

CITY OF CAPE TOWN ENVIRONMENTAL HEALTH SPECIALISED SERVICES AIR QUALITY MANAGEMENT

APPLICATION FORM FOR VARIATION OF ATMOSPHERIC EMISSION LICENCE / PROVISIONAL ATMOSPHERIC EMISSION LICENCE IN TERMS OF CHAPTER 5 OF THE NATIONAL ENVIRONMENTAL MANAGEMENT: AIR QUALITY ACT, 2004 (ACT NO. 39 OF 2004)

City of Cape Town Air Quality Management 246 Voortrekker Road Vasco 7460 P.O Box 2815 Cape Town 8000 Tel: (021) 590 1419 Fax: (021) 590 1621

Name of Enterprise:

County Fair Foods

Declaration of accuracy of information provided:

Application for an atmospheric emission licence / provisional atmospheric emission licence as envisaged in chapter 5 of the National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004).

I, <u>Matthys Potgieter</u> declare that the information provided in this application or attached to the application is, to the best of my knowledge, in all respects factually true and correct. I am aware that the supply of false or misleading information in the application form is a criminal offence in terms of section 51(1)(f) of the Act.

Not signed. Draft for comment. This form only forms the bases of the information that will be uploaded on the AEL application platform on the SAAILIP website system once the Environmental Authorization was issued.

Facility Manager, County Fair Foods CAPACITY OF SIGNATORY

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NB: PLEASE COMPLETE ALL SECTIONS. KINDLY MARK WITH AN X IN SPACES WHERE APPLICABLE. IF THE SPACE PROVIDED IS INSUFFICIENT, THE REQUIRED INFORMATION MAY BE SUBMITTED IN THE FORM OF A MEMORANDUM. ATTACH REQUIRED MAPS AND SKETCHES. GRAPHICS MUST BE CLEAR, LABELED AND, WHERE APPLICABLE.

1668

1 TYPE OF APPLICATION

New Application		Transfer
Renewal	X	Variation/Amendment/Review

Current APPA Permit / Atmospheric Emission Licence Number:

2 ENTERPRISE INFORMATION

Enterprise Name	County Fair a Division of Astral
Trading As	County Fair
Type of Enterprise, e.g. Company/Close Corporation/Trust, etc	Company
Company/Close Corporation/Trust Registration Number (Registration Numbers if Joint Venture)	1947/027453/06
Registered Address	P.O. Box 94 EPPINDUST 7475
Postal Address	P.O. Box 94 EPPINDUST 7475
Telephone Number (General)	(021) 884 3013
Fax Number (General)	(021) 884 4027
Industry Type/Nature of Trade	Poultry Abattoir
Land Use Zoning as per Town Planning Scheme	Agri-Industrial II
Land Use Rights if outside Town Planning Scheme	N.A.

Responsible Person Name or Emission Control Officer (where appointed)	Mr Danie Ras and Matthys Potgieter	
Telephone Number	(021) 884 3013	
Cell Phone Number	0726385169	
Fax Number	(021) 884 4027	
E-mail Address	Daniel.Ras@countyfair.co.za	
After Hours Contact Details	082 609 0987	

3 SITUATION AND EXTENT OF PLANT

3.1 Location and extent of plant

Physical Address of the Plant	Portion 16 of Farm Jumbo No. 724, Joostenbergvlakte, Kraaifontein		
Description of Site (Where No Street Address)	Klipheuwel Road, Farm Jumbo No. 724		
Coordinates of Approximate Center of	North-south: 33° 47' 38		
Operations	East-west: 18° 44' 42		
Extent (km²)	100.2723 ha		
Elevation Above Mean Sea Level (m)	126 m		
Province	Western Cape		
Metropolitan/District Municipality	City of Cape Town		
Local Municipality	City of Cape Town		
Designated Priority Area	No		

3.2 Description of surrounding land use (within 5 km radius)

Provide a description of the surrounding land use within a 5 km radius, specifically noting the names and proximity of residential and commercial areas in relation to the site of the works.

The Poultry Abattoir and by-product factory is located in a rural area on Agri-Industrial farmland off Klipheuwel Road. The surrounding land use is agricultural land mainly for poultry farming. Fisantekraal Airport is approximately 2.5km from the site; the town of Fisantekraal is approximately 2.5km from site. The Uitzicht residential area and Kraaifontein are approximately 5km from the site and Joostenberg Vlakte itself some ± 3.5 km.



