NORTH CAROLINA DIVISION OF AIR OUALITY						Reg Col	gion: Winston-Sa unty: Randolph	alem Regional Office	
Application Review							NC Facility ID: 7600276 Inspector's Name: Robert Barker		
Issue Date:	Issue Date: December 4, 2024						Date of Last Inspection: 12/13/2023		
		Facility	Data				Permit Applicab	bility (this application only)	
Applicant (F	facility's Nam	e): StarPet Inc.				<b>SIP:</b> 02D.0503, .0515, .0516, .0521, .1806;			
<b>Facility Add</b> StarPet Inc.	ress:					NSI NE	PS: Subparts Dc SHAP: Subpart	, DDD VVVVVV	
Asheboro, N	C 27203					PSI	D. N/A D Avoidance: N	/A	
SIC: 2821 / 1 NAICS: 32	Plastics Materi 5211 / Plastics	als And Resins Material and Re	esin Manufac	cturing		NC 112 Oth	t Toxics: N/A (r): N/A her: N/A		
Facility Clas Fee Classific	sification: Be ation: Before	fore: Title V A : Title V After	fter: Title V : Title V	I					
		Contact	Data				Ap	plication Data	
Facility	Contact	Authorized	Contact	Technical	Contact	Ap	<b>Application Number:</b> 7600276.21B,		
Jason Greenv	wood	Durgesh Kushwaha		Jason Greenwood		<b>Date Received:</b> 10/18/2021, 10/6/2020			
Manager	lical	(Operations)	Manager		Application Type: Renewal, TV-502(b)(10)				
(336) 672-01	01	(336) 672-0101		(336) 672-0101		Application Schedule: TV-Renewal			
801 Pineview	/ Road	801 Pineview Road		801 Pineview Road		Existing Permit Number: 08157/T14			
Asheboro, N	C 27203	Asheboro, NC 27203		Asheboro, NC 27203		Existing Permit Issue Date: 05/11/2021 Existing Permit Expiration Date: 04/30/2022			
Total Actu	al emissions ii	n TONS/YEAR	•	L		ļ <u></u>			
СҮ	SO2	NOX	VOC	со	PM10		Total HAP	Largest HAP	
2022	0.1800	30.57	21.42	25.68	0.540	0	14.86	8.66 [Acetaldehyde]	
2021	0.2000	33.71	18.10	28.31	0.550	0	15.31	9.18 [Acetaldehyde]	
2020	0.1700	28.99	15.65	24.35	0.530	0	13.33	8.10 [Acetaldehyde]	
2019	0.1800	30.67	16.97	25.76	0.540	0	14.60	8.44 [Acetaldehyde]	
2018 0.1700 29.41 16.69		24.71	0.530	0	14.29	8.21 [Acetaldehyde]			
Review Eng	ineer: Emily	Supple			<b>T</b> 0017	0	Comments / Reco	ommendations:	
Review Engineer's Signature: Date: 12/11/2024				024	Issue 08157 Permit Issu Permit Exp	//115 le Da piratio	te: December 4,	2024 aber 30, 2029	
Emily J Supple					- 01 mit 12Ap	au			

1. Purpose of Application

StarPet, Inc. (StarPet) currently operates under Title V Air Quality Permit 08157T14 with an expiration date of April 30, 2022. StarPet has submitted this permit application to renew the Title V permit. This application was submitted on October 21, 2021, which is at least six months before the expiration date, so the existing permit will remain in effect until this application is processed.

# 2. Facility Description

The following facility description is taken from the application (No. 7600276.21B):

StarPet, Inc. manufactures and processes PET (polyethylene terephthalate) resin for use in the beverage industry. The facility consists of two Continuous Polymerization Plants (ID Nos. CP1 and CP2). Each plant consists of an esterification and polymerization process line.

During the esterification process, a reaction between terephthalic acid (TPA) and isophthalic acid (IPA) with monoethylene glycol produces the intermediate diethylene glycol terephthalate (DGT) and water by-product. The water by-product is sent to a process column to strip out the unreacted glycol and then continues to be stripped of any remaining organic provided by a blower. Uncondensed vapors from these processes are then directed to either the regenerative thermal oxidizer or the thermal oxidizer (ID Nos. CD-AH20-B-10U01 and CD-3420-U01).

During the polymerization process, the DGT produced from the esterification process is passed through the polymerization reactor to then produce the PET product as well as the glycol by-product. The glycol by-product then continues to be pulled through a vacuum system through a series of condensers, evaporators, and vapor jets. The vapors that are released from this process are then passed through knockout drums and are then directed to either the regenerative thermal oxidizer or the thermal oxidizer (ID Nos. CD-AH20-B-10U01 and CD-3420-U01).

Rail cars and trucks deliver the monoethylene glycol, terephthalic acid, and the isophthalic acid. The terephthalic acid and isophthalic acid are pneumatically unloaded into a storage silo. Meanwhile, the crude glycol or unreacted glycol that was collected from the polymerization process is shipped in tanks to a different facility.

The Solid Stating Plants (ID Nos. SSP1 and SSP2) take the PET pellets and pass them through a four-step process. The process consists of crystallization, preheating, solid-state polycondensation, and cooling. This is to give each pellet a crystalline structure and higher molecular weight that makes them suitable for bottle application. After the process is completed, the product is held in silos while awaiting to be transported to the loading station for rail car loading and transportation.

In addition, the facility also has a PET recycling operation that can receive post-consumer recycled (PCR) flake or chip and process it with flake PET to make PET chips. The PCS/virgin chip mix can be processed in either CP1 or CP2. The PCR is received in bags or bulk containers which are pneumatically unloaded into a storage silo.

# 3. History/Background/Application Chronology

#### History/Background

May 1, 2017	Permit No. 08157T12 issued pursuant to Application No. 7600276.14A. The purpose of this permitting action was for a first-time Title V air permit. The expiration date was set to April 30, 2022.
March 5, 2020	Permit No. 08157T13 issued pursuant to Application No. 7600276.19A. The purpose of this permitting action was for a minor modification to add a complete modular dioxane stripper system to remove VOCs, HAPs, and TAPs from the wastewater discharge generated by CP1 and CP2.

May 11, 2021	Permit No. 08157T14 issued pursuant to Application No. 7600276.21A. The purpose of this permitting action was for minor modification to install a PET recycling operation.
Application Chronology	
October 6, 2020	Application No. 7600276.20A was received as a 502(b)(10) notification to add several pumps and valves to CP1 and CP2 in preparation for the installation of the new PET recycling operation.
October 18, 2021	Application No. 7600276.21B was received for renewal of Permit No. 08157T14. The acknowledgement letter was sent on October 22, 2021.
September 18, 2024	Draft sent to applicant, Winston-Salem Regional Office (WSRO), and the Stationary Source Compliance Branch (SSCB).
September 25, 2024	Samir Parekh submitted a minor comment regarding the CAM discussion in Section 6.e of the permit review. The comment has been incorporated into Section 6.e of the permit review.
September 26, 2024	Robert Barker of WSRO submitted a minor comment regarding a naming error in the draft permit for the dust cyclone (ID No. CD-RE12-B-01S11) in the Section 2.1 D header. The error has been corrected in the draft permit.
October 7, 2024	Mr. Mark Pederson of StarPet submitted minor comments regarding using GACT VVVVV indicators in the Section 1 table instead of MACT VVVVV indicators and a response to a question of if the facility has bypass valves regulated under 40 CFR Part 63 Subpart VVVVVV. All 'MACT' indicators in the Section 1 table have been updated to 'GACT' because this facility is an area source of HAP, and all bypass valve provisions have been left in the permit as the facility does utilize this type of valve. On the same day, Emily Supple of DAQ asked Mr. Pederson if any insignificant sources at StarPet are subject to 40 CFR 63 Subpart VVVVVV.
October 8, 2024	Mr. Mark Pederson of StarPet indicated that the glycol recovery units (EP16) which includes sources (ID Nos. I-1433-V01, I-1433-V02, I-1463-V01, I-1473-V01, and I-1473-V02) and the CP2 paste prep tank (EP78) (ID No. I-AB30-B-12V01) are subject to 40 CFR 63 Subpart VVVVVV due to emissions of acetaldehyde. GACT VVVVVV indicators will be added to these sources in the draft permit. No additional requirements apply.
October 15, 2024	Draft goes to public notice/EPA review.
November 14, 2024	Public notice period ends. No comments are received.
December 2, 2024	EPA review period ends. No comments are received.
December 4, 2024	Permit No. 08157T15 issued.

# 4. Permit Modification/Emission Changes and TVEE Discussion

Application No. 7600276.20A - 502(b)(10) Notification

This 502(b)(10) notification was for the addition of several valves and pumps to CP1 and CP2 in preparation for the installation of the new PET recycling operation, which was added to the permit via minor modification on May 11, 2021.

Two pumps and seven valves were added to CP1, and two valves were added to CP2. The addition of these pieces of process equipment will increase the calculated fugitive VOC emission rate from CP1 and CP2.

Using SOCMI emission factors, the emission rates in the following Table 4.1 were calculated before and after the requested 502(b)(10) change:

Emission Source ID No.	Emission Source Description	VOC Emissions Before 502(b)(10) Change (tpy)	VOC Emissions After 502(b)(10) Change (tpy)	VOC Emission Increases (tpy)
F14-P-CP1	CP1 Process Section	1.5031	1.5282	0.0251
F14-P-CP2	CP2 Process Section	1.1893	1.1893	0.0

Table 4.1: VOC Emission Increases with Application No. 7600276.20A

Based on the proposed emissions increases above, no new regulations apply with this change.

CP1 and CP2 Process Sections are subject to 40 CFR Part 63 Subpart VVVVVV. The emissions above do not change the applicability of this regulation.

StarPet is not subject to air toxics regulations, and this 502(b)(10) change does not affect the applicability of this regulation.

This change appears to qualify as a 502(b)(10) change.

Application No. 7600276.21B - Permit Renewal

No changes to the permit are requested with the permit renewal application. No changes in emissions are expected with this permit renewal.

It should be noted that the renewal permit terms will conform to DAQ's Title V shell and rule requirements in the NC Administrative Code and Code of Federal Regulations, effective as of the date of the final permit issuance.

Page No.	Section	Description of Changes	
Cover and		• Updated all dates and permit revision numbers.	
throughout		• Updated to current shell language and formatting	
4-6	Equipment List	• Added GACT designation to sources subject to 40 CFR 63 Subpart	
		VVVVVV and removed MACT designations	
8	2.1 A.4	Removed NSPS Subpart Dc reporting condition	
19	2.2 A.1.e and	• Added recordkeeping requirement for production throughput of CP1 and	
	2.2 A.1.i	CP2	
		• Added recordkeeping requirement for area source determination under	
		MACT Subparts VVV and DDDDD	
20	2.2 A.3 and 2.2	Added 02Q .0711 toxics condition	
	A.4	• Added 02Q .0308 and 02Q .0309 reporting condition	

Table 4.2 below shows the table of changes included in Permit No. 08157T15.

