



**TECHNICAL REVIEW AND EVALUATION
OF APPLICATION FOR
AIR QUALITY PERMIT No. 100588**

I. INTRODUCTION

This Class II synthetic minor renewal Permit is for the continued operation of Nestle Purina Petcare Company. Permit No. 100588 renews and supersedes Permit No.74605. A Class II synthetic minor permit is required because the Permit No.74605 had an expiration date of April 8, 2024, and the uncontrolled emissions from this facility are greater than the major source thresholds identified in the Arizona Administrative Code (A.A.C. R18-2-401.13) for Particulate Matter₁₀ (PM₁₀). However, the controlled emissions for PM₁₀ are less than the major source thresholds identified in A.A.C. R18-2-401.13. Therefore, a Class II synthetic minor permit is required for this facility in accordance with A.A.C. R18-2-302.B.2.a.

A. Company Information

Facility Name: Nestle Purina PetCare
Mailing/Facility Address: 4700 E. Nestle Purina Ave., Flagstaff, Arizona
86004

B. Attainment Classification

This facility is located in Coconino County which is an attainment area for all criteria pollutants.

II. PROCESS DESCRIPTION

A. The main product manufactured at the facility is pet food. The pet food contains mainly grains and other ingredients such as soft stock. The grains are received via rail car and truck. Initial ingredients are milled to reduce the particle size before it is sent for storage. Through water, pressure, and steam, the milled ingredients are converted into pet food. Wet pet food is conveyed to dryers and mixers for final additives, such as vitamins and flavors. Finally, the product is packaged and stored.

B. Control Devices

The facility uses the following air pollution control equipment to minimize emissions from various sources:

1. 12 Cyclone Dust Collectors; and
2. 11 Baghouse Dust Collectors.

III. COMPLIANCE HISTORY

During the previous permit term, the facility has had three (3) full inspections, one (1) partial inspection and five (5) annual compliance certification reviews. No violations or excess emissions were documented during these reviews.

IV. EMISSIONS

The emissions calculations conducted for this permit renewal relied upon emission factors drawn from the EPA's Compilation of Air Pollution Factors (AP-42) and test data conducted at a similar facility for particulate matter (PM). The facility's potential to emit (PTE) before and after the permit renewal is illustrated below:

Table 1: Potential to Emit (tpy)

Pollutant	Previous PTE (tpy)	Change in PTE (tpy)	Current PTE (tpy)	Permitting Exemption Threshold (tpy)	Minor NSR Triggered?
PM ₁₀	47.05*	0.00	47.05*	7.5	No
PM _{2.5}	29.35*	0.00	29.35*	5	No
NO _x	68.57	0.00	68.57	20	No
SO ₂	90.88**	0.00	90.88**	20	No
VOCs	5.04	0.00	5.04	20	No
CO	55.39	0.00	55.39	50	No
HAPs	1.21	0.00	1.21	N/A	No

*Controlled by technology to maintain synthetic minor classification.

**Fuel oil can only be used in the boilers for 48 hours (except during times of natural gas curtailment or gas supply emergency). During times of natural gas curtailment or gas supply emergency, fuel oil usage is limited based on permit condition II.D.2 of attachment B.

V. MINOR NEW SOURCE REVIEW (NSR)

This permit renewal does not change emissions and thus, minor NSR is not triggered.

VI. APPLICABLE REGULATIONS

Table 2 identifies applicable regulations and verification as to why that standard applies. The table also contains a discussion of any regulations the emission unit is exempt from.

