pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southeast Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0053538**
Facility Type	**Storm Water**	APS ID	**999935**
Major / Minor	**Minor**	Authorization ID	**1284809**

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

Applicant and Facility Information

Applicant Name	**Merck Sharp & Dohme Corp**	Facility Name	**Merck Sharp & Dohme Corp**
Applicant Address	770 Sumneytown Pike West Point, PA 19486	Facility Address	770 Sumneytown Pike West Point, PA 19486-8000
Applicant Contact	Marcos Costa	Facility Contact	Cassie Gaudiosi
Applicant Phone	(215) 652-4795	Facility Phone	(215) 652-7548
Client ID	294671	Site ID	245458
SIC Code	2833, 2834, 2836	Municipality	Upper Gwynedd Township
SIC Description	Manufacturing - Biological Products, Except Diagnostic,Manufacturing - Medicinals And Botanicals,Manufacturing - Pharmaceutical Preparations	County	Montgomery
Date Application Received	August 2, 2019	EPA Waived?	Yes
Date Application Accepted	March 2, 2020	If No, Reason	
Purpose of Application	Permit Renewal.		

Summary of Review

The PA Department of Environmental Protection (PADEP/Department) received the NPDES permit renewal application from Merck Sharp & Dohme Corp (Merck/permittee) August 2, 2019 for Merck's West Point facility (facility). This is an individual industrial stormwater permit (NSIR) located in Upper Gwynedd Township, Montgomery County. The discharges are in UNTs to Wissahickon Creek (TSF, MF) and UNT to Perkiomen Creek (TSF, MF), in state watershed 3-E and 3-F. The existing permit was expired on January 31, 2020. The terms and conditions of the permit were automatically extended since the renewal application was received at least 180 days prior to the permit expiration date. Renewal NPDES permit applications under Clean Water program are not covered by DEP's PDG, per 021-2100-001.

This fact sheet is prepared per 40 CFR §124.56.

Changes in this renewal:
Semiannual monitoring requirements are added for COD, TSS, Total Aluminum, and Total Lead for all outfalls. Monthly pH limits are applied at all outfalls.

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.

Approve	Deny	Signatures	Date
√		Reza H. Chowdhury, E.I.T. / Project Manager	April 27, 2020
X		Pravin C. Patel, P.E. / Environmental Engineer Manager	04/27/2020

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	0
Latitude	40º 12' 35"	Longitude	-75º 17' 53"
Quad Name	Lansdale	Quad Code	82201
Wastewater Description:	Stormwater discharge from Detention Basin 4		
Receiving Waters	Unnamed Tributary to Wissahickon Creek (TSF, MF)	Stream Code	00894
NHD Com ID	25979062	RMI	0.27
Drainage Area	0.12 mi^2	Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)	0.00212	Q_{7-10} Basis	
Elevation (ft)	329.95	Slope (ft/ft)	
Watershed No.	3-F	Chapter 93 Class.	TSF, MF
Existing Use		Existing Use Qualifier	
Exceptions to Use	None	Exceptions to Criteria	N/A
Assessment Status	Impaired		
Cause(s) of Impairment	CAUSE UNKNOWN, FLOW REGIME MODIFICATION, PATHOGENS, SILTATION		
Source(s) of Impairment	HABITAT MODIFICATION - OTHER THAN HYDROMODIFICATION, SOURCE UNKNOWN, URBAN RUNOFF/STORM SEWERS		
TMDL Status	Final, October 2003	Name	TMDL for Sediment and Nutrients, Wissahickon Creek
Nearest Downstream Public Water Supply Intake	Philadelphia Water Dept. – Queen Lane		
PWS Waters	Schuylkill River	Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	Approximately 20 miles

Changes Since Last Permit Issuance: None

Note: North Wales Water Authority operates 500 feet deep well 4600 ft. downstream Outfall 001.