36-43	General	٠	Updated to the latest version of DAQ shell version 8.0 07/10/2024
	Conditions		

Title V Equipment Editor (TVEE)

Title V Equipment Editor (TVEE) was updated with this application. TVEE was reviewed and approved by Connie Horne of DAQ on December 2, 2024.

# 5. Regulatory Review

The following regulations apply to StarPet:

- 15A NCAC 02D .0503, Particulates from Fuel Burning Indirect Heat Exchangers
- 15A NCAC 02D .0515, Particulates from Miscellaneous Industrial Processes
- 15A NCAC 02D .0516, Sulfur Dioxide Emissions from Combustion Sources
- 15A NCAC 02D .0521, Control of Visible Emissions
- 15A NCAC 02D .0524, New Source Performance Standards (40 CFR Part 60 Subpart Dc)
- 15A NCAC 02D .0524, New Source Performance Standards (40 CFR Part 60 Subpart DDD)
- 15A NCAC 02D .1111, Maximum Available Control Technology (40 CFR Part 63 Subpart VVVVV)
- 15A NCAC 02D .1806, Control and Prohibition of Odorous Emissions
- 15A NCAC 02Q .0317, Avoidance of MACT (40 CFR Part 63 Subparts JJJ and DDDDD)
- a. <u>15A NCAC 02D .0503</u>, Particulates from Fuel Burning Indirect Heat Exchangers

The three natural gas-fired process heaters (ID Nos. ES-3017-F01, ES-3017-F02, and ES-3017-F03) and the two insignificant natural gas-fired boilers (ID Nos. I-3900-B01 and I-3900-B02) are subject to this rule. The allowable PM emission limit for the boiler is calculated by the following equation:

 $E = 1.090 * Q^{-0.2594}$ 

Where:

E = allowable emission limit for PM in pounds per million Btu, and

Q = maximum heat input rate in million Btu per hour.

The total maximum heat input rate, Q, can be calculated by summing the maximum heat input rate for all process heaters and boilers listed above. Per 02D .0503(e): "the sum of maximum heat input of all fuel burning indirect heat exchangers at a plant site which are in operation, under construction, or permitted pursuant to 15A NCAC 02Q, shall be considered as the total heat input for the purpose of determining the allowable emission limit for particulate matter for each fuel burning indirect heat exchanger."

Table 5.1 below shows the summary of maximum heat input rates and the calculated allowable particulate emission rate for each source.

Table 5.1: Maximum Heat Input and Allowable Particulate Emission Rate	

Source ID No.	Description	Max. Heat Input Rate (MMBtu/hr)	Allowable Emission Rate (E) (lb/MMBtu)
ES-3017-F01	Natural gas-fired process heater	32	0.315
ES-3017-F02	Natural gas-fired process heater	32	0.315
ES-3017-F03	Natural gas-fired process heater	53	0.315

I-3900-B01	Natural gas-fired boiler	1.675	0.315
I-3900-B02	I-3900-B02 Natural gas-fired boiler		0.315
	Total Max. Heat Input	120.25	
	Rate (Q):	120.55	

The emission factor for firing natural gas in a boiler is 0.0005 pounds per million Btu as provided in DAQ's "Natural Gas Combustion Emissions Calculator, Revision N" (1/05/2017), which is below the allowable emission rate of 0.315 pounds per million Btu as determined above. Compliance with 02D .0503 is expected.

Due to the inherently low particulate emission rate associated with natural gas combustion, no monitoring, recordkeeping, or reporting is required to demonstrate compliance with this regulation.

No changes to this permit condition are required as part of this renewal.

# b. 15A NCAC 02D .0515, Particulates from Miscellaneous Industrial Processes

This rule applies to stacks, vents, or outlets emitting particulates from industrial processes with no other applicable standards. The allowable emission rate is in terms of pounds per hour and is calculated using the following equation:

For process rates up to 30 tons per hour:

 $E = 4.10(P)^{0.67}$ 

For process rates greater than 30 tons per hour:

 $E = 55.0(P)^{0.11} - 40$ 

Where: E = Allowable emission rate in pounds per hour P = Process weight in tons per hour

The following emission sources are subject to regulation under 02D .0515:

- Solid Stating Plant 1 (SSP1) including:
  - o Crystallizer (ID No. ES-1610-A01)
  - o Preheater (ID No. ES-1630-R01)
  - Solid State Polycondensation Reactor (ID No. ES-1640-S04)

The entire system is closed and the preheater and solid state polycondensation reactors are not ducted directly to the atmosphere. Emissions from the entire system are accounted for in total Crystallizer emissions

- Solid Stating Plant 2 (SSP2) including:
  - Precrystallizer (ID No. ES-1805-A01)
  - Feed Silo (ID No. ES-1810-T10)
  - o Preheater (ID No. ES-1830-R01)
  - Solid State Polycondensation Reactors (ID Nos. ES-1840-R01 and ES-1840-R02)

The entire system is closed and the preheater and solid state polycondensation reactors are not ducted directly to the atmosphere. Emissions from the entire system are accounted for in total Precrystallizer emissions.

- Post-Consumer Recycled (PCR) Flake Sources:
  - Silo 1 and Silo 2 (ID Nos. ES-RE12-B-01V11 and ES-RE12-B-01V12)
  - Hopper (ID No. ES-RE90-B-75V01)

Table 5.2 below shows the process rate of each emission source, the calculated allowable particulate emission rate, and the expected potential particulate emission rate.

Process Area	Source ID No.	Max. Process Rate (tph)	Allowable Emission Rate <sup>2</sup> (lb/hr)	Potential Emission Rate (lb/hr)
	Crystallizer (ID No. ES-1610-A01)			
	Preheater (ID No.			
SSP1	ES-1630-R01)	22.9	33.4	0.0983
5511	Solid State	22.)	55.4	0.070
	Polycondensation			
	Reactor (ID No.			
	ES-1640-S04)			
	Precrystallizer (ID			
	No. ES-1805-A01)		23.8	0.161 <sup>3</sup>
	Feed Silo (ID No.			
	ES-1810-T10)	13.8		
	Preheater (ID No.			
SSP2	ES-1830-R01)			
	Solid State			
	Polycondensation			
	Reactors (ID Nos.			
	ES-1840-R01 and			
	ES-1840-R02)			
	Silo 1 and Silo 2			
	(ID Nos. ES-RE12-			0.2314
	B-01V11 and ES-			
PCR Flake	RE12-B-01V12)	$6.6^{1}$	14.5	
	Hopper (ID No.			
	ES-RE90-B-			
	75V01)			

 Table 5.2: Allowable Emission Rate vs. Potential Emission Rate

<sup>1</sup>Maximum process rate of the PCR Flake process taken from the T14 permit review.

<sup>2</sup>The equation  $E = 4.10(P)^{0.67}$  was used to calculate the allowable particulate emission rate for each process area since the process rate was less than 30 tons per hour for each area.

<sup>3</sup>Potential emission rates taken from the T12 permit review.

<sup>4</sup>Potential emission rate taken from the T14 permit review.

Table 5.2 demonstrates that, for each process area and emission source, the potential particulate emission rate is below the allowable particulate emission rate. Thus, compliance with 02D .0515 is expected.

To comply with this condition, the Permittee shall conduct a monthly external visual inspection of each system ductwork and material collection unit for leaks and an annual inspection of each cyclone system's integrity.

No changes to the requirements of this condition are necessary with this permit renewal.

# c. 15A NCAC 02D .0516, Sulfur Dioxide Emissions from Combustion Sources

This regulation applies to any source of combustion that emits sulfur dioxide, which is formed by the combustion of sulfur in fuels, wastes, ores, and other substances. Sources subject to this standard have an emission limit of 2.3 pounds of sulfur dioxide per million BTU heat input.

This rule does not apply to sources subject to sulfur dioxide emission standards in NSPS and MACT standards under 02D .0524 and .1111, respectively. The natural gas-fired process heaters (ID Nos. ES-

3017-F01, ES-3017-F02, and ES-3017-F03) are subject to recordkeeping requirements under NSPS Subpart Dc; however, NSPS Subpart Dc does not have sulfur dioxide emissions standards for natural gas-fired process heaters. Therefore, the process heaters are subject to 02D .0516.

All sources listed above are exclusively natural gas fired. As per AP-42 Section 1.4, Natural Gas Combustion, the sulfur dioxide emission factor for natural gas combustion is  $0.6 \text{ lb}/10^6 \text{ scf.}$  Using a standard natural gas heating value of 1,020 Btu/scf, this emission factor can be converted to a value of 0.0006 pounds per million Btu heat input which is much lower than the allowable emission rate of 2.3 pounds per million Btu heat input.

No monitoring, recordkeeping, or reporting requirements apply for these sources due to the inherently low sulfur content of natural gas. Compliance with 02D .0516 is expected.

# d. 15A NCAC 02D .0521, Control of Visible Emissions

For sources manufactured after July 1, 1971, visible emissions shall not be more than 20 percent opacity when averaged over a six-minute period. However, except for sources required to install COMs, six-minute averaging periods may exceed 20 percent opacity if:

- (1) No six-minute period exceeds 87 percent opacity;
- (2) No more than one six-minute period exceeds 20 percent opacity in any hour; and
- (3) No more than four six-minute periods exceed 20 percent opacity in any 24-hour period.

A source subject to an emission standard for visible emissions in Rules 02D .0506, .0508, .0524, .1110, .1111, .1206, or .1210 of 15A NCAC shall meet the standard in that particular rule instead of the standard contained in 02D .0521. No sources at StarPet are subject to a visible emissions standard under any of those rules, so the emission sources at StarPet are subject to the visible emissions standard under 02D .0521.

The following sources at StarPet are subject to the 20% opacity standard under 02D .0521, including:

- Natural gas-fired process heaters (ID Nos. ES-3017-F01, ES-3017-F02, and ES-3017-F03)
- Solid Stating Plant 1 (SSP1) including:
  - Crystallizer (ID No. ES-1610-A01)
  - Preheater (ID No. ES-1630-R01)
  - Solid State Polycondensation Reactor (ID No. ES-1640-S04)
- Solid Stating Plant 2 (SSP2) including:
  - Precrystallizer (ID No. ES-1805-A01)
  - Feed Silo (ID No. ES-1810-T10)
  - Preheater (ID No. ES-1830-R01)
  - Solid State Polycondensation Reactors (ID Nos. ES-1840-R01 and ES-1840-R02)
  - Post-Consumer Recycled (PCR) Flake Sources:
    - Silo 1 and Silo 2 (ID Nos. ES-RE12-B-01V11 and ES-RE12-B-01V12)
    - Hopper (ID No. ES-RE90-B-75V01)

For the natural gas-fired process heaters, no monitoring, recordkeeping, or reporting is required to demonstrate compliance with this regulation.