Table 2: Applicable Regulations

Unit	Control Device	Rule	Discussion
Truck & Rail Receiving, Grinding Aspiration, Live Bottom Bin, Aspiration, dryer Leg Aspiration, LBB Rotex, Aspiration, Extrusion Unit, Conveyors, Odd-Pound Ingredient Storage Silos, Product Dryers, Dryer Conveyance	Cyclones	A.A.C. R18-2-702 R18-2-730	The emission sources identified are unclassified sources and are subject to the requirements of A.A.C. R18-2-730.
FP Cooler #1 FP Cooler #2 FP Cooler #4 DA Mixer Cyclone #1 DA Mixer Cyclone #1 DA Mixer Cyclone #1 DA Mixer Cyclone #1	Cyclones	A.A.C. R18-2-702 R18-2-730	All the existing dog food manufacture sources are subject to provisions of R18-2-702. Provisions of R18-730 apply to unclassified sources.
Boilers (2)	N/A	A.A.C. R18-701.14 R18-701.16 R18-724.B R18-724.E R18-724.F R18-724.G R18-724.J	The boilers are less than 250 MMBtu/hr and are used to produce steam. The boilers are subject to A.A.C. R18-2-724. They are not subject to NSPS Subpart Dc because they were both manufactured prior to 1989. They are not subject to NESHAP Subpart JJJJJ because the boilers are gas-fired as defined by NESHAP Subpart JJJJJ: "any boiler that burns gaseous fuels not combined with any solid fuels and burns liquid fuel only during periods of gas curtailment, gas supply interruption, startups, or for periodic testing, maintenance, or operator training on liquid fuel. Periodic testing, maintenance, or operator training on liquid fuel shall not exceed a combined total of 48 hours during any calendar year."

Unit	Control Device	Rule	Discussion
Fuel Oil Storage Tanks (2)	N/A	A.A.C. R18-2-702.B R18-2-730.D R18-2-730.F R18-2-730.G	Each of the vessels holds a volume of 78,000 gallons of fuel oil #2. The tanks are not subject to NSPS subpart K or Ka because they do not hold petroleum liquid. The tanks are not subject to NSPS subpart Kb because the vessels were made prior to 1984. The tanks are not subject to A.A.C. R18-2-710 because the vessels hold liquids that do not meet the definition of petroleum liquids (“does not mean Number 2 through Number 6 fuel oils”). Therefore, the tanks are subject to R18-2-730, standards of performance for unclassified sources.
Generator/Engine Sets (100 hp) (225 hp)	N/A	A.A.C. R18-2-719 40 CFR Part 63, Subpart ZZZZ	<p>The 100 hp Delco generator is used for emergency replacement purposes. It is not subject to NSPS IIII because it was manufactured prior to April 1, 2006. It is subject to NESHAP ZZZZ.</p> <p>The 225 hp Onan / Cummings generator is not subject to NSPS IIII because it is a spark ignition engine. It is not subject to NSPS JJJJ because it is an emergency generator that was manufactured prior to 2009. It is subject to NESHAP ZZZZ because it is an emergency generator manufactured before June 12, 2006. Both generators are subject to A.A.C. R18-2-719, standards of performance for existing stationary rotating machinery.</p>

Unit	Control Device	Rule	Discussion
Fire-Water Pump Engine (255 hp)		A.A.C. R18-2-719 40 CFR Part 63, Subpart ZZZZ	The pump engine is used for emergency replacement purposes. It is not subject to NSPS JJJJ because it was manufactured prior to June 12, 2006. It is subject to NESHAP ZZZZ. Therefore, it is subject to A.A.C. R18-2-719, standards of performance for existing stationary rotating machinery.
Fugitive Dust	Water Trucks, Dust Suppressants	A.A.C. R18-2 Article 6 A.A.C. R18-2-702	These standards are applicable to all fugitive dust sources at the facility.
Abrasive Blasting	Wet blasting; Dust collecting equipment; Other approved methods	A.A.C. R-18-2-702 A.A.C. R-18-2-726	These standards are applicable to any abrasive blasting operation.
Spray Painting	Enclosures	A.A.C. R18-2-702 A.A.C. R-18-2-727	These standards are applicable to any spray-painting operation.
Demolition/Renovation	N/A	A.A.C. R18-2-1101.A.12	This standard is applicable to any asbestos related demolition or renovation operations.