Figure 1: Aerial photograph of the Abattoir and Sterilization Plant indicates the surrounding farm land around the Abattoir a

4 NATURE OF PROCESS

4.1 Process description

Please provide a detailed description of the entire production process including reference to the overall balance sheet of inputs, outputs and emissions at the site of the works.



Animal Matter Reduction Process

The process channels raw material to the existing rendering facility. Raw product Waste Rendered will consists of Feather Meal Input Material – 546 546 kg/week and Poultry Meal Input material – 805 605kg/week with a total of 1 392 431 kg/week or 199 tons per day.

This process comprises feathers, blood and recovered protein to the feather plant and mortalities, mala and blood from the abattoir and farms to the poultry mix line; thereafter into seven John Thompson Cookers with a five and a half ton capacity each.

The cycle comprises a pressure cook, an atmospheric cook and a drying period. The dry meal is discharged, milled and packed. The process can produce finished product comprising 84 (600kg bags) poultry meal and 16 150 litre oil per day.

The Sterilization Plant consists of the following sections:

The product reception area has two receiving hoppers, one for feathers and the other hopper for mala which comprises intestines, rejected feet, heads and mortalities received from the farms and other reject chicken by products which are received from the abattoir.

The hydrolysers (cookers) operate the process of loading, processing and discharging. Four of the hydrolysers (cookers) are utilised in a single stream to process the feathers and blood generated by the abattoir slaughter process.

The remaining materials of varying volumes consisting of mortalities, dead on arrivals, excess heads and viscera are processed on the separate poultry mix line.

A poultry crusher that homogenizes the variety of raw material input is coupled with a pump to regulate the flow rate to the continuous poultry mix meal line. This line consists of a continuous drier that dries the raw material. The dried material is then processed in 3 hydrolysers (cookers) and then flows into an oil press that extracts the oils from the poultry mix products.

Some of these oils are routed back into the drier to aid the drying process and the remaining oil goes through a decanter.

The plant is able to handle the varied supply of raw material while providing the oil pressing plant with a continuous steady feed to ensure best meal and oil consistency. A major advantage of the plant is that this process is flexible by nature to enable continuous processing of the varied raw materials, with no changeover required to the plant and equipment.

A continuous air cooler with filters is installed in line after the feather drier and poultry press. The air cooling is more effective opposed to the closed loop drying system utilizing ambient air. The grinding, weighing and bagging process with filter system ensures continuous flow.

The final product area consists of a reception hopper for the sterilized material from the cookers and the hammer mill for refining of the product which is subsequently transferred to large storage bags.

Expansion to the existing Rendering facility:

Feather and Blood line:

Based on a 144 hours / week as opposed to the 120 hours currently operating at, the feather drier will be sufficient if extra drying in the batch cookers is increase until 55% moisture. Therefore 1 additional cooker (5.5 ton) will be installed for the feather blood line.

Carcass line:

An additional pre-cooker (5.5 ton) will be installed to handle the additional raw material and moisture. 1 additional cooker (5.5 ton) will be installed to the carcass line will be required.

Therefore, the rendering facility will be expanded by installing two new (5.5 ton cookers and one precooker (5.5 ton) to treat the additional material received from the abattoir.



Figure 2: Cookers to milling plant

Steam used in the process is generated by three boilers. Two 5 ton and one 10 ton John Thompson Coal Fired Boilers (with three boiler chimneys).

The final product area consists of a Reception Hopper for the sterilized material from the Cookers and the Hammer Mill for the refining of the product which is subsequently transferred to large storage bags. The bags are subsequently transported to Paarl and Malmesbury.

Presently all rendered meal produced by County Fair is supplied to Meadow Feeds Paarl for inclusion in the poultry broiler feed rations and oil is supplied to Superior Systems.

Odour Control

Four water cooled condensers and two cooling tower control odours from the hydrolysing process. The noncondensable gasses and condensate from condensers are treated with ozone generators at 100grams/hour.

The emissions from the sterilization plant are ozone treated to neutralize hydrogen sulphide and ammonia vapours.