Other Comments: None

Discharge, Receiving Waters and Water Supply Information

Outfall No.	002	Design Flow (MGD)	0
Latitude	40º 12' 57"	Longitude	-75º 18' 24"
Quad Name	Lansdale	Quad Code	82201
Wastewater Description:	Stormwater discharge through Detention Basin 2		
Receiving Waters	Unnamed Tributary to Towamencin Creek (TSF)	Stream Code	01079
NHD Com ID	25979388	RMI	1.0
Drainage Area	0.051 mi^2	Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)	326.68	Slope (ft/ft)	
Watershed No.	3-E	Chapter 93 Class.	TSF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	FLOW REGIME MODIFICATION, SILTATION		
Source(s) of Impairment	SITE CLEARANCE (LAND DEVELOPMENT OR REDEVELOPMENT), URBAN RUNOFF/STORM SEWERS		
TMDL Status	Final April 2005 for Siltation	Name	Skippack Creek Watershed TMDL
Nearest Downstream Public Water Supply Intake	Aqua Pennsylvania, Inc. – Wetherill Dam		
PWS Waters	Perkiomen Creek	Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	Approximately 14.5 miles

Changes Since Last Permit Issuance:

Other Comments:

Discharge, Receiving Waters and Water Supply Information

Outfall No.	003	Design Flow (MGD)	0
Latitude	40º 12' 46"	Longitude	-75º 18' 8"
Quad Name	Lansdale	Quad Code	82201
Wastewater Description:	Stormwater discharge from Detention Basin 3		
Receiving Waters	Wissahickon Creek (TSF, MF)	Stream Code	00844 (secondary stream)
NHD Com ID	25979060	RMI	20.900
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)	355.03	Slope (ft/ft)	
Watershed No.	3-F	Chapter 93 Class.	TSF, MF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	CAUSE UNKNOWN, FLOW REGIME MODIFICATION, HABITAT ALTERATIONS, NUTRIENTS, PATHOGENS, SILTATION		
Source(s) of Impairment	HABITAT MODIFICATION - OTHER THAN HYDROMODIFICATION, MUNICIPAL POINT SOURCE DISCHARGES, SOURCE UNKNOWN, URBAN RUNOFF/STORM SEWERS		
TMDL Status	Final, October 2003	Name	TMDL for Sediment and Nutrients, Wissahickon Creek
Nearest Downstream Public Water Supply Intake	Philadelphia Water Dept. – Queen Lane		
PWS Waters	Schuylkill River	Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	Approximately 20 miles

Changes Since Last Permit Issuance: None

Existing Limits

For Outfalls 001, 002, and 003

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day)		Concentrations (mg/L)				Minimum Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Estimate
Total Phosphorus	XXX	XXX	XXX	Report	Report Daily Max	XXX	1/month	24-Hr Composite

Compliance History

DMR Data for Outfall 001 (from February 1, 2019 to January 31, 2020)

Parameter	JAN-20	DEC-19	NOV-19	OCT-19	SEP-19	AUG-19	JUL-19	JUN-19	MAY-19	APR-19	MAR-19	FEB-19
Flow (MGD) Average Monthly	0.156	0.224	0.115	0.453	0.097	0.104	0.416	0.258	0.318	0.235	0.287	0.128
Flow (MGD) Daily Maximum	4.050	1.622	2.872	4.015	1.565	2.320	3.176	3.260	3.017	3.176	3.869	1.343
Total Phosphorus (mg/L) Average Monthly	0.11	< 0.10	0.12	0.13	0.19	0.14	0.46	0.13	0.59	< 0.10	< 0.10	0.14
Total Phosphorus (mg/L) Daily Maximum	0.11	< 0.10	0.12	0.13	0.19	0.14	0.46	0.13	0.59	< 0.10	< 0.10	0.14

DMR Data for Outfall 002 (from February 1, 2019 to January 31, 2020)