VII. PREVIOUS PERMIT REVISIONS AND CONDITIONS

A. Previous Permit Revisions

Table 3 provides a description of the permit revisions made to Permit No. 74605 during the previous permit term.

Table 3: Permit Revisions to Permit No. 74605

Permit Revision No.	Permit Revision Type	Brief Description
97833	Minor Permit Revision (MPR)	<p>Added Merrick Batching Emission Point (EP #41) and Odd Pound Transporter Emission Point (EP #42). The Merrick Batching EP runs a maximum of 5,000 tons/year of the odd pound ingredients and the Odd Pound Transporter EP runs a maximum of 10,000 tons/year.</p> <p>In addition, the facility updated the spelling of the equipment "MAKE" for EP#40 from Schrenk to Schenck.</p>

B. Changes to Current Renewal

Table 4 in the following page addresses the changes made to the sections and conditions from Permit No. 74605.

Table 4: Previous Permit Conditions

Section No.	Determination			Comments
	Added	Revised	Deleted	
Att. "A"		X		General Provisions: Revised to represent the most recent template language.
Att. "B" Section I		X		Facility-Wide Requirements: Revised to represent the most recent template language.
Att. "B" Section III		X		Unclassified Sources: Revised to represent the most recent template language.
Att. "B" Section VI		X		Fugitive Dust Requirements: Revised to represent the most recent template language.
Att. "B" Section VII		X		Other Periodic Activities: Revised to represent the most recent template language.
Att. "C"		X		Equipment List: Revised to reflect the most recent equipment operating at the facility and to include equipment information provided.

VIII. MONITORING, RECORDKEEPING, AND REPORTING REQUIREMENTS

Table 5 contains an inclusive but not an exhaustive list of the monitoring, recordkeeping and reporting requirements prescribed by the air quality permit. The table below is intended to provide insight to the public for how the facility is required to demonstrate compliance with the emission limits in the permit. Records are required be kept for a minimum of five (5) years as outlined in Section XII of Attachment “A” of the permit.

Table 5: Permit No. 100588

Emission Unit	Pollutant	Emission Limit	Monitoring Requirements	Recordkeeping Requirements	Reporting Requirements
Facility-Wide	N/A	N/A	N/A		Submit annual compliance certifications, reports of all recordkeeping and monitoring required by the permit.
Boilers (subject to state regulations)	PM	15% opacity	Conduct monthly opacity monitoring of the stacks of all boilers.	Records of the fuel used in all the boilers.	Records shall be made available to ADEQ upon request.
Engines (subject to state regulations)	PM	40% opacity – for any period greater than 10 seconds	Conduct periodic opacity monitoring on a monthly basis.	Maintain records of the lower heating value of the fuel.	Report all 6-minute periods which the opacity exceeded the Emission Limit, Records shall be made available to ADEQ upon request.

Emission Unit	Pollutant	Emission Limit	Monitoring Requirements	Recordkeeping Requirements	Reporting Requirements
	SO ₂	1.0 lb/MMBtu		Record the daily sulfur content of the fuel used in the engines.	Report to the Director any daily period which the sulfur content exceeds 0.8%.
Unclassified Sources: Truck & Rail Receiving, Grinding Aspiration, Product & By-Product Dryers, Live Bottom Bin Aspiration, Dryer Legs Aspiration, LBB Rotex Aspiration, 5 Extrusion Unit Conveyance Cyclones, FP Cooler System Cyclones, Odd Pound Storage Silo Bin Vents, Mixed Meal Weigh Belt Feeder, Cyclones 31a, 31b, 32a, 32b, 34, 35, 36, & 37, Hammermills, Dryer Conveyance, Merrick Batching	PM	20% opacity – for any period greater than 10 seconds	Conduct periodic opacity monitoring on a monthly basis of the stack of each process source.	Maintain records of the monitoring of each process source.	Records shall be made available to ADEQ upon request.

