MO 63118

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative* of Anheuser-Busch, Inc.

I certify that the statements made in this application for a 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: John P. Wilchek

John P. Wilchek, Plant Manager
Name and Title (Please Type)

Date: 9/15/89 Telephone No. (904) 751-0700

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 hav been designed/examined by me and found to be in conformity with modern engineerin principles applicable to the treatment and disposal of pollutants characterized in th permit application. There is reasonable assurance, in my professional judgment, tha

[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 _____

CHARLES M. NOLAN
Name (Please Type)

THE NOLAN COMPANY
Company Name (Please Type)

11560 SAINT AUGUSTINE ROAD
JACKSONVILLE, FL 32258
Mailing Address (Please Type)

Florida Registration No. 19889 Date: 9-6-89 Telephone No. 262-0743

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.

An anaerobic treatment facility is proposed which will treat brewery process wastewater and will generate a byproduct combustible gas. This biogas will be combusted in the existing boilers and duct burner and in a new boiler and flare. The headspace in the anaerobic reactors and other tanks and sumps are vented to an odor control scrubber.

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

Start of Construction 3-1-90 Completion of Construction 3-1-91

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.)

$165,000

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

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? N/A

   b. If yes, has "Lowest Achievable Emission Rate" been applied? N/A

   c. If yes, list non-attainment pollutants. 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? No

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.

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		

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

1. Total Process Input Rate (lbs/hr): _____

2. Product Weight (lbs/hr): _____

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	
H_2S	0.05	0.04	N/A	N/A	5.0	4.0	5

[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)

[3]Calculated from operating rate and applicable standard.

[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)
Calvert Odor Control System (typical, actual vendor not selected)	H_2S	99	N/A	Manuf. data

E. Fuels

Type (Be Specific)	Consumption*		Maximum Heat Input (MMBTU/hr)
	avg/hr	max./hr	
N/A			

*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.

1.2 gpm to wastewater (to POTW or land application on-site)

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

Stack Height: 30 ft. Stack Diameter: 1.5 ft.

Gas Flow Rate: 3000 ACFM _____ DSCFM Gas Exit Temperature: ambient °F.

Water Vapor Content: _____ % Velocity: 28.3 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?

[ ] Yes [X] No

Contaminant	Rate or Concentration

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

[ ] Yes [X] No

Contaminant	Rate or Concentration

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

Contaminant	Rate or Concentration

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

1. Control Device/System:
2. Operating Principles:
3. Efficiency:*
4. Capital Costs:

*Explain method of determining

5. Useful Life:

6. Operating Costs:

7. Energy:

8. Maintenance Cost:

9. Emissions:

Contaminant	Rate or Concentration

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).

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:

2. Efficiency:[1]

3. Capital Cost:

4. Useful Life:

5. Operating Cost:

6. Energy:[2]

7. Maintenance Cost:

8. Manufacturer:

9. Other locations where employed on similar processes:

a. (1) Company:

(2) Mailing Address:

(3) City:

(4) State:

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

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions:[1]

Contaminant	Rate or Concentration

(8) Process Rate:[1]

b. (1) Company:

(2) Mailing Address:

(3) City: (4) State:

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions:[1]

Contaminant	Rate or Concentration

(8) Process Rate:[1]

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 N/A

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.

Anheuser-Busch, Inc.
ONE OF THE ANHEUSER-BUSCH COMPANIES

0566

DATE	VENDOR NO.	AMOUNT OF CHECK
08/30/89	3624366	******$2,200.00

AMOUNT OF CHECK: TWO THOUSAND TWO HUNDRED AND 00/100**********

NAME AND ADDRESS	CHECK NO.
	30900660

PAY TO THE ORDER OF

FLORIDA DEPARTMENT OF
ENVIRONMENTAL REGULATION
2600 BLAIR STONE RD
TALLAHASSEE FL 32399

Gerald C. Illegible

62-23
311
MORGAN BANK (DELAWARE)
WILMINGTON, DE. 19801

"30900660" :031100238: 230 26 700"

Tallahassee, Florida 32301

001031

Dear Mr. Fancy:

Enclosed please find four copies of an application to construct an anaerobic treatment facility at the Anheuser-Busch, Inc. brewery in Jacksonville. This facility will treat brewery process wastewater. The process generates a byproduct gas that is proposed to be combusted in fuel-fired sources at the brewery. The gas will be fired in the existing boilers, the existing cogeneration system's duct burner, a new boiler for wastewater temperature control, and/or a redundant flare system. The treatment facility will also include a wet scrubber to prevent process area odors.

A check for $2200.00 is enclosed to cover the application fee. Please don't hesitate to call me at (314) 577-4162 with any questions on this project.

Sincerely,

ANHEUSER-BUSCH COMPANIES, INC.

Dean E. Pusch

Dean E. Pusch
Sr. Environmental Engineer

DEP:cd

Enclosure