For all other sources, StarPet shall conduct monthly visible emissions observations for any visible emissions above normal. Appropriate action must be taken to correct any above-normal emissions as soon as practicable. Records of the observations must be maintained onsite in a logbook available for inspection upon request.

No changes to these requirements are necessary with this permit renewal. Compliance with 02D .0521 is expected.

e. <u>15A NCAC 02D .0524</u>, New Source Performance Standards (40 CFR Part 60 Subpart Dc)

See Section 6 below for discussion of NSPS requirements.

f. 15A NCAC 02D .0524, New Source Performance Standards (40 CFR Part 60 Subpart DDD)

See Section 6 below for discussion of NSPS requirements.

# g. <u>15A NCAC 02D .1111, Generally Available Control Technology (40 CFR Part 63 Subpart VVVVV)</u>

See Section 6 below for discussion of GACT requirements.

h. 15A NCAC 02D .1806, Control and Prohibition of Odorous Emissions

This rule requires that the facility shall not be operated without implementing management practices or installing and operating odor control equipment sufficient to prevent odorous emissions from causing or contributing to objectionable odors beyond the facility's boundary.

This rule is applicable facility wide. No monitoring, recordkeeping, or reporting is required. This is a stateenforceable only requirement.

No changes to these requirements are necessary with this permit renewal. Compliance with 02D .1806 is expected.

# i. 15A NCAC 02Q .0317, Avoidance of MACT (40 CFR Part 63 Subparts JJJ and DDDDD)

To avoid applicability of major source MACT standards, including 40 CFR Part 63 Subparts JJJ and DDDDD, facility wide HAP emissions shall be less than 10 tons per year of each individual HAP and less than 25 tons per year of the total combined HAPs.

In order to meet the emission limitations given above, the facility shall:

- limit the production in Continuous Polycondensate Plant 1 (CP1) to 330 tons per day,
- limit the production in Continuous Polycondensate Plant 2 (CP2) to 550 tons per day, and
- control emissions of HAPs from CP1 and CP2 with the regenerative thermal oxidizer (RTO) (ID No. CD-AH20-B-10U01) or the thermal oxidizer (TO) (ID No. CD-3420-U01).

To demonstrate compliance with this regulation, the facility shall perform inspections and maintenance of the thermal oxidizers (RTO and TO) as recommended by the manufacturer and conduct, at a minimum, an internal inspection of the firebox and associated inlet/outlet ductwork to ensure structural integrity, with a maximum time between inspections not to exceed three years. Additionally, the facility shall continuously monitor and record the operating temperature of the firebox of each oxidizer.

No changes to the requirements of this condition are necessary with this permit renewal. Compliance with 02Q .0317 is expected.

#### j. <u>15A NCAC 02Q .0711, Emission Rates Requiring a Permit</u>

See Section 7 below for discussions of air toxics requirements.

# 6. NSPS, NESHAP, PSD, 112(r), and CAM Applicability

a. <u>NSPS</u>

StarPet is currently subject to the following regulations under 40 CFR Part 60 (NSPS):

• NSPS Subpart Dc

• NSPS Subpart DDD

# <u>NSPS Subpart Dc – Standards of Performance for Small Industrial-Commercial-Institutional Steam</u> <u>Generating Units</u>

The three natural gas-fired process heaters (ID Nos. ES-3017-F01, ES-3017-F02, and ES-3017-F03) are subject to NSPS Subpart Dc.

The requirements of NSPS Subpart Dc for these boilers are as follows:

60.40c(a) – This subpart applies to each steam generating unit for which construction, modification, or reconstruction is commenced after June 9, 1989 and that has a maximum design heat input capacity of 100 MMBtu/hr or less, but greater than or equal to 10 MMBtu/hr.

§60.41c – "Steam generating unit" is a device that combusts any fuel and produces steam or heats water or heats any transfer medium.

60.48c(a) – The owner or operator of each affected facility shall submit notification of the date of construction or reconstruction and actual startup according to the requirements of 60.48c(a)(1) through (4).

60.48c(g)(2) – As an alternative to meeting the requirements of 60.48c(g)(1), the owner or operator of an affected facility that combusts only natural gas may elect to record and maintain records of the amount of each fuel combusted during each calendar month.

60.48c(i) – All records required under this section shall be maintained by the owner or operator of the affected facility for a period of two years following the date of such record.

The permit currently requires the facility to keep monthly records of fuel usage and to submit a semiannual summary report detailing the amounts of fuel combusted during each month for every six-month period. With this permit renewal, the reporting requirement under 02D .0524 for NSPS Dc will be removed from the permit.

Compliance with 02D .0524 is expected.

# <u>NSPS Subpart DDD – Standards of Performance for Volatile Organic Compound (VOC) Emissions from</u> the Polymer Manufacturing Industry

§60.560(a) - This subpart applies to affected facilities involved in the manufacture of polypropylene, polyethylene, polystyrene, or poly (ethylene terephthalate) as defined in § 60.561 of this subpart.

\$60.560(a)(3) - For process emissions from poly(ethylene terephthalate) manufacturing processes that use a continuous process, the affected facilities are each polymerization reaction section. If the process uses dimethyl terephthalate, then each material recovery section is also an affected facility. If the process uses terephthalic acid, then each raw materials preparation section is also an affected facility. These process sections are affected facilities for only those process emissions that are emitted continuously.

§60.560(a)(4) - Subpart DDD does not apply to VOC emissions from equipment leaks from the PET manufacturing process. Therefore, the standard for equipment leaks does not apply to CP1 and CP2 at the StarPet plant.

§60.562-1(c)(2) - Each owner or operator of a PET process line using a terephthalic acid process shall:

(i) Not allow the continuous TOC emissions from the esterification vessels in the raw materials preparation section to be greater than 0.04 kg TOC/Mg (0.08 lb TOC/ton) product.

At StarPet, the following emissions units are subject to this limit:

- CP1 Esterification Process: Esterification Reactors Nos. 1 and 2 (ID Nos. ES-1427-R01 and ES-1423-R02) and Process Column (ID No. ES-1427-C01)– emissions are routed through the Stripper Column (ID No. ES-1427-C02); Reflux Vessel (ID No. ES-1427-V01); and Vapor Condenser (ID No. ES-1427-E02); and
- CP2 Esterification Process: Esterification Reactor Nos. 1 and 2 (ID Nos. AB40-B-13R01 and AB40-B-21R01), Process Column (ID No. AB40-B-41C01), Condenser (ID No. AB40-B-63E01), and Reflux Vessel (ID No. AB40-B-63V01) routed through the CP2 Stripper Column (ID No. AH20-B-10C01)

(ii) Limit the continuous TOC emissions and, if steam-jet ejectors are used to provide vaccum to the polymerization reactors, the ethylene glycol concentration from the polymerization reaction section by complying with the appropriate standard set forth below. The ethylene glycol concentration limits specified in paragraphs (c)(2)(ii) (B) and (C) of this section shall be determined by the procedures specified in § 60.564(j).

(A) Not allow continuous TOC emissions from the polymerization reaction section (including emissions from any equipment used to further recover the ethylene glycol, but excluding those emissions from the cooling tower) to be greater than 0.02 kg TOC/Mg (0.04 lb TOC/ton) product.

At StarPet, the following emission units are subject to this limit:

- CP1 Polymerization Process: Disc Ring Reactor (ID No. ES-1463-R01), Scraper Condensers (ID Nos. ES-1463-E01 and ES-1433-E01), Ethylene Glycol Vapor Jet Condenser (ID No. ES-1473-J01), Prepolymerization Reactor (ID No. ES-1433-R01), and Glycol Evaporator (ID No. ES-1473-E03) – routed through the CP1 Vacuum Pump System (ID Nos. ES-1473-K01 and ES-1473-K02);
- CP2 Polymerization Process: Primary Vacuum Pump (ID No. AB60-B-63K02), Backup Vacuum Pump (ID No. AB60-B-63K03), Stripper Still (ID No. AH20-B-10V01), Ethylene Glycol Vapor Jet Ejector (ID No. AB60-B-63K01), Polymerization Reactor Nos. 1 and 2 (ID Nos. AB50-B-30R01 and AB60-B-15R01), Scraper Condensers (ID Nos. AB50-B-30E01 and AB60-B-50E01), Spent Ethylene Glycol Collection Vessels (ID No. AB40-B-41V01 and AB60-B-63V02), Glycol Immersion Vessels (ID Nos. AB50-B-60V01, AB60-B-50V01, and AB60-B-63V01), and Glycol Evaporator (ID No. AB60-B-63E03) routed through the Stripper Column (ID No. AH20-B-10C01).

On November 14, 1996, EPA responded to an applicability determination request<sup>1</sup> for how to apply the applicable standards if emissions from the polymerization and esterification sections of a polymer production plant are routed to a common seal pot before they are released to the atmosphere. EPA responded that because the two facilities in question are part of the same production line and because their emission limits are expressed as mass of emissions per mass of product, the applicable standard would be the sum of the limits for the individual facilities if emissions from the two sections are ducted to a common control device. Therefore, the applicable limit for each continuous polycondensation process (CP1 and CP2) is 0.12 lb TOC/ton product.

§60.562-1(d) - Closed vent systems and control devices used to comply with this subpart shall be operated at all times when emissions may be vented to them.

<sup>&</sup>lt;sup>1</sup> U.S. Environmental Protection Agency Applicability Determination Index. Control Number 9700093. "Adding Emission Limits – Subpart DDD." November 14, 1996.

§60.562-1(e) - Vent systems that contain valves that could divert a vent stream from a control device shall have car-sealed opened all valves in the vent system from the emission source to the control device and car-sealed closed all valves in vent system that would lead the vent stream to the atmosphere, either directly or indirectly, bypassing the control device.

§60.563(a) - Whenever a particular item of monitoring equipment is specified in this section to be installed, the owner or operator shall install, calibrate, maintain, and operate according to manufacturer's specifications that item as follows:

(1) A temperature monitoring device to measure and record continuously the operating temperature to within 1 percent (relative to degrees Celsius) or  $\pm 0.5$  °C ( $\pm 0.9$  °F), whichever is greater.

(60.563(b)(1)(i) - The owner or operator shall install, as applicable, the monitoring equipment for the control means used to comply with <math>(60.562-1) + (60.562

(1) If the control equipment is an incinerator:

(i) For a noncatalytic incinerator, a temperature monitoring device shall be installed in the firebox.

§60.563(c) - Owners or operators of control devices used to comply with the provisions of this subpart shall monitor these control devices to ensure that they are operated and maintained in conformance with their designs.

§60.563(d) - Owners or operators using a vent system that contains valves that could divert a vent stream from a control device used to comply with the provisions of this subpart shall do one or a combination of the following:

(1) Install a flow indicator immediately downstream of each valve that if opened would allow a vent stream to bypass the control device and be emitted, either directly or indirectly, to the atmosphere. The flow indicator shall be capable of recording flow at least once every fifteen minutes.