(Refer to process flow chart Section 4.5 Graphical Process Information)

4.2 Listed activities

List all Listed Activities, as published in terms of section 21 of the National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004), proposed to be conducted at the premises in terms of this application:

Listed Activity Number	Category of Listed Activity	Sub-category of the Listed Activity	Name of the Listed Activity	Description of the Listed Activity
19	10	N.A.	Animal matter processing	Sterilization of animal matter not intended for human consumption.

Despite the repeal of the Atmospheric Pollution Prevention Act, 1965 (Act No. 45 of 1965), list all Scheduled Process(es), as was or were set out in the Second Schedule of the repealed Atmospheric Pollution Prevention Act, 1965, <u>currently conducted at the premises</u>:

APPA Registration Certificate Number	Date of Registration Certificate	Scheduled Process Number	Scheduled Process Description
1668	8.8.1988	No. 69 of the second schedule	To be addressed by Air Pollution section.

4.3 Unit process

List all unit processes associated with the listed activities in operation at the premises by the atmospheric emission licence holder, <u>highlighting unit processes proposed in respect of this application</u>:

Unit Process Unit Process Function		Batch or Continuous Process
Reception	Temporary storage of mala (intestines) feathers and blood	Batch / Continuous
Cooker Area	Sterilization of mala, feathers, blood, mortalities	Batch / Continuous
Final Product	Storage, milling and bagging of processed material	Batch / Continuous

*Unit process means a single component (equipment) with identifiable inputs and outputs within a process flow. A series of unit processes make up the full manufacturing process, for example, boiler, furnace, distillation column, etc.

Please provide any other unit processes currently conducted at the site of works.

Name of the Unit Process	Description of the Unit Process		
Poultry Abattoir			
Slaughter area	Storage and Slaughtering of 367 000 chickens per day		
Defeathering Section	Defeathering of slaughtered chickens		
Evisceration Section	Removal of intestines and giblets		
Cutting Up and Packing Section	Cutting up of chickens in portions and packing of the products		
Freezer Room and Despatch	Temporary storage of chicken portions and despatch to clients		
By-Products handling Section	All by-products are treated at the Rendering Plant		

4.4 Hours of operation

Provide the hours of operation of all unit processes associated with the listed activities in operation at the premises by the atmospheric emission licence holder, <u>highlighting unit processes proposed in respect of this application</u>:

Unit Process	Operating Hours	Number of Days Operated per Year
Reception	24 hours	All
Cooker Section	24 hours	All
Final Product Section	24 hours	All

		Except 25, 26 December and 1 January
Shift Times	Monday 00h00 to Saturday 06h00	Shift commences Monday 00h00 Ends Saturday 06h00

4.5 Graphical process information

Attach the following for the entire operation being undertaken at the site of the works:

- Simplified block diagram with the name of each unit process in a block; showing links between all unit processes or blocks.
- Process flow chart(s) clearly indicating inputs, outputs and emissions at the site of works, including points of
 potential fugitive emissions and emergency releases.
- Site layout diagram (plan view and to scale) indicating location of unit processes, plants, buildings, stacks, stockpiles and roads (include true north arrow and scale).

<u>NB:</u> Indicate clearly on the above graphics the listed activity or activities applied for in this application. Alternatively, provide additional graphics for the listed activity or activities applied for.

SCHEMATIC DAIGRAM OF THE PLANT AND PRODUCT FLOW



1 RECEPTION SECTION

2 COOKER SECTION

3 BLENDING & BAGGING





Figure 4: Site Development Plan (Abattoir and Sterilization Plant)



Figure 5: Site Development Plan (Sterilation Plant)

5 RAW MATERIALS AND PRODUCTS

Provide raw material information, production and by-production rates and emissions information.