Emission Unit	Pollutant	Emission Limit	Monitoring Requirements	Recordkeeping Requirements	Reporting Requirements
and Odd Pound Transporter					
Fugitive Dust	PM	40% Opacity	Conduct a monthly survey of visible emissions.	Record of the dates and types of dust control measures employed, and if applicable, the results of any Method 9 observations, and any corrective action taken to lower the opacity of any excess emissions.	N/A
Abrasive Blasting	PM	20% Opacity	N/A	Record the date, duration and pollution control measures of any abrasive blasting project.	N/A
Spray Painting	VOCs	20% Opacity Control 96% of the overspray	N/A	Maintain records of the date, duration, quantity of paint used, any applicable material data safety sheets, and pollution control measures of any spray painting project.	N/A
Demolition/ Renovation	Asbestos	N/A	N/A	Maintain records of all asbestos related demolition or renovation projects including the "NESHAP Notification for Renovation and Demolition Activities" form and all supporting documents.	N/A

IX. LEARNING SITE EVALUTATION

In accordance with ADEQ’s Environmental Permits and Approvals near Learning Sites Policy, the Department is required to conduct an evaluation to determine if any nearby learning sites would be adversely impacted by the facility. Learning sites consist of all existing public schools, charter schools and private schools in the K-12 level, and all planned sites for schools approved by the Arizona School Facilities Board. The learning sites policy was established to ensure that the protection of children at learning sites is considered before a permit approval is issued by ADEQ.

This permit renewal will not result in an increase in emissions and thus, it is exempt from a learning sites evaluation.

X. AMBIENT AIR IMPACT ANALYSIS

In January 2008, the facility conducted an ambient air dispersion model for their boiler emissions. Modeled concentrations were shown to be below the National Ambient Air Quality Standards (NAAQS) standard for criteria and hazardous air pollutants as seen in Table 6.

Table 6: 2008 NAAQS Modeling Results

Pollutant	Averaging Time	Model Concentrations	NAAQS Standards
CO	8 Hours	0.54 ppm	9 ppm
	1 Hour	0.56 ppm	35 ppm
NO ₂	1 Year	6.95 ppb	53 ppb
PM ₁₀	24 Hour	46.2 µg/m ³	150 µg/m ³
SO ₂	3 hour	0.22 ppm	0.5 ppm

XI. LIST OF ABBREVIATIONS

- A.A.C..... Arizona Administrative Code
- ADEQ.....Arizona Department of Environmental Quality
- AQD..... Air Quality Division
- A.R.S..... Arizona Revised Statutes
- CFR.....Code of Federal Regulations
- CH₄..... Methane
- CO..... Carbon Monoxide
- CO₂..... Carbon Dioxide
- EPA..... Environmental Protection Agency
- EJ..... Environmental Justice
- °F..... degrees Fahrenheit
- ft.....Feet
- g..... Gram
- GHG..... Greenhouse Gases

HAP.....Hazardous Air Pollutant
hp.....Horsepower
hr.....Hour
IC.....Internal Combustion
NAAQS.....National Ambient Air Quality Standard
NO_x.....Nitrogen Oxides
NO₂.....Nitrogen Dioxide
NSPS.....New Source Performance Standards
NSR.....New Source Review
NESHAP.....National Emission Standard for Hazardous Air Pollutants
PM.....Particulate Matter
PM₁₀.....Particulate Matter less than 10 µm nominal aerodynamic diameter
PM_{2.5}.....Particulate Matter less than 2.5 µm nominal aerodynamic diameter
psia.....Pounds per square Inch (absolute)
PTE.....Potential to Emit
sec.....Seconds
SO₂.....Sulfur Dioxide Significant Impact Levels
TPY.....Tons per Year
VOCs.....Volatile Organic Compound
yr.....Year

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