(2) Monitor the valves once a month, checking the position of the valves and the condition of the car seal, and identify all times when the car seals have been broken and the valve position has been changed (i.e., from opened to closed for valves in the vent piping to the control device and from closed to open for valves that allow the stream to be vented directly or indirectly to the atmosphere).

§60.564(a) - In conducting the performance tests required in §60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures specified in this section, except as provided under §60.8(b).

(1) Whenever changes are made in production capacity, feedstock type or catalyst type, or whenever there is replacement, removal, or addition of a control device, each owner or operator shall conduct a performance test according to the procedures in this section as appropriate, in order to determine compliance with § 60.562-1.

(3) The owner or operator shall determine the average organic concentration for each performance test run using the equipment described in § 60.563(a)(4). The average organic concentration shall be determined from measurements taken at least every 15 minutes during each performance test run. The average of the three runs shall be the base value for the monitoring program

Sources subject to Subpart DDD are required to conduct an initial performance test. This was completed on August 8, 2007. The permit includes a requirement to conduct additional stack tests once every permit term

(i.e., once every five years) to ensure continued compliance. The most recent testing was conducted in March and August of 2023.

60.564(h) - The owner or operator shall determine compliance with the mass emission per mass product standards in \$ 0.560(c)(2)(i), and (c)(2)(i)(A).

(1) The emission rate of TOC shall be computed using the following equation:

$$ER_{TOC} = K_5 \frac{E_{TOC}}{P_p}$$

Where:

ER<sub>TOC</sub> = Emission rate of total organic compounds (minus methane and ethane), kg TOC/Mg (lb TOC/ton) product

 $E_{TOC}$  = Emission rate of total organic compounds (minus methane and ethane) in the sample, kg/hr (lb/hr)

 $P_p$  = The rate of polymer production, kg/hr (lb/hr)

 $K_5 = 1,000 \text{ kg/Mg}$  (metric units) = 2,000 lb/ton (English units)

(2) The mass rate of TOC,  $E_{TOC}$ , shall be determined according to the procedures, as appropriate, in paragraph (c)(2) of this section. The sampling site for determining compliance with 60.560(d) and (e) shall be before any add-on control devices and after all product recovery devices. Otherwise, the sampling site shall be at the outlet of the control device.

(3) The rate of polymer production,  $P_p$ , shall be determined by dividing the weight of polymer pulled (in kg (lb)) from the process line during the performance test by the number of hours taken to perform the performance test. The weight of polymer pulled shall be determined by direct measurement or, subject to prior approval by the Administrator, computed from materials balance by good engineering practice.

§60.565(a) - Each owner or operator subject to the provisions of this subpart shall keep an up-to-date, readily accessible record of the following information measured during each performance test. The same information specified in this section shall be submitted in the reports of all subsequently required performance tests where either the emission control efficiency of a combustion device or the outlet concentration of TOC (minus methane and ethane) is determined.

(1) When an incinerator is used to demonstrate compliance with § 60.562-1, except § 60.562-1(a)(2):

(i) The average firebox temperature of the incinerator (or the average temperature upstream and downstream of the catalyst bed), measured at least every 15 minutes and averaged over the performance test period, and

(ii) The percent reduction of TOC (minus methane and ethane) achieved by the incinerator, the concentration of TOC (minus methane and ethane) (ppmv, by compound) at the outlet of the control device on a dry basis, or the emission rate in terms of kg TOC (minus methane and ethane) per Mg (lb TOC/ton) of product at the outlet of the control device, whichever is appropriate. If supplemental combustion air is used, the TOC concentration corrected to 3 percent oxygen shall be recorded and reported.

§60.565(b):

(1) Each owner or operator subject to the provisions of this subpart shall submit with the initial performance test or, if complying with § 60.562-1(a)(1)(i)(D), as a separate report, an engineering report describing in detail the vent system used to vent each affected vent stream to a control device. This report shall include all valves and vent pipes that could vent the stream to the atmosphere, thereby bypassing the control device, and identify which valves are car-sealed opened and which valves are car-sealed closed.

(2) If a vent system containing valves that could divert the emission stream away from the control device is used, each owner or operator subject to the provisions of this subpart shall keep for at least two years up-to-date, readily accessible continuous records of:

(i) All periods when flow is indicated if flow indicators are installed under § 69.563(d)(1).

(ii) All times when maintenance is performed on car-sealed valves, when the car seal is broken, and when the valve position is changed (i.e., from open to closed for valves in the vent piping to the control device and from closed to open for valves that vent the stream directly or indirectly to the atmosphere bypassing the control device)

(a)(2), each owner or operator subject to the provisions of this subpart shall keep for at least 2 years up-todate, readily accessible continuous records of:

(1) The temperature measurements specified under § 60.563(b)(1).

(2) Records of periods of operation during which the parameter boundaries established during the most recent performance test are exceeded. Periods of operation during which the parameter boundaries established during the most recent performance test are exceeded are defined as follows:

(i) For noncatalytic incinerators, all 3-hour periods of operation during which the average combustion temperature was more than 28  $^{\circ}$ C (50  $^{\circ}$ F) below the average combustion temperature during the most recent performance test at which compliance was demonstrated.

§60.565(g) - Each owner or operator of an affected facility subject to the provisions of this subpart and seeking to demonstrate compliance with § 60.560(j) or § 60.562-1 shall keep up-to-date, readily accessible records of:

(1) Any changes in production capacity, feedstock type, or catalyst type, or of any replacement, removal or addition of product recovery equipment; and

(2) The results of any performance test performed pursuant to the procedures specified by  $\S$  60.564.

60.565(k) - Each owner or operator that seeks to comply with the requirements of this subpart by complying with the requirements of 60.562-1 shall submit semiannual reports of the following recorded information, as applicable. The initial report shall be submitted within 6 months after the initial start-up date.

(1) Exceedances of monitored parameters recorded under §60.565(c), (d)(2), and (f).

(2) All periods recorded under §60.565(b) when the vent stream has been diverted from the control device.

60.565(1) - Each owner or operator subject to the provisions of this subpart shall notify the Administrator of the specific provisions of § 60.562, § 60.560(d), or § 60.560(e), as applicable, with which the owner or operator has elected to comply. Notification shall be submitted with the notification of initial startup required by § 60.7(a)(3). If an owner or operator elects at a later date to use an alternative provision of § 60.562 with which he or she will comply or becomes subject to § 60.562 for the first time (i.e., the owner or operator can no longer meet the requirements of this subpart by complying with the uncontrolled threshold emission rate cutoff provision in § 60.560 (d) or (e)), then the owner or operator shall notify the Administrator 90 days before implementing a change and, upon implementing a change, a performance test shall be performed as specified in § 60.564.

No changes to these requirements are necessary with this permit renewal. Compliance with 02D .0524 is expected.

# b. <u>NESHAP</u>

StarPet is currently subject to the following regulations under 40 CFR Part 63 (NESHAP):

• NESHAP Subpart VVVVVV

# <u>NESHAP Subpart VVVVV – National Emission Standards for Hazardous Air Pollutants for Chemical</u> <u>Manufacturing Area Sources</u>

§63.11494(a) - Except as specified in paragraph (c) of this section, you are subject to this subpart if you own or operate a chemical manufacturing process unit (CMPU) that meets the conditions specified in paragraphs (a)(1) and (2) of this section.

(1) The CMPU is located at an area source of hazardous air pollutant (HAP) emissions.

(2) HAP listed in Table 1 to this subpart (Table 1 HAP) are present in the CMPU, as specified in paragraph (a)(2)(i), (ii), (iii), or (iv) of this section.

(i) The CMPU uses as feedstock, any material that contains quinoline, manganese, and/or trivalent chromium at an individual concentration greater than 1.0 percent by weight, or any other Table 1 HAP at an individual concentration greater than 0.1 percent by weight. To determine the Table 1 HAP content of feedstocks, you may rely on formulation data provided by the manufacturer or supplier, such as the Material Safety Data Sheet (MSDS) for the material. If the concentration in an MSDS is presented as a range, use the upper bound of the range.

(ii) Quinoline is generated as byproduct and is present in the CMPU in any liquid stream (process or waste) at a concentration greater than 1.0 percent by weight.

(iii) Hydrazine and/or Table 1 organic HAP other than quinoline are generated as byproduct and are present in the CMPU in any liquid stream (process or waste), continuous process vent, or batch process vent at an individual concentration greater than 0.1 percent by weight.

(iv) Hydrazine or any Table 1 HAP is produced as a product of the CMPU.

This Subpart applies to StarPet, an area source of HAPS, due to the generation of acetaldehyde, a Table 1 HAP, above the specified concentration of 0.1 percent by weight. The initial compliance date for StarPet was March 21, 2013.

§63.11494(b) - A CMPU includes all process vessels, equipment, and activities necessary to operate a chemical manufacturing process that produces a material or a family of materials described by North American Industry Classification System (NAICS) code 325. A CMPU consists of one or more unit operations and any associated recovery devices. A CMPU also includes each storage tank, transfer operation, surge control vessel, and bottoms receiver associated with the production of such NAICS code 325 materials.

StarPet operates a continuous PET manufacturing process and is covered under the NAICS code 325211.

§63.11494(d) - This subpart applies to each new or existing affected source. The affected source is the facility-wide collection of CMPUs and each heat exchange system and wastewater system associated with a CMPU that meets the criteria specified in paragraphs (a) and (b) of this section. A CMPU using only Table 1 organic HAP is required to control only total CAA section 112(b) organic HAP. A CMPU using only Table 1 metal HAP is required to control only total CAA section 112(b) metal HAP in accordance with § 63.11495 and, if applicable, § 63.11496(f).

(1) An affected source is an existing source if you commenced construction or reconstruction of the affected source before October 6, 2008.

CP1 and CP2 are both existing sources under NESHAP Subpart VVVVV.

§63.11494(e) - Any area source that installed a federally-enforceable control device on an affected CMPU is required to obtain a permit under 40 CFR part 70 or 40 CFR part 71 if the control device on the affected CMPU is necessary to maintain the source's emissions at area source levels. For new and existing sources subject to this rule on December 21, 2012 and subject to title V as a result of this rule, a complete title V permit application must be submitted no later than December 21, 2013. New and existing sources that become subject to this rule after December 21, 2012 must submit a complete title V permit application no later than 12 months after becoming subject to this rule if the source is subject to title V as a result of this rule. Otherwise, you are exempt from the obligation to obtain a permit under 40 CFR part 70 or 40 CFR part 71, provided you are not otherwise required by law to obtain a permit under 40 CFR 70.3(a) or 40 CFR 71.3(a). Notwithstanding the previous sentence, you must continue to comply with the provisions of this subpart.