5.1 Raw materials used

Raw Material Type	Maximum Permitted Consumption Rate (Quantity)	Design Consumption Rate (Quantity)	Actual Consumption Rate (Quantity)	Units (Quantity/Period)
Poultry Meal Input material	805 605kg/week	805 605kg/week	805 605kg/week	Batches cooked per day.
Feather Meal Input Material	546 546 Kg/ week	546 546 Kg/ week	546 546 Kg/ week	
Total kg/ week	1 392 431 kg/week	1 392 431 kg/week	1 392 431 kg/week	

5.2 Production rates

Production Name	Maximum Production Capacity Permitted (Quantity)	Design Production Capacity (Quantity)	Actual Production Capacity (Quantity)	Units (Quantity/Period)	
Poultry Meal	31 016.16Kg/ day	31 016.16Kg/ day	31 016.16Kg/ day	Batches cooked per	
Feather Meal	19 383.84Kg/ day	19 383.84Kg/ day	19 383.84Kg/ day	day. 84 (600 kg bags) and 16150 litre oil per day	

By-Product Name	Maximum Production Capacity Permitted (Quantity)	Design Production Capacity (Quantity)	Actual Production Capacity (Quantity)	Units (Quantity/Period)
No By-Products produced	N.A.	N.A.	N.A.	N.A.

5.3 Materials used in energy sources

The applicant must specify the materials used in energy sources, namely, coal, oil, gas or wood.

Materials for Energy	Sulphur Content of the Material (%)	Ash Content of Material (%)	Maximum Permitted Consumption Rate (Quantity)	Design Consumption Rate (Quantity)	Actual Consumption Rate (Quantity)	Units (Quantity/ Period)
Grade A Pea coal	1.04%	17.3%	900 000Kg/ month	900 000Kg/ month	450 000Kg/ month	40 909Kg/ day

5.4 Sources of atmospheric emission (including all tiers of greenhouse gas)

Provide emissions averaging periods that correspond to the averaging periods as set out in the national ambient air quality standards published under Government Notice No. 1210, Gazette No. 32816 dated 24 December 2009, and/or the minimum averaging periods of the relevant pollutant in relation to its health impact.

5.4.1 Point source parameters

Unique Stack ID	Source Name	Latitude (decimal degrees)	Longitude (decimal degrees)	Height of Release Above Ground (m)	Height Above Nearby Building (m)	Diameter at Stack Tip / Vent Exit (m)	Actual Gas Exit Temperature (°C)	Actual Gas Volumetric Flow (m³/hr)	Actual Gas Exit Velocity (m/s)
71818	John Thompson Coal Fired Boiler 1 (with boiler chimney)	33 47 38	18 44 43	23m		900mm	185°C	34 m³	
71819	John Thompson Coal Fired Boiler 2 (with boiler chimney)	33 47 38	18 44 43	23m		900mm	185°C	34 m³	
73440	John Thompson Coal Fired Boiler 3 (with boiler chimney)	33 47 38	18 44 43	23m		900mm	185°C	34 m³	
	Condenser Exhaust	33 47 38	18 44 43	7m	10m	800mm	107° C.	43200m³/ hr	7.5m/s

*Point source means a single identifiable source and fixed location of atmospheric pollution, e.g. stack, chimney, etc.

5.4.2 Point Source Emissions

Provide emission values as being measured under normal conditions of 273 K, 101. 3 kPa, specific oxygen percentage and dry gas.

As per 5.4.1 ID	Pollutant Name	Pollutant Name Maximum Release Rate					Type of Emissions (Continuous / Routine but
		(mg/Nm³)	(mg/Am³)	g/s	Averaging period		Intermittent / Emergency Only)
NA	Not applicable to Rendering Plant						

5.4.3 Point source current emissions monitoring

Provide information on emission monitoring requirements.

As per 5.4.1 ID	Emission Sampling / Monitoring Method	Sampling Frequency	Sampling Duration	Measured Parameters
	The Hydrogen Sulphide and Ammonia must be measured using a baseline passive survey over 2 week period on the fence line of the premises in the 4 major wind directions once as year.	Once a year	2 weeks	ppb and µg/m³

5.4.4 Point source emission estimation information

As per 5.4.1 ID	Basis for Emission Rates
	Not applicable to Rendering Plant

5.4.5 Area and/or line source parameters

Unique Area Source ID	Source Name	Source Description	Latitude (decimal degrees) of SW corner	Longitude (decimal degrees) of SW corner	Height of Release Above Ground (m)	Length of Area (m)	Width of Area (m)	Angle of Rotation from True North (°)
	Not applicable to Rendering Plant							

*Area source means air pollution source from a specified area, e.g., pollution from a landfill site, fugitive dust from a process. *Line source means a moving source of pollutants, e.g., motor vehicles.

