pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southeast Regional Office
CLEAN WATER PROGRAM

Application Type	**New**	Application No.	**PA0245267**
Facility Type	**Storm Water**	APS ID	**1028836**
Major / Minor	**Minor**	Authorization ID	**1336780**

NPDES PERMIT FACT SHEET INDIVIDUAL INDUSTRIAL WASTE (IW) AND IW STORMWATER

Applicant and Facility Information

Applicant Name	**Arkema Inc.**	Facility Name	**Arkema Inc. West Chester Plant**
Applicant Address	900 First Avenue King Of Prussia, PA 19406-1308	Facility Address	610 S Bolmar Street West Chester, PA 19382-3797
Applicant Contact	Mike Macheski	Facility Contact	Mike Macheski
Applicant Phone	(610) 344-2820	Facility Phone	(610) 344-2820
Client ID	36685	Site ID	454704
SIC Code	2821,2869,2899	Municipality	West Chester Borough
SIC Description	Manufacturing - Chemical Preparations, Manufacturing - Industrial Organic Chemicals, Manufacturing - Plastics Materials and Resins	County	Chester
Date Application Received	December 11, 2020	EPA Waived?	Yes
Date Application Accepted		If No, Reason	

Purpose of Application: General Stormwater permit PAR230031 to PA0245267.

Summary of Review

The applicant submitted a Notice of Intent (NOI) on September 25, 2019 to renew the coverage under the General Permit for discharges of stormwater associated with industrial activities (PAG-03) for their facility located at 610 S. Bolmar Street, West Chester, PA.

In addition, on January 8, 2020 the facility submitted per- and polyfluoroalkyl substances (PFAS) sample results at the request of DEP, as part of the NPDES Permit PAR230031. The results were from the three stormwater outfalls at the facility and showed the combined concentrations of perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS) above EPA's Health Advisory Level at two of the three outfalls sampled. Based on the review of the results, DEP sent out a letter to the applicant on September 11, 2020 requesting an Individual NPDES permit application to be submitted for the facility's discharge.

With the issuance of this individual permit, the previous General Permit PAR230031 will be terminated.

The facility is a chemical plant manufacturing many different acrylate and methacrylate monomers. There are three outfalls at the site discharging to the UNT to the Chester Creek (also known as Goose Creek) (application says East Branch of Chester Creek, but it is actually Chester Creek according to eMapPA). There is an approved TMDL for Goose Creek. According to the guidelines, this permit is waived and does not need to be reviewed by EPA.

Outfalls 001 and 002 are discharging stormwater from roof drainage from manufacturing, laboratory, truck loading and macadam vehicle parking areas.

Approve	Deny	Signatures	Date
X		*Sara Abraham* Sara Reji Abraham, E.I.T. / Project Manager	May 10, 2021
X		*Pravin Patel* Pravin C. Patel, P.E. / Environmental Engineer Manager	05/11/2021

Summary of Review

Outfall 003 is discharging stormwater from roof drainage from manufacturing, truck loading, and macadam vehicle parking areas as well as from non-production grassy and wooded areas.

BMPs include daily observation of the outfalls and of the areas that feed to the outfalls. Any spills are cleaned up immediately. Catch basin valves are kept in the closed position until the accumulated stormwater is evaluated and given the okay to release.

Facility has a wastewater treatment plant on-site that processes rainwater from tank farm dikes, several other runoff areas, and certain process-related washes and rinses. This is primarily water, but has some caustic and process solvent (heptane, toluene, and methylcyclohexane) too. The wastewater treatment plant controls for pH (adding sulfuric acid to neutralize the caustic) and then removes solvent (using a steam stripper column). The solvent is collected and recycled at a separate facility. The effluent water is discharged to the Goose Creek POTW for further treatment, under an Industrial User Permit issued by the West Chester Borough Wastewater Department. It does not discharge to stormwater. As it relates to stormwater, some rainwater that would normally discharge through stormwater outfall 003 is diverted to the light wastewater treatment plant and ultimately its outfall instead. This is an additional precaution, although it is only storm precipitation. The stormwater outfalls and the outfall to the POTW are separate.

Based on the available SIC codes, PAG03 appendix F (Chemical and Allied Products) is applicable to this discharge. The following are the effluent requirements recommended:

Parameters	Limit/Monitoring	Benchmark Values
pH	Report	
COD	Report	120
TSS	Report	100
Nitrate+Nitrite- Nitrogen	Report	
Total Phosphorus	Report	
Total Lead	Report	
Total Zinc	Report	
Total Iron	Report	
Total Aluminum	Report	
PFOA*	Report	
PFOS*	Report	
Total PFOA and PFOS*	Report/ 0.07 ug/l (final limit)	

*PADEP has determined that an effluent limitation for Total PFOA and PFOS is appropriate based on a translation of the general water quality criterion at 25 Pa. Code § 93.6(a). 25 Pa. Code § 93.6(a) is an element of Pennsylvania's EPA-approved water quality standards program.