StarPet operates a thermal oxidizer installed on CP1 and CP2 which is necessary to keep HAP emissions below major source thresholds. The Title V permit application was submitted on December 6, 2013.

§63.11494(f) - If you own or operate an existing affected source, you must achieve compliance with the applicable provisions in this subpart no later than March 21, 2013.

§63.11495(a) - Management practices. If you have a CMPU subject to this subpart, you must comply with paragraphs (a)(1) through (5) of this section.

(1) Each process vessel must be equipped with a cover or lid that must be closed at all times when it is in organic HAP service or metal HAP service, except for manual operations that require access, such as material addition and removal, inspection, sampling and cleaning. This requirement does not apply to process vessels containing only metal HAP that are in a liquid solution or other form that will not result in particulate emissions of metal HAP (e.g., metal HAP that is in ingot, paste, slurry, or moist pellet form or other form).

(3) You must conduct inspections of process vessels and equipment for each CMPU in organic HAP service or metal HAP service, as specified in paragraphs (a)(3)(i) through (v) of this section, to demonstrate compliance with paragraph (a)(1) of this section and to determine that the process vessels and equipment are sound and free of leaks. Alternatively, except when the subject CMPU contains metal HAP as particulate, inspections may be conducted while the subject process vessels and equipment are in VOC service, provided that leaks can be detected when in VOC service.

(i) Inspections must be conducted at least quarterly.

(ii) For these inspections, detection methods incorporating sight, sound, or smell are acceptable. Indications of a leak identified using such methods constitute a leak unless you demonstrate that the indications of a leak are due to a condition other than loss of HAP. If indications of a leak are determined not to be HAP in one quarterly monitoring period, you must still perform the inspection and demonstration in the next quarterly monitoring period.

(iii) As an alternative to conducting inspections, as specified in paragraph (a)(3)(ii) of this section, you may use Method 21 of 40 CFR part 60, appendix A-7, with a leak definition of 500 ppmv to detect leaks. You may also use Method 21 with a leak definition of 500 ppmv to determine if indications of a leak identified during an inspection conducted in accordance with paragraph (a)(3)(ii) of this section are due to a condition other than loss of HAP. The procedures in this paragraph (a)(3)(ii) may not be used as an alternative to the inspection required by paragraph (a)(3)(ii) of this section for process vessels that contain metal HAP as particulate.

(iv) Inspections must be conducted while the subject CMPU is operating.

(v) No inspection is required in a calendar quarter during which the subject CMPU does not operate for the entire calendar quarter and is not in organic HAP service or metal HAP service. If the CMPU operates at all during a calendar quarter, an inspection is required.

(4) You must repair any leak within 15 calendar days after detection of the leak, or document the reason for any delay of repair. For the purposes of this paragraph (a)(4), a leak will be considered "repaired" if a condition specified in paragraph (a)(4)(i), (ii), or (iii) of this section is met.

(i) The visual, audible, olfactory, or other indications of a leak to the atmosphere have been eliminated, or

(ii) No bubbles are observed at potential leak sites during a leak check using soap solution, or

(iii) The system will hold a test pressure.

(5) You must keep records of the dates and results of each inspection event, the dates of equipment repairs, and, if applicable, the reasons for any delay in repair.

StarPet is subject to the management practice requirements for process vessels and the permit includes requirements for covers and lids on process vessels as well as inspection and repair requirements. The transfer operations requirements do not apply because StarPet does not handle liquids containing organic HAP.

§63.11495(b) - Small heat exchange systems. For each heat exchange system subject to this subpart with a cooling water flow rate less than 8,000 gallons per minute (gal/min) and not meeting one or more of the conditions in § 63.104(a), you must comply with paragraphs (b)(1) through (3) of this section, or as an alternative, you may comply with any one of the requirements in Item 1.a or 1.b of Table 8 to this subpart.

(1) You must develop and operate in accordance with a heat exchange system inspection plan. The plan must describe the inspections to be performed that will provide evidence of hydrocarbons in the cooling water. Among other things, inspections may include checks for visible floating hydrocarbon on the water, hydrocarbon odor, discolored water, and/or chemical addition rates. You must conduct inspections at least once per quarter, even if the previous inspection determined that the indications of a leak did not constitute a leak as defined by § 63.104(b)(6).

(2) You must perform repairs to eliminate the leak and any indications of a leak or demonstrate that the HAP concentration in the cooling water does not constitute a leak, as defined by § 63.104(b)(6), within 45 calendar days after indications of the leak are identified, or you must document the reason for any delay of repair in your next semiannual compliance report.

(3) You must keep records of the dates and results of each inspection, documentation of any demonstrations that indications of a leak do not constitute a leak, the dates of leak repairs, and, if applicable, the reasons for any delay in repair.

StarPet has seven heat exchange systems onsite (ID Nos. I-3851-E01 through E03 and I-3852-E01 through E04) with flow rates less than 8,000 gallons per minute, so the above requirements apply.

§63.11495(c) - Startup, shutdown and malfunction. Startup, shutdown, and malfunction (SSM) provisions in subparts that are referenced in paragraphs (a) and (b) of this section do not apply.

§63.11495(d) - General duty. At all times, you must operate and maintain any affected CMPU, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator, which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the CMPU.

§63.11496(b) - Organic HAP emissions from continuous process vents. You must comply with the requirements in paragraphs (b)(1) through (3) of this section for organic HAP emissions from your continuous process vents for each CMPU subject to this subpart using Table 1 organic HAP. If the total resource-effectiveness (TRE) index value for a continuous process vent is less than or equal to 1.0, you must also comply with the emission limits and other requirements in Table 3 to this subpart.

(1) You must determine the TRE index value according to the procedures in § 63.115(d), except as specified in paragraphs (b)(1)(i) through (iii) of this section.

(i) You are not required to calculate the TRE index value if you control emissions in accordance with Table 3 to this subpart.

(ii) Sections 63.115(d)(1)(i) and (ii) are not applicable for the purposes of this paragraph (b)(1)(ii).

(iii) You may assume the TRE for a vent stream is >1.0 if the amount of organic HAP emitted in the vent stream is less than 0.1 pound per hour.

(2) If the current TRE index value is greater than 1, you must recalculate the TRE index value before you make any process or operational change that affects parameters in the calculation. If the recalculated TRE is less than or equal to 1.0, then you must comply with one of the compliance options for continuous process vents in Table 3 to this subpart before operating under the new operating conditions. You must maintain records of all TRE calculations.

(3) If a recovery device as defined in § 63.11502 is used to maintain the TRE index value at a level greater than 1.0 and less than or equal to 4.0, you must comply with § 63.982(e) and the requirements specified therein.

StarPet reduces emissions from process units in CP1 and CP2 by ducting them to one of two thermal oxidizers.

Table 3 of Subpart VVVVV refers to the Subpart SS requirements for continuous process vents and the requirements referenced therein. Table 6.1 below comes from the T12 permit review and contains the applicable Subpart SS requirements.

# Table 6.1: 40 CFR Part 63 Subpart SS Requirements for Closed Vent Systems, Control Devices, Recovery Devices, and Routing to a Fuel Gas System or a Process

Part 63 <sup>2</sup>	Description of Section	Brief Summary of Rule Requirements	Summary of Applicability to StarPet
63.982(c)	Closed Vent System and Nonflare Control Device	This section applies to owners and operators that control emissions through a closed vent system to a nonflare control device. This section identifies the sections in Subpart SS that apply to process vents, including: (1) §63.983 for closed vent systems and the applicable recordkeeping and reporting requirements in §§63.998 and 63.999; (2) §§63.988 (incinerators, boilers and process heaters), 63.990 (absorbers, condensers, and carbon adsorbers used as control devices), or 63.995 (other control devices); (3) general monitoring requirements in §63.996; and (4) the performance test requirements and procedures in §63.997.	<ul> <li>StarPet controls emissions from CP1 and CP2 by venting the emissions through a closed vent system to a thermal oxidizer.</li> <li>The sections that apply are §§63.983, 63.988, 63.966, 63.997, 63.998 and 63.999.</li> </ul>
Section 63.98	3: Closed vent system		
63.983(a)	Closed vent system equipment and operating requirements.	This section contains the requirements for closed vent systems (CVS) venting regulated materials from a regulated source. Specifically, there are requirements for (1) the collection of emissions, (2) the period of operation, (3) bypass monitoring, (4) loading arms at transfer racks, and (5) pressure relief devices in a transfer rack's CVS.	<ul> <li>StarPet vents emissions of organic HAP from CP1 and CP2 to thermal oxidizers and is subject to these CVS requirements. The permit will contain conditions with the requirements from this section.</li> <li>StarPet does not have transfer racks that operate in organic HAP service and these requirements do not apply.</li> </ul>
63.983(b)	Closed vent system inspection and monitoring requirements.	This section specifies the inspection requirements for CVS collecting regulated materials from a regulated source. For CVS constructed of hard-piping, an initial full inspection [see 63.983(c)] is required and annual inspections are required for visible, audible, or olfactory indications of leaks. For CVS constructed of ductwork, initial and annual full inspections are required. This section also has provisions for inspection of unsafe-to-inspect and difficult-to-inspect CVS, as well as inspections for bypass lines.	<ul> <li>StarPet will be subject to the CVS requirements for collecting HAP emissions from CP1 and CP2.</li> <li>The Permit will contain conditions for CVS inspections with exceptions for inspection of unsafe-to-inspect and difficult-to-inspect CVS and bypass lines.</li> </ul>
63.983(c) and (d)	Closed vent system inspection procedures and closed vent system leak procedures.	These sections specify the inspection and leak repair procedures for CVS collecting regulated materials from a regulated source.	• The requirements in these sections will be incorporated into the permit.

<sup>&</sup>lt;sup>2</sup> Continuous process vents in CP1 and CP2 are required by Table 3 of Subpart 6V to comply with the Subpart SS, specifically "...the requirements of §63.982(c) and the requirements referenced therein." Therefore, this table will not address all sections of Subpart SS, but only those that are applicable to CP1 and CP2.