5.4.6 Area and/or line source emissions

As per 5.4.5 ID	Pollutant Name	Maximum Release Rate (quantity per period)	Average Annual Release Rate (quantity per period)	Emission Hours	Type of Emission (Continuous / Intermittent)	Wind Dependent (Yes / No)
	Only low levels of Hydrogen Sulphate and Ammonia is released from the Reception and Cooker Sections					

Area and/or line source – management and mitigation measures

Provide information on management and mitigation measures.

As per 5.4.5 ID	Description of Specific Measures	Timeframe for Implementation of Specific Measures	Method of Monitoring Measure Effectiveness	Contingency Measure
Reception	Treated with 100 grams of Ozone per hour	In use	Recording H2S & NH3	N.A.
Cooker (Non condensable cooker gas)	Treated with 100 grams of Ozone per hour	In use	Recording H2S & NH3	N.A.
All	All steam from the cooking process is condensed in tubular condensers. The non- condensable gasses are piped to boilers where they are re introduced into the back of the broilers (fire side). The boiler chimneys discharge at a height of 29m above ground.	In use		
	Time Frame for continuous monitoring at regular intervals to be determined by die Air Quality Management on receipt of the application	on.		

5.4.7 Area and/or line source emission estimation information

As per 5.4.5 ID	Basis for Emission Rates
	Not Applicable

6 APPLIANCES AND MEASURES TO PREVENT AIR POLLUTION

6.1 Appliances and control measures

Provide information on appliances and measures implemented to prevent air pollution for the entire operation at the site of the works, <u>highlighting information for listed activity or activities</u> proposed in respect of this application.

Appliances				Abatement Equipment Control Technology							
Associated Unique Stack ID	Appliance / Process Equipment Number	Appliance Type / Description	Appliance Serial Number	Abatement Equipment Manufacture Date	Abatement Equipment Name and Model	Abatement Equipment Technology Type	Commission Date	Date of Significant Modification / Upgrade	Design Capacity	Minimum Control Efficiency (%)	Minimum Utilization (%)
See description of ozone system on next page.											
All steam from the cooking process is condensed in tubular condensers. The side). The boiler chimneys discharge at a height of 29m above ground.					e non- conder	nsable gasses a	re piped to boile	ers where they a	re introduced	into the back of th	e broilers (fire



Photo 1: Reception Area (Mala, etc.)



Photo 2: Reception Area (Features)



Photo 3: Cooker



Photo 4: Ozone System



Photo 5: Boilers



Photo 6: Ozone and Condenser unit



Photo 7: Blending



Photo 8: Bagging



Photo 9: Oil Tank

6.2 Start-up, maintenance and shut-down conditions

List potential start up, maintenance, shut down, upset conditions and associated responses related to the operations at the site of the works, highlight possible releases and responses for the proposed listed activity or activities in respect of the current application.

Unit Process	Description of Occurrence of Potential Releases	Pollutants and associated amount of emissions	Briefly Outline Back Up Plan
	OZONE SYSTEM IN OPERATION 24 HOURS PER DAY		
	BOILER CHIMNEYS IN OPERATION 24 HOURS PER DAY		

6.3 Complaints register

Is a complaints register maintained at the site works?

X	Yes	ALL COMPLAINTS ARE INVESTIGATED
	No	
	To be initiated, by date:	

Please provide a copy of complaints received and corrective actions taken over the past two years.

7. DISPOSAL OF WASTE AND EFFLUENTS ARISING FROM ABATEMENT EQUIPMENT CONTROL TECHNOLOGY

Provide the following information for any waste and effluent arising from abatement equipment control technology that are currently in place at the site of the works:

Unique Stack or Area ID (As per 5.4.1 or 5.4.5 above)	Waste / Effluent Type	Hazardous Components Present	Method of Disposal		
71818	Steam		Condensate from the condensers is drained to the Waste Water Treatment (effluent treatment) plant.		
71819	Steam		Condensate from the condensers is drained to the Waste Water Treatment (effluent treatment) plant.		
73440	Steam		Condensate from the condensers is drained to the Waste Water Treatment (effluent treatment) plant.		
No waste is generated by the odour control equipment.					