PADEP does not have specific (numeric) water quality criteria for PFOA and PFOS. 25 Pa. Code § 93.7, Table 3. PADEP does, however, have general (narrative) water quality criteria that it must protect. These general water quality criteria provide: "Water may not contain substances attributable to point or nonpoint source discharges in concentration or amounts sufficient to be inimical or harmful to the water uses to be protected or to human, animal, plant or aquatic life" 25 Pa. Code § 93.6(a). In addition to other applications, PADEP may apply these general water quality criteria to control substances like PFOA and PFOS. 25 Pa. Code § 93.6(b) ("In addition to other substances listed within or addressed by this chapter, specific substances to be controlled include, *but are not limited to*, floating materials, oil, grease, scum and substances that produce color, tastes, odors, turbidity or settle to form deposits").

Federal regulations at 40 C.F.R. § 122.44, which are incorporated by reference in Pennsylvania regulations at 25 Pa. Code § 92a.44, provide that NPDES permits must include any requirements necessary to "achieve water quality standards established under section 303 of the CWA [Clean Water Act], *including State narrative criteria for water quality*." 40 C.F.R. § 122.44(d)(1). Those regulations provide further that "limitations must control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic pollutants) which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, *including State narrative criteria for water quality*." 40 C.F.R. §

Summary of Review

122.44(d)(1)(i). Those regulations then provide that "when determining whether a discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above a *narrative* or numeric criteria within a State water quality standard, the permitting authority shall use procedures which account for existing controls on point and nonpoint sources of pollution, the variability of the pollutant or pollutant parameter in the effluent, the sensitivity of the species to toxicity testing (when evaluating whole effluent toxicity), and *where appropriate*, the dilution of the effluent in the receiving water." 40 C.F.R. § 122.44(d)(1)(ii).

Sampling of stormwater at the Arkema Inc. West Chester Plant site detected combined concentrations of PFOA and PFOS above the drinking water Health Advisory Level (HAL) established by EPA in May 2016. Discharges of stormwater from the site will be to streams that may lose a portion of their base flow to groundwater and therefore have the potential to introduce these contaminants directly to drinking water supplies without any dilution. Potable Water Supply (PWS) is a statewide water use applicable to all surface waters. 25 Pa. Code § 93.4(a). Therefore, PADEP is obligated to ensure that the Unnamed Tributary of Chester Creek (Goose Creek) do not contain PFOA and PFOS attributable to point or nonpoint source discharges in concentration or amounts sufficient to be inimical or harmful to this use. 25 Pa. Code § 93.6(a). PADEP is also obligated to ensure that the Unnamed Tributary of Chester Creek (Goose Creek) do not contain PFOA and PFOS attributable to point or nonpoint source discharges in concentration or amounts sufficient to be inimical or harmful to human life. 25 Pa. Code § 93.6(a). For all of these reasons, PADEP's review of the permit application identified that PFOA and PFOS may be discharged at a level that will cause, have the reasonable potential to cause, or contribute to an excursion above PADEP's narrative criteria in concentration or amounts sufficient to be inimical or harmful to the water uses to be protected, in this case, the PWS water use, and to human life.

The federal regulations at 40 C.F.R. § 122.44 explain how permitting authorities are to translate narrative criteria into numeric effluent limitations. In relevant part, those regulations provide as follows:

> Where a State has not established a water quality criterion for a specific chemical pollutant that is present in an effluent at a concentration that causes, has the reasonable potential to cause, or contributes to an excursion above a narrative criterion within an applicable State water quality standard, the permitting authority must establish effluent limits using one or more of the following options:
>
> Establish effluent limits using a calculated numeric water quality criterion for the pollutant which the permitting authority demonstrates will attain and maintain applicable narrative water quality criteria and will fully protect the designated use. Such a criterion may be derived using a proposed State criterion, or an explicit State policy or regulation interpreting its narrative water quality criterion, supplemented with other relevant information which may include: EPA's Water Quality Standards Handbook, October 1983, risk assessment data, exposure data, information about the pollutant from the Food and Drug Administration, and current EPA criteria documents.