Citation in Part 63 <sup>2</sup>	Description of Section	Brief Summary of Rule Requirements	Summary of Applicability to StarPet
63.988(a)	Equipment and operating requirements	This section applies to owners and operators that use an incinerator, boiler or process heater to meet a weight-percent emission reduction or parts per million by volume outlet concentration requirement. Incinerators, boilers and process heaters are required to be operated at all times when emissions are vented to them and the vent stream is required to be introduced into the flame zone.	<ul> <li>StarPet uses thermal oxidizers (i.e., incinerators) to reduce HAP emissions from CP1 and CP2 to comply with the weight-percent emission reduction requirement of Subpart 6V.</li> <li>The requirements of this section will be incorporated into the permit.</li> </ul>
63.988(b)	Performance test requirements	Under this section, owners and operators are required to conduct an initial performance test according to 63.997 (see below). Performance tests are not required when one of control devices specified in the section are being used (e.g., boiler or process heater with a design capacity of 150 MMBtu/hr or larger). Design evaluations are allowed as an alternative to the performance test for storage vessels and low throughput transfer rack controls. No performance test is required for equipment leaks.	<ul> <li>StarPet is required to conduct the initial performance testing as specified in this section. They are not using any of the specified control devices and they are not using the oxidizers to control equipment leak emissions.</li> <li>The thermal oxidizers are not being used to control storage vessels and low throughput transfer racks so design evaluations are not an alternative.</li> <li>The Permit will contain conditions referring to these performance testing requirements.</li> </ul>
63.988(c)	Incinerator, boiler, and process heater monitoring requirements.	This section specifies that any incinerator, boiler, or process heater that is used as a control device must be equipped with temperature monitoring devices capable of providing continuous records. This section provides exemptions from monitoring for boilers and process heaters. The location of the temperature monitoring device is also specified for types of incinerators, boilers, or process heaters.	<ul> <li>StarPet is using thermal oxidizers and is required to install a continuous temperature monitoring device in the ductwork immediately downstream of the fire box in a position before any substantial heat exchange occurs.</li> <li>The Permit will contain conditions requiring monitoring of the thermal oxidizers as required in this section.</li> </ul>
Section 63.990	6: General Monitoring require	ements for control and recovery devices	
63.996(a)	General monitoring requirements applicability	This section applies to owners and operators of regulated sources required to monitor, except flares and flow indicators are not subject to this section.	• This section applies to the continuous temperature monitoring devices installed on the thermal oxidizers to control CP1 and CP2.
63.996(b)	Conduct of monitoring	<ul> <li>This section provides for instances when monitoring might not apply as required elsewhere in Subpart SS or the referencing subpart:</li> <li>If the Administrator approves or specifies minor changes in methodologies or alternatives to monitoring requirements</li> <li>When one CPMS is used as a backup to another CPMS, the owner or operator is required to report results from the CPMS being used and specify which CPMS is being used.</li> </ul>	<ul> <li>StarPet has not sought out modifications or alternatives to the specified monitoring.</li> <li>The permit will contain a condition related to the use of backup CPMS.</li> </ul>

Citation in			
Part 63 <sup>2</sup>	Description of Section	Brief Summary of Rule Requirements	Summary of Applicability to StarPet
63.996(c)	Operation and maintenance of continuous parameter systems.	<ul> <li>This section specifies the proper operation of continuous monitoring system equipment:</li> <li>Use manufacturer's or other written (and appropriate) specifications,</li> <li>Operate with good air pollution control practices</li> <li>Verify CPMS data in conjunction with conducting performance tests</li> <li>Install CPMS such that representative measurements of parameters from the regulated source are obtained.</li> <li>Operate CPMS at all times emissions are being routed to the control device except as specified.</li> <li>Establish a range for the monitored parameters that indicates proper control device operation.</li> </ul>	<ul> <li>StarPet is required to install a continuous temperature monitoring system. The permit will include these operation and maintenance requirements for CPMS.</li> <li>Subpart 6V specifies that references to an SSM plan [63.996(c)(2)(ii)] are not applicable.</li> </ul>
63.996(d)	Alternatives to monitoring requirements	This section allows for alternatives to CPMS monitoring and recordkeeping provisions as well as monitoring different parameters other than those listed.	• This section does not apply. StarPet has not requested alternatives to monitoring.
Section 63.997	7: Performance test and comp	pliance assessment requirements for control devices	
63.997(a)	Performance tests and flare compliance assessments	This section applies when required under 63.985 through 63.995 to conduct performance testing of control devices.	• Under 63.988, StarPet is required to conduct performance testing of the thermal oxidizers.
63.997(b)	Prior test results and waivers.	<ul> <li>This section provides specifications for obtaining waivers from conducting performance tests to comply with Subparts SS and 6V:</li> <li>A prior performance test conducted using the same required methods and either no process changes have been made since the test or it can be demonstrated that the results of the test reliably demonstrate compliance despite process changes.</li> <li>Individual performance tests may be waived if specified requirements are met.</li> <li>The Administrator can cancel the testing waiver if warranted.</li> </ul>	<ul> <li>StarPet has not submitted a request for a waiver from the performance test requirements for the thermal oxidizers. One thermal oxidizer (ID No. CD-3420-U01) was modified with Permit No. R11 and is required to conduct a new performance test.</li> <li>The permit will require that both oxidizers be tested to establish the temperature monitoring ranges.</li> </ul>
63.997(c)	Performance tests and flare compliance assessments schedule	<ul> <li>This section specifies the schedule for initial performance testing.</li> <li>Generally, sources are required to conduct performance tests within 180 days after becoming subject to a rule.</li> <li>If an existing control device is replaced by either a recovery device or another control device, this section requires the regulated source to amend its Title V permit (if applicable) and a compliance demonstration or performance test is required within 180 days.</li> </ul>	• The permit will specify when the initial performance tests are required.
63.997(d)	Performance testing facilities	This section specifies what the owner and operator is required to provide for testing, including: sampling ports, safe sampling platforms, safe access to sampling platforms, utilities for sampling and testing equipment and any other testing facilities deemed necessary by the Administrator.	• The permit will include a condition for the testing facilities.

Citation in								
Part 63 <sup>2</sup>	Description of Section	Brief Summary of Rule Requirements	Summary of Applicability to StarPet					
63.997(e)	Performance test procedures	<ul> <li>This section specifies the procedures for conducting performance testing.</li> <li>General procedures for: <ul> <li>Continuous unit operations and combinations of both continuous and batch unit operations;</li> <li>Alternatives to performance test requirements; and</li> <li>Performance test runs.</li> </ul> </li> <li>Specific procedures for: <ul> <li>Selection of sampling sites;</li> <li>Measuring gas volumetric flowrate;</li> <li>Measuring regulated compounds; and</li> <li>Calculating percent reduction.</li> </ul> </li> </ul>	<ul> <li>s for conducting performance</li> <li>and combinations of both perations;</li> <li>test requirements; and</li> <li>Ilowrate; bunds; and bon.</li> <li>m control device performance tests.</li> </ul>					
Section 63.99	98: Recordkeeping Requireme	ents						
63.998	Recordkeeping requirements	<ul> <li>This section requires owners and operators to maintain records:</li> <li>Compliance assessment, monitoring, and compliance records</li> <li>Continuous records and monitoring system data handling</li> <li>Nonflare control and recovery device regulated source monitoring records</li> <li>Other Records: <ul> <li>Closed vent systems,</li> <li>Storage vessel/transfer racks,</li> <li>Regulated source and control equipment startup, shutdown, and malfunctions,</li> <li>Equipment leaks, and</li> <li>Monitored parameters out of range.</li> </ul> </li> </ul>	<ul> <li>The permit will include all applicable recordkeeping requirements for compliance assessments, temperature monitoring, thermal oxidizer operation, closed vent systems, and monitored parameters out of range.</li> <li>Subpart 6V specifically exempts subject facilities from the startup, shutdown and malfunction-related recordkeeping activities.</li> </ul>					
Section 63.99	a 63.999: Notifications and Other Reports							
63.999	Notifications and other reports	<ul> <li>This section requires owners and operators to submit notifications and reports:</li> <li>Performance test and flare compliance assessment notifications and reports;</li> <li>Notification of compliance status;</li> <li>Periodic reports; and</li> <li>Requests for approval of monitoring alternatives.</li> </ul>	<ul> <li>The Permit will include all applicable reporting and notification requirements.</li> </ul>					

§63.11496(g) - Exceptions and alternatives to 40 CFR part 63, subpart SS. If you are complying with the emission limits and other requirements for continuous process vents in Table 3 to this subpart, the provisions in paragraphs (g)(1) through (7) and (9) of this section apply in addition to the provisions in 40 CFR Part 63 Subpart SS.

(1) Requirements for performance tests.

(i) The requirements specified in 63.2450(g)(1) through (4) apply instead of, or in addition to, the requirements specified in 40 CFR part 63, subpart SS.

(ii) Upon request, you shall make available to the Administrator, such records as may be necessary to determine the conditions of performance tests.

(2) Design evaluation. To determine initial compliance with a percent reduction or outlet concentration emission limit, you may elect to conduct a design evaluation as specified in § 63.1257(a)(1) instead of a performance test as specified in subpart SS of this part 63. You must establish the value(s) and basis for the operating limits as part of the design evaluation. For continuous process vents, the design evaluation must be conducted at maximum representative operating conditions for the process, unless the Administrator specifies or approves alternate operating conditions. For batch process vents, the design evaluation must be conducted under worst-case conditions, as specified in § 63.2460(c)(2).

(3) Outlet concentration correction for combustion devices. When § 63.997(e)(2)(iii)(C) requires you to correct the measured concentration at the outlet of a combustion device to 3 percent oxygen if you add supplemental combustion air, the requirements in either paragraph (g)(3)(i) or (g)(3)(ii) of this section apply for the purposes of this subpart.

(i) You must correct the concentration in the gas stream at the outlet of the combustion device to 3 percent oxygen if you add supplemental gases, as defined in § 63.2550, to the vent stream, or;

(ii) You must correct the measured concentration for supplemental gases using Equation 1 of § 63.2460; you may use process knowledge and representative operating data to determine the fraction of the total flow due to supplemental gas.

(4) Continuous parameter monitoring. The provisions in § 63.2450(k)(1) through (6) apply in addition to the requirements for continuous parameter monitoring systems (CPMS) in subpart SS of this part 63, except as specified in paragraphs (g)(4)(i) and (ii) of this section.

(i) You may measure pH or caustic strength of the scrubber effluent at least once per day for any halogen scrubber within a CMPU subject to this rule.

(ii) The requirements in § 63.2450(k)(6) to request approval of a procedure to monitor operating parameters does not apply for the purposes of this subpart. You must provide the required information in your NOCS report required by § 63.11501(b).

(5) Startup, shutdown, malfunction (SSM). Sections 63.996(c)(2)(ii) and 63.998(b)(2)(iii), (b)(6)(i)(A), (c)(1)(ii)(E) and (d)(3) do not apply for the purposes of this subpart.

(6) Excused excursions. Excused excursions, as defined in subpart SS of this part 63, are not allowed.

(7) Energetics and organic peroxides. If an emission stream contains energetics or organic peroxides that, for safety reasons, cannot meet an applicable emission limit specified in this subpart, then you must submit an application to the Administrator explaining why an undue safety hazard would be created if the air emission controls were installed, and you must describe the

procedures that you will implement to minimize HAP emissions from these vent streams in lieu of the emission limitations in this section.

(9) Parameter monitoring averaging periods. Daily averages required in § 63.998(b)(3) apply at all times except during startup and shutdown. Separate averages shall be determined for each period of startup and period of shutdown.

StarPet is complying with the emissions limits in Table 3 to this subpart for each CMPU and therefore is complying with Subpart SS. These requirements will be included in the permit in addition to those from Subpart SS except for the design evaluation and energetics and organic peroxides requirements, which do not apply.