Parameter	JAN-20	DEC-19	NOV-19	OCT-19	SEP-19	AUG-19	JUL-19	JUN-19	MAY-19	APR-19	MAR-19	FEB-19
Flow (MGD) Average Monthly	0.124	0.180	0.090	0.349	0.070	0.080	0.325	0.207	0.252	0.179	0.223	0.097
Flow (MGD) Daily Maximum	3.144	1.307	2.387	3.089	1.985	1.830	2.464	2.549	2.360	2.963	2.999	1.108
Total Phosphorus (mg/L) Average Monthly	< 0.10	< 0.10	< 0.10	0.23	0.14	0.12	< 0.10	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Phosphorus (mg/L) Daily Maximum	< 0.10	< 0.10	< 0.10	0.23	0.14	0.12	< 0.10	0.10	< 0.10	< 0.10	< 0.10	< 0.10

DMR Data for Outfall 003 (from February 1, 2019 to January 31, 2020)

Parameter	JAN-20	DEC-19	NOV-19	OCT-19	SEP-19	AUG-19	JUL-19	JUN-19	MAY-19	APR-19	MAR-19	FEB-19
Flow (MGD) Average Monthly	0.018	0.026	0.012	0.054	0.010	0.011	0.050	0.030	0.037	0.026	0.032	0.013
Flow (MGD) Daily Maximum	0.497	0.340	0.374	0.490	0.189	0.283	0.402	0.400	0.370	0.468	0.476	0.167
Total Phosphorus (mg/L) Average Monthly	0.31	0.10	0.2	< 0.10	0.10	0.18	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Phosphorus (mg/L) Daily Maximum	0.31	< 0.10	0.2	< 0.10	0.10	0.18	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10

Compliance History: There is no eDMR violation generated for last 12 months.

Facility Description

The permittee requests renewal of their NPDES permit to continue discharge of stormwater associated with industrial activities at their West Point facility, located at 770 Sumneytown Pike. Activities at the site include manufacturing of pharmaceutical and biological medicinal products and related research. Manufacturing activities include biological fermentation process, mixing and compounding of raw materials for drug formulation, capsule and tablet formulation and coating, and packaging of these products. There are six detention basins at the site. Detention basins 1, 5, and 6 receive stormwater from parking lots and garages only. This permit covers detention basins 2, 3, and 4. The activities for the catchment areas of each of the basins are listed below:

Basin no.	Outfall no.	Area (acres)	% impervious	Activities
DB4	001	133.98	70	Pharmaceutical and vaccine research buildings, vaccine manufacturing buildings, laboratory buildings, powerhouse and oil storage tank areas, water treatment and handling buildings, maintenance and utility buildings, warehousing, chemical storage tanks, parking lots, sidewalks, lawns, and other undeveloped space
DB2	002	93.6	74	Pharmaceutical and vaccine research buildings, vaccine manufacturing buildings, laboratory buildings, powerhouse and oil storage tank areas, water treatment and handling buildings, maintenance and utility buildings, warehousing, chemical storage tanks, parking lots, sidewalks, lawns, and other undeveloped space
DB3	003	15.89	78	Pharmaceutical and vaccine research buildings, vaccine manufacturing buildings, laboratory buildings, powerhouse and oil storage tank areas, water treatment and handling buildings, maintenance and utility buildings, warehousing, chemical storage tanks, parking lots, sidewalks, lawns, and other undeveloped space

Detention basin 2 drains to an unnamed, intermittent tributary to Towamencin Creek. Detention basins 3 and 4 discharge to unnamed, intermittent tributaries to Wissahickon Creek. Per the previous permit fact sheet, flow for each of the basins is measured by a Sigma flow meter. The basins are equipped with gate valves that are opened during daytime work hours Sunday through Saturday and are normally closed at all other times of day unless a large precipitation event is forecasted. If, except for one site building 68/68A, which has separate BMPs, spilled material from industrial areas enter the storm water system, it will drain to one of the three basins, where procedures are in place to shut the outfall valve, if open, and contain the spill. The permittee provided Environmental Emergency Response Plan (EERP) to PADEP on December 21, 2018 and Spill Prevention, Control, and Countermeasure (SPCC) Plan on June 22, 2018.

Chemical additives, specifically TRASAR 3DT230 and Nalco TRAC-107 Plus, are used in the facility's closed loop cooling system. Several releases have been reported from August 2014 to July 2019. Both of the chemicals are on DEP's Approved List of Chemical Additives. TRASAR 3DT230 was approved on 09/17/2018 and TRAC107 Plus was approved on 05/03/2016. The existing language related to chemical additives will remain in the permit. The spills didn't cause a non-compliance by the operations section.

Development of effluent limitations

The existing permit has effluent flow and Total Phosphorus monitoring requirements for all outfalls. Flow monitoring will remain in the permit and is required by 40 CFR § 122.44(i)(1)(ii). The Total Phosphorus monitoring requirements was based on the downstream nutrient impairments.

The applicable SIC codes for this facility are 2834, 2836, and 2833. All three fall under PAG03 Appendix F (Chemicals and Allied Products). The Appendix F contains the following limits/monitoring requirements:

Parameter	Monitoring Requirements		Benchmark Values
	Minimum Measurement Frequency	Sample Type	
pH (S.U.)	1 / 6 months	Grab	XXX
Chemical Oxygen Demand (COD) (mg/L)	1 / 6 months	Grab	120
Total Suspended Solids (TSS) (mg/L)	1 / 6 months	Grab	100
Nitrate + Nitrite-Nitrogen (mg/L)	1 / 6 months	Grab	XXX
Total Phosphorus (mg/L)	1 / 6 months	Grab	XXX

Total Lead (mg/L)	1 / 6 months	Grab	XXX
Total Zinc (mg/L)	1 / 6 months	Grab	XXX
Total Iron (mg/L)	1 / 6 months	Grab	XXX
Total Aluminum (mg/L)	1 / 6 months	Grab	XXX

The 2009 permit removed the monitoring/limits requirements for Iron, Zinc, and Magnesium with the consideration of natural occurrence in regional soil and non-detect values. The sampling results submitted with the application indicated the following:

Pollutant	Maximum Concentration		
	Outfall 001 Sampled on 6/29/19	Outfall 002 Sampled on 6/29/19	Outfall 003 Sampled on 6/29/19
Oil & Grease	<5.0	<14.5	<5.0
BOD5 (mg/l)	35.8	177	9.52
COD (mg/l)	84.5	245	55.3
TSS (mg/l)	80.0	145	31.0
Total Nitrogen (mg/l)	3.1	2.2	1.1
Total Phosphorus (mg/l)	0.8	0.2	0.5
pH (S.U.)	6.49	7.62	6.56

Chemical Oxygen Demand (COD): Since the discharge concentration for COD at all outfalls are relatively higher, a monitoring requirement will be placed for all outfalls with a frequency of 1/6 months. The benchmark numerical limit will not be applied in the part A of the permit, however, it may be included in Part C.

Total Suspended Solids (TSS): The maximum reported concentration from outfalls 001, 002, and 003 are 80 mg/l, 145 mg/l, and 31 mg/l. Monitoring requirements for TSS are being applied to almost all individual stormwater permits and are recommended for this facility. The benchmark values will be added in Part C for all outfalls.

Nitrate-Nitrite-N: The mass based loading rates of Total Nitrogen for Outfalls 001, 002, and 003 were below threshold, no monitoring for TN or Nitrate-Nitrite-N will be applied.

Total Phosphorus: Total Phosphorus is an existing parameter that is being monitored. The monthly average discharge concentration from February 1, 2019 to January 31, 2020 was <0.19 mg/l. The existing monitoring requirement will be carried over in this renewal.

Total Lead: PADEP doesn't have any sample result to conduct reasonable potential analysis for Total Lead. Semiannual monitoring for Total Lead is recommended for all outfalls to collect data for future use.

Total Aluminum: PADEP doesn't have any sample result to conduct reasonable potential analysis for Total Aluminum. Semiannual monitoring for Total Aluminum is recommended for all outfalls to collect data for future use.

pH: The facility utilizes some chemical additives which may alter the pH of the influent water. Therefore, standard pH limits of 6.0~9.0 is recommended to be applied at all outfalls.

Additional request from permittee: The permittee requested the following two modification/clarification in the Part