40 C.F.R. § 122.44(d)(1)(vi)(A).

PADEP derived a calculated numeric water quality criterion for PFOA and PFOS using the Pennsylvania regulation interpreting its narrative water quality criterion set forth at 25 Pa. Code § 96.3(c) ("The general water quality criteria in § 93.6 (relating to general water quality criteria) shall be achieved in surface waters at all times at design conditions"), which it supplemented with other relevant information, namely, the HAL, which is relevant to protect the PWS water use and human life, to establish an effluent limitation of 0.07 µg/l for Total PFOA and PFOS.

On April 16, 2021 the applicant submitted a PFOA/PFOS compliance action plan consisting of a phased approach. The main components are the following: (i) Preliminary Source Identification and Assessment – Records Review (ii) Evaluation of PFOA/PFOS Sampling Results (iii) Develop and Implement Potential Source Sampling Plan (iv) Develop and Implement Potential Source Reduction/Action Plan (if needed). Based on the submitted plan a compliance schedule is incorporated in the permit to achieve compliance with the final effluent limit for Total PFOA and PFOS beginning Year 5 of the permit term.

On April 27, 2021 the facility submitted additional sampling results from their stormwater outfalls. All three outfalls showed combined concentrations of PFOA and PFOS above EPA's HAL.

Summary of Review

Public Participation

DEP will publish notice of the receipt of the NPDES permit application and a tentative decision to issue the individual NPDES permit in the *Pennsylvania Bulletin* in accordance with 25 Pa. Code § 92a.82. Upon publication in the *Pennsylvania Bulletin*, DEP will accept written comments from interested persons for a 30-day period (which may be extended for one additional 15-day period at DEP's discretion), which will be considered in making a final decision on the application. Any person may request or petition for a public hearing with respect to the application. A public hearing may be held if DEP determines that there is significant public interest in holding a hearing. If a hearing is held, notice of the hearing will be published in the *Pennsylvania Bulletin* at least 30 days prior to the hearing and in at least one newspaper of general circulation within the geographical area of the discharge.

Act 14 Notifications:

West Chester Borough - December 23, 2020
Chester County - December 29, 2020

Permit conditions:

A. Stormwater Outfalls
B. Best Management Practices
C. Routine Inspections
D. PPC Plan
E. Stormwater Monitoring
F. Acquire Necessary Property Rights
G. Proper Sludge Disposal
H. Schedule of Compliance

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	0
Latitude	39º 57' 19.47"	Longitude	-75º 35' 18.55"
Quad Name	West Chester	Quad Code	1941
Wastewater Description:	Stormwater		
Receiving Waters	Unnamed Tributary of Chester Creek (Goose Creek) (TSF, MF)	Stream Code	00619
NHD Com ID	25621262	RMI	0.11
Watershed No.	3-G	Chapter 93 Class.	TSF, MF
Assessment Status	Impaired		
Cause(s) of Impairment	cause unknown, dewatering, flow regime modification, pathogens,		
Source(s) of Impairment	impacts from hydrostructure flow regulation/modification, municipal point source discharges, source unknown, urban runoff/storm sewers		
TMDL Status	Final	Name	Goose Creek

Discharge, Receiving Waters and Water Supply Information

Outfall No.	002	Design Flow (MGD)	0
Latitude	39º 57' 17.85"	Longitude	-75º 35' 24.25"
Quad Name	West Chester	Quad Code	1941
Wastewater Description:	Stormwater		
Receiving Waters	Unnamed Tributary to Chester Creek (Goose Creek) (TSF, MF)	Stream Code	00619
NHD Com ID	25621264	RMI	0.07
Watershed No.	3-G	Chapter 93 Class.	TSF, MF
Assessment Status	Impaired		
Cause(s) of Impairment	cause unknown, dewatering, flow regime modification, pathogens		
Source(s) of Impairment	impacts from hydrostructure flow regulation/modification, municipal point source discharges, source unknown, urban runoff/storm sewers		
TMDL Status	Final	Name	Goose Creek

Discharge, Receiving Waters and Water Supply Information

Outfall No.	003	Design Flow (MGD)	0
Latitude	39º 57' 18.13"	Longitude	-75º 35' 24.89"
Quad Name	West Chester	Quad Code	1941
Wastewater Description:	Stormwater		
Receiving Waters	Unnamed Tributary to Chester Creek (Goose Creek) (TSF, MF)	Stream Code	00619
NHD Com ID	25621264	RMI	0.04
Watershed No.	3-G	Chapter 93 Class.	TSF, MF
Assessment Status	Impaired		
Cause(s) of Impairment	cause unknown, dewatering, flow regime modification, pathogens		
Source(s) of Impairment	impacts from hydrostructure flow regulation/modification, municipal point source discharges, source unknown, urban runoff/storm sewers		
TMDL Status	Final	Name	Goose Creek