§63.11496(i) - Startup, shutdown, and malfunction (SSM). References to SSM provisions in subparts that are referenced in paragraphs (a) through (h) of this section or Tables 2 through 5 to this subpart do not apply.

§63.11498(a) - You must comply with the requirements in paragraph (a)(1) and (2) of this section and in Table 6, Item 1 to this subpart for all wastewater streams from a CMPU subject to this subpart. If the partially soluble HAP concentration in a wastewater stream is equal to or greater than 10,000 parts per million by weight (ppmw) and the wastewater stream contains a separate organic phase, then you must also comply with Table 6, Item 2 to this subpart for that wastewater stream. Partially soluble HAP are listed in Table 7 to this subpart.

(1) Except as specified in paragraph (a)(2) of this section, you must determine the total concentration of partially soluble HAP in each wastewater stream using process knowledge, engineering assessment, or test data. Also, you must reevaluate the concentration of partially soluble HAP if you make any process or operational change that affects the concentration of partially soluble HAP in a wastewater stream.

(2) You are not required to determine the partially soluble concentration in wastewater that is hard piped to a combustion unit or hazardous waste treatment unit, as specified in Table 6, Item 2.b to this subpart.

StarPet submitted in their NOCS that the partially soluble HAP concentration is <10,000 ppmw and does not contain a separated organic phase. The permit will contain conditions requiring that the partially soluble HAP concentrations must be reevaluated if any process or operational changes are made that would affect the concentration in a wastewater stream.

§63.11498(b) - The requirements in Item 2 of Table 6 to this subpart do not apply during periods of startup or shutdown. References to SSM provisions in subparts that are referenced in paragraph (a) of this section or Table 6 to this subpart do not apply.

§63.11500 - For any CMPU, heat exchange system, or wastewater system subject to the provisions of both this subpart and another rule, you may elect to comply only with the more stringent provisions as specified in paragraphs (a) through (d) of this section.

(b) Compliance with subparts of 40 CFR part 60. If any part of a CMPU that is subject to the provisions of this subpart is also subject to the provisions of subpart VV, DDD, III, NNN, RRR, or YYY in 40 CFR part 60, then compliance with any of the requirements in 40 CFR part 60, subpart VV, DDD, III, NNN, RRR, or YYY that are at least as stringent as the corresponding requirements in this subpart VVVVVV constitutes compliance with this subpart VVVVVV.

StarPet is subject to the NSPS for polymers and resins under 40 CFR Part 60 Subpart DDD. However, StarPet did not provide a comparison between 40 CFR 60 Subpart DDD and 40 CFR Part 63 Subpart VVVVVV in their permit application.

§63.11501(a) - General provisions. You must meet the requirements of the General Provisions in 40 CFR part 63, subpart A, as shown in Table 9 to this subpart. The General Provisions in other parts do not apply except when a requirement in an overlapping standard, which you determined is at least as stringent as subpart VVVVVV and with which you have opted to comply, requires compliance with general provisions in another part.

§63.11501(b) - Notification of compliance status (NOCS). Your NOCS required by § 63.9(h) must include the information required by §63.11501(b)(1) through §63.11501(b)(5).

StarPet submitted their NOCS on May 15, 2013. The permit will not include a requirement to submit an NOCS.

63.11501(c) - Recordkeeping. You must maintain files of all information required by this subpart for at least 5 years following the date of each occurrence according to the requirements in § 63.10(b)(1). If you are subject, you must comply with the recordkeeping and reporting requirements of § 63.10(b)(2)(iii) and (vi) through (xiv), and the applicable requirements specified in paragraphs (c)(1) through (8) of this section.

(1) For each CMPU subject to this subpart, you must keep the records specified in paragraphs (c)(1)(i) through (viii) of this section.

(i) Records of management practice inspections, repairs, and reasons for any delay of repair, as specified in § 63.11495(a)(5).

(ii) Records of small heat exchange system inspections, demonstrations of indications of leaks that do not constitute leaks, repairs, and reasons for any delay in repair as specified in § 63.11495(b).

(iii) If batch process vent emissions are less than 10,000 lb/yr for a CMPU, records of batch process vent emission calculations, as specified in § 63.11496(a)(1), the number of batches operated each month, as specified in § 63.11496(a)(3), and any updated emissions calculations, as specified in § 63.11496(a)(3). Alternatively, keep records of the worst-case processes or organic HAP usage, as specified in § 63.11496(a)(2) and (4), respectively.

(iv) Records of all TRE calculations for continuous process vents as specified in § 63.11496(b)(2).

(v) Records of metal HAP emission calculations as specified in § 63.11496(f)(1) and (2). If total uncontrolled metal HAP process vent emissions from a CMPU subject to this subpart are estimated to be less than 400 lb/yr, also keep records of either the number of batches per month or operating hours, as specified in § 63.11496(f)(2).

(vi) Records identifying wastewater streams and the type of treatment they receive, as specified in Table 6 to this subpart.

(vii) Records of the date, time, and duration of each malfunction of operation of process equipment, control devices, recovery devices, or continuous monitoring systems used to comply with this subpart that causes a failure to meet a standard. The record must include a list of the affected sources or equipment, an estimate of the volume of each regulated pollutant emitted over the standard, and a description of the method used to estimate the emissions.

(viii) Records of actions taken during periods of malfunction to minimize emissions in accordance with § 63.11495(d), including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation.

(5) For each wastewater stream subject to Item 2 in Table 6 to this subpart, keep records of the wastewater stream identification and the disposition of the organic phase(s), as specified in Item 2 to Table 6 to this subpart.

(8) For continuous process vents subject to Table 3 to this subpart, keep records of the occurrence and duration of each startup and shutdown of operation of process equipment, or of air pollution control and monitoring equipment.

StarPet shall comply with all recordkeeping requirements, and these requirements will be listed in the permit.

63.11501(d) - Semiannual Compliance Reports. You must submit semiannual compliance reports that contain the information specified in paragraphs (d)(1) through (7) of this section, as applicable. Reports are required only for semiannual periods during which you experienced any of the events described in paragraphs (d)(1) through (8) of this section.

(1) Deviations. You must clearly identify any deviation from the requirements of this subpart.

(2) Delay of repair for a large heat exchange system. You must include the information specified in § 63.104(f)(2) each time you invoke the delay of repair provisions for a heat exchange system with a cooling water flow rate equal to or greater than 8,000 gal/min.

(3) Delay of leak repair. You must provide the following information for each delay of leak repair beyond 15 days for any process equipment, storage tank, surge control vessel, bottoms receiver, and each delay of leak repair beyond 45 days for any heat exchange system with a cooling water flow rate less than 8,000 gal/min: information on the date the leak was identified, the reason for the delay in repair, and the date the leak was repaired.

(4) Process change. You must report each process change that affects a compliance determination and submit a new certification of compliance with the applicable requirements in accordance with the procedures specified in paragraph (b) of this section.

(5) Data for the alternative standard. If you comply with the alternative standard, as specified in Table 2 to this subpart or Table 3 to this subpart, report the information required in 63.1258(b)(5).

(6) Overlapping rule requirements. Report any changes in the overlapping provisions with which you comply.

(8) Malfunctions. If a malfunction occurred during the reporting period, the report must include the number of instances of malfunctions that caused emissions in excess of a standard. For each malfunction that caused emissions in excess of a standard, the report must include a list of the affected sources or equipment, an estimate of the volume of each regulated pollutant emitted over the standard, and a description of the method used to estimate the emissions. The report must also include a description of actions you took during a malfunction of an affected source to minimize emissions in accordance with § 63.11495(d), including actions taken to correct a malfunction.

StarPet shall comply with all reporting requirements, and these requirements will be listed in the permit.

No changes to these requirements are necessary with this permit renewal. Compliance with 02D .1111 is expected.

c. <u>PSD</u>

StarPet is located in Randolph County which is currently in attainment for all NSR regulated pollutants. Further, the StarPet facility does not have the potential to emit any NSR regulated pollutants at a rate greater than major source thresholds and is therefore currently classified as a minor source for PSD/NSR purposes. This permit renewal does not affect this status.

# d. <u>112(r)</u>

StarPet is not subject to Section 112(r) of the Clean Air Act requirements because it does not store any of the regulated substances.

# e. <u>CAM</u>

The compliance assurance monitoring (CAM) rule requires owners and operators to conduct monitoring to provide a reasonable assurance of compliance with applicable requirements under the act. Monitoring focuses on emissions units that rely on pollution control device equipment to achieve compliance with applicable standards. An emission unit is subject to CAM, under 40 CFR Part 64, if all of the following three conditions are met:

- The unit is subject to any (non-exempt, e.g., pre-November 15, 1990, Section 111 or 112 standard) emission limitation or standard for the applicable regulated pollutant.
- The unit uses any control device to achieve compliance with any such emission limitation or standard.
- The unit's pre-control potential emission rate exceeds 100 percent of the amount required for a source to be classified as a major source; i.e., either 100 tpy (for criteria pollutants) or 10 tpy of any individual/25 tpy of any combination of HAP.

In addition, CAM requirements do not apply to the following exempt emissions limitations or standards. Note that the emission unit is subject to CAM requirements if nonexempt emission limitations or standards (e.g., a state rule or a NSPS emission limit promulgated before November 15, 1990) apply to the emissions unit in addition to the following exempt emissions limitations or standards.

- Emission limitations or standards proposed by the Administrator after November 15, 1990 pursuant to section 111 or 112 of the Act.
- Stratospheric ozone protection requirements under title VI of the Act.
- Acid Rain Program requirements pursuant to sections 404, 405, 406, 407(a), 407(b), or 410 of the Act.
- Emission limitations or standards or other applicable requirements that apply solely under an emissions trading program approved or promulgated by the Administrator under the Act that allows for trading emissions within a source or between sources.
- An emissions cap that meets the requirements specified in §70.4(b)(12) or §71.6(a)(13)(iii) of this chapter.
- Emission limitations or standards for which Title V permit contains a continuous compliance determination method, as defined in 40 CFR 64.1, unless the applicable compliance method includes an assumed control device emission reduction factor that could be affected by the actual operation and maintenance of the control device (e.g., a surface coating line controlled by an incinerator for which continuous compliance is determined by calculating emissions on the basis of coating records and an assumed control device efficiency factor based on an initial performance test; in this example, this part would apply to the control device and capture system, but not to the remaining elements of the coating line, such as raw material usage).

None of the permitted sources have uncontrolled emissions greater than 100 tpy. Therefore, CAM does not apply to the StarPet facility.

# 7. Facility Wide Air Toxics

Under this regulation, facilities are required to receive a permit to emit toxic air pollutants (TAPs) where actual emissions are greater than the TAP Permitting Emission Rate (TPER).

Table 7.1 below shows the facility-wide actual emission rate of all TAP emissions reported in the CY2022 annual emission inventory in comparison to the applicable TPER contained in 15A NCAC 02Q .0711(a).

Pollutant	2022 Actual Emissions	2022 Actual Emissions in Units	TPER	Permit Required?
	(lb/yr)	of TPER		
Acetaldehyde	17,318	1.98 lb/hr	6.8 lb/hr	No
Acetic Acid	783	0.09 lb/hr	0.96 lb/hr	No
Acrolein	0.011	1.26E-06 lb/hr	0.02 lb/hr	No
Ammonia	1,957	0.22 lb/hr	0.68 lb/hr	No
Benzene	1.28	1.28 lb/yr	8.1 lb/yr	No
Benzo(a)pyrene	0.0007	0.0007 lb/yr	2.2 lb/yr	No
1,4-Dioxane	701	1.92 lb/day	12 lb/day	No
Formaldehyde	45.7	0.005 lb/hr	0.04 lb/hr	No
n-Hexane	1,101	3.02 lb/day	23 lb/day	No
Styrene	0.931	1.06E-04 lb/hr	2.7 lb/hr	No
Toluona	2.07	0.006 lb/day	98 lb/day	No
Toluelle		2.36E-04 lb/hr	14.4 lb/hr	No
Vulana	0.0004	1.01E-06 lb/day	57 lb/day	No
лутепе		4.22E-08 lb/hr	16.4 lb/hr	No

Table 7.1: Actual TAP Emission Rates from CY2022 Annual Emission Inventory vs. Applicable TPER

No TAP emissions are above the applicable TPER for each pollutant, so a permit is not required per 15A NCAC 02Q .0700. No modeling analysis is required to demonstrate compliance with the Acceptable Ambient Levels (AALs) given in 15A NCAC 02D .1100. The permit renewal does not affect this status.

Many sources at the facility are exempt from toxics permitting per 15A NCAC 02Q .0702(a)(27)(B). However, not all sources of TAPs at the facility are exempt. Although toxics has not been triggered with this permit renewal, the 02Q .0711 permit condition will be added to the permit with this permitting action to ensure continued compliance with the applicable air toxics provisions.

#### 8. Facility Emissions Review

Actual emissions for calendar years 2018 through 2022, as reported in the annual emission inventories, are presented in the table at the beginning of this permit review.

#### 9. Compliance Status

DAQ has reviewed the compliance status of StarPet.

During the most recent inspection, conducted on December 13, 2023 by Robert Barker of WSRO, the facility appeared to be in compliance with all applicable requirements.

The following violations have occurred at the facility within the past five years:

 May 28, 2020 – NOV/NRE issued for operation of CP1 and CP2 without a control device for 6.05 hours after the thermal oxidizer failed. This was a violation of 40 CFR Part 60 Subpart DDD, 40 CFR Part 63 Subpart VVVVVV, and 15A NCAC 02Q .0317 (Avoidance of MACT). A civil penalty of \$22,357 was assessed on November 24, 2020. According to the recent inspection report on December 15, 2023, the penalty was paid on December 23, 2020. Moreover, the facility has certified compliance with all applicable requirements through submittal of the E5 Form, signed by the responsible official, Durgesh Kushwaha, Assistant Vice President (Operations), on October 12, 2021.

# **10.** Public Notice/EPA and Affected State(s) Review

Pursuant to 15A NCAC 2Q .0521, a notice of the DRAFT Title V Permit shall be made. The notice will provide for a 30-day comment period, with an opportunity for a public hearing. Copies of the public notice shall be sent to persons on the Title V mailing list and EPA. Pursuant to 15A NCAC 2Q .0522, a copy of each permit application, each proposed permit and each final permit pursuant shall be provided to EPA.

Public Notice of the DRAFT Title V Permit ran from October 15, 2024 to November 14, 2024.

EPA's 45-day review period ran concurrent with the 30-day Public Notice, from October 15, 2024 to December 2, 2024.

# **11. Other Regulatory Considerations**

- A P.E. seal is NOT required for this renewal application.
- A zoning consistency determination is NOT required for this renewal application.
- A processing fee was not required for the initial permit renewal application.
- The facility does not emit the new HAP, 1-bromopropane.
- EPA has promulgated a rule (88 FR 47029, July 21, 2023), with an effective date of August 21, 2023, removing the emergency affirmative defense provisions in operating permits programs, codified in both 40 CFR 70.6(g) and 71.6(g). EPA has concluded that these provisions are inconsistent with the EPA's current interpretation of the enforcement structure of the CAA, in light of prior court decisions<sup>3</sup>. Moreover, per EPA, the removal of these provisions is also consistent with other recent EPA actions involving affirmative defenses<sup>4</sup> and will harmonize the EPA's treatment of affirmative defenses across different CAA programs. As a consequence of this EPA action to remove these provisions from 40 CFR 70.6(g), it will be necessary for states and local agencies that have adopted similar affirmative defense provisions in their Part 70 operating permit programs to revise their Part 70 programs (regulations) to remove these provisions. In addition, individual operating permits that contain Title V affirmative defenses based on 40 CFR 70.6(g) or similar state regulations will need to be revised.

Regarding NCDAQ, it has not adopted these discretionary affirmative defense provisions in its Title V regulations (15A NCAC 02Q .0500). Instead, DAQ has chosen to include them directly in individual Title V permits as General Condition (GC) J.

Per EPA, DAQ is required to promptly remove such impermissible provisions, as stated above, from individual Title V permits, after August 21, 2023, through normal course of permit issuance. The General Conditions have been updated with this permitting action to remove General Condition J.

• North Carolina DEQ is working to address the environmental impacts of PFAS, or per- and polyfluoroalkyl substances. DEQ is advancing science-based, standards-setting approach for thorough permitting of PFAS releases into the environment. DEQ believes that the standards-based permit limits

<sup>&</sup>lt;sup>3</sup> NRDC v. EPA, 749 F.3d 1055 (D.C. Cir. 2014).

<sup>&</sup>lt;sup>4</sup> In newly issued and revised New Source Performance Standards (NSPS), emission guidelines for existing sources, and NESHAP regulations, the EPA has either omitted new affirmative defense provisions or removed existing affirmative defense provisions. See, e.g., National Emission Standards for Hazardous Air Pollutants for the Portland Cement Manufacturing Industry and Standards of Performance for Portland Cement Plants; Final Rule, 80 FR 44771 (July 27, 2015); National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters; Final Rule, 80 FR 72789 (November 20, 2015); Standards of Performance for Existing Sources: Commercial and Industrial Solid Waste Incineration Units; Final Rule, 81 FR 40956 (June 23, 2016).

reduce the PFAS compounds entering the environment, give the industrial community certainty and set clear targets for PFAS reductions. Accordingly, to undertake any future standards-setting for PFAS emissions, the DEQ is currently collecting information on PFAS uses, creation (product or byproduct), and its environmental releases through a set of screening-questions from some air quality permit-applicants.

The facility was sent a PFAS questionnaire on July 17, 2024. A response was received on August 12, 2024. The questionnaire and the responses received are attached below as Attachment 1. Additionally, the permit will contain a specific condition pursuant to 15A NCAC 02Q .0308 and .0309 for "Disclosure of Information Relating to Emissions of Fluorinated Chemicals". This condition is state-enforceable only and states that the facility must disclose the presence of PFAS containing materials to DAQ within thirty days of becoming aware of such information. Additionally, DAQ may require testing or analysis of the materials to properly evaluate emissions sources at the facility.

# 12. Conclusions, Comments, and Recommendations

The permit renewal application for StarPet located in Asheboro, Randolph County, North Carolina has been reviewed by DAQ to determine compliance with all procedures and requirements. DAQ has determined this facility is complying or will achieve compliance, as specified in the permit, with all requirements that are applicable to the affected sources. DAQ recommends the issuance of Air Permit No. 08157T15 after completion of public participation and EPA's review period.

#### **Attachment 1: Facility Responses to PFAS Questionnaire**

# **DAQ Question 1:**

Will your facility use any material or products in your operations that contain fluorinated chemicals? If so, please identify such materials or products and the fluorinated chemicals they contain. YES. E-206 Silicone Mold Release [1,1,-Difluoroethane (aerosol propellant)]

#### **DAQ Question 2:**

Will your facility formulate/create products or byproducts (directly or indirectly) that contain fluorinated chemicals (across multiple media)? If so, please identify such products or byproducts and the fluorinated chemicals they contain. NO

# **DAQ Question 3:**

Will your facility generate solid, liquid, or gaseous related emissions, discharges, or wastes/products containing fluorinated chemicals? If so, please identify such waste streams or materials and the fluorinated chemicals they contain. Yes. Air releases [1,1-Difluoroethane (aerosol propellent)]

# DAQ Question 4:

Do your facility's processes or operations use equipment, material, or components that contain fluorinated chemicals (e.g., surface coating, clean room applications, solvents, lubricants, fittings, tubing, processing tools, packaging, facility infrastructure, air pollution control units)? Could these processes or operations directly or indirectly (e.g., through leaching, chemical process, heat treatment, pressurization, etc.) result in the release of fluorinated chemicals into the environment? Yes. The process uses a mold release agent which contains a halogenated hydrocarbon/ether blend. The product is supplied as aerosol cans and its function is to prevent the PET product from adhering to the extruder die head and cutters upon restart. The propellent is a 1,1-Difluoroethane/ether blend.

#### **DAQ Question 5:**

List the fluorinated chemicals identified (i.e., through testing or desktop review) above in your response under the appropriate methods/approaches? If one is not, are they on any other known US or International target lists? OTM-45 (air emissions) Methods 533 & 537.1 (drinking water) SW-846: Method 8327 (water) Draft Method 1633 (water, solids, tissue) Total PFAS" Draft Method 1621 for Adsorbable Organic Fluorine (wastewater) Non targeted analytical methods Qualitative approach through suspect screening. 1,1-Difluoroethane.

#### **DAQ Question 6:**

Are there other facilities or operations in the U.S. or internationally engaged in the same or similar activities involving fluorinated chemicals addressed in your response to the above questions? If so, please provide facility identification information? In addition, are there any ISO (International Organization for Standardization) certification requirements? Auriga, Spartenburg, SC and AlphaPet, Decatur, Al, may use similar mold release agent products containing fluorinated hydrocarbons as propellants. NO

#### DAQ Question 7:

Do you plan to store AFFF on site, use it in fire training at the site, use it for fighting fires at the facility, or include it in a fire fighting system at the site? NO

#### DAQ Question 8:

Are other emerging contaminants (e.g., 1,4-dioxane, brome, perchlorate, 1,2,3-Trichloropropane) used in some capacity within your facility or operations? NO. 1,4-Dioxane is produced as a byproduct in the production of PET. However, the emissions are controlled by the RTO or TO, with some small quantity discharged to the local POTW.

DAQ Question 9: Do you need technical assistance to answer the questions above. NO