Compliance History

DMR Data for Outfall 001 (from November 1, 2019 to October 31, 2020)

Parameter	OCT-20	SEP-20	AUG-20	JUL-20	JUN-20	MAY-20	APR-20	MAR-20	FEB-20	JAN-20	DEC-19	NOV-19
pH (S.U.) Daily Maximum					7.17						6.93	
COD (mg/L) Daily Maximum					32						46	
TSS (mg/L) Daily Maximum					12						7	
Nitrate-Nitrite (mg/L) Daily Maximum					< 1.10						< 2.20	
Total Phosphorus (mg/L) Daily Maximum					0.11						< 0.05	
Total Aluminum (mg/L) Daily Maximum					0.17						0.13	
Total Iron (mg/L) Daily Maximum					0.22						0.12	
Total Lead (mg/L) Daily Maximum					0.001						0.001	
Total Zinc (mg/L) Daily Maximum					0.249						0.284	

DMR Data for Outfall 002 (from November 1, 2019 to October 31, 2020)

Parameter	OCT-20	SEP-20	AUG-20	JUL-20	JUN-20	MAY-20	APR-20	MAR-20	FEB-20	JAN-20	DEC-19	NOV-19
pH (S.U.) Daily Maximum					7.31						6.52	
COD (mg/L) Daily Maximum					38						40	
TSS (mg/L) Daily Maximum					5						10	
Nitrate-Nitrite (mg/L) Daily Maximum					< 1.10						< 2.20	
Total Phosphorus (mg/L) Daily Maximum					0.12						< 0.05	
Total Aluminum (mg/L) Daily Maximum					0.14						0.12	

Total Iron (mg/L) Daily Maximum					0.24						0.19	
Total Lead (mg/L) Daily Maximum					0.001						0.001	
Total Zinc (mg/L) Daily Maximum					0.157						0.153	

DMR Data for Outfall 003 (from November 1, 2019 to October 31, 2020)

Parameter	OCT-20	SEP-20	AUG-20	JUL-20	JUN-20	MAY-20	APR-20	MAR-20	FEB-20	JAN-20	DEC-19	NOV-19
pH (S.U.) Daily Maximum					6.71						6.62	
COD (mg/L) Daily Maximum					34						189	
TSS (mg/L) Daily Maximum					7						123	
Nitrate-Nitrite (mg/L) Daily Maximum					< 1.10						< 2.20	
Total Phosphorus (mg/L) Daily Maximum					0.14						0.24	
Total Aluminum (mg/L) Daily Maximum					0.12						0.35	
Total Iron (mg/L) Daily Maximum					1.05						1.77	
Total Lead (mg/L) Daily Maximum					0.005						0.006	
Total Zinc (mg/L) Daily Maximum					2.08						3.15	

Proposed Effluent Limitations and Monitoring Requirements

Outfall 001, Effective Period: Permit Effective Date through Permit Expiration Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
pH (S.U.)	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
COD	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
TSS	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Nitrate-Nitrite	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Phosphorus	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Aluminum	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Iron	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Lead	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Zinc	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
PFOA (ug/L)	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
PFOS (ug/L)	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total PFOA and PFOS (ug/L) (permit effective date to completion of year 4)	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Calculation
Total PFOA and PFOS (ug/L) (beginning of year 5 to permit expiration date)	XXX	XXX	XXX	XXX	0.07	XXX	1/6 months	Calculation

Proposed Effluent Limitations and Monitoring Requirements

Outfall 002, Effective Period: Permit Effective Date through Permit Expiration Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
pH (S.U.)	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
COD	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
TSS	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Nitrate-Nitrite	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Phosphorus	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Aluminum	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Iron	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Lead	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Zinc	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
PFOA (ug/L)	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
PFOS (ug/L)	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total PFOA and PFOS (ug/L) (permit effective date to completion of year 4)	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Calculation
Total PFOA and PFOS (ug/L) (beginning of year 5 to permit expiration date)	XXX	XXX	XXX	XXX	0.07	XXX	1/6 months	Calculation

Proposed Effluent Limitations and Monitoring Requirements

Outfall 003, Effective Period: Permit Effective Date through Permit Expiration Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
pH (S.U.)	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
COD	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
TSS	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Nitrate-Nitrite	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Phosphorus	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Aluminum	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Iron	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Lead	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Zinc	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
PFOA (ug/L)	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
PFOS (ug/L)	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total PFOA and PFOS (ug/L) (permit effective date to completion of year 4)	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Calculation
Total PFOA and PFOS (ug/L) (beginning of year 5 to permit expiration date)	XXX	XXX	XXX	XXX	0.07	XXX	1/6 months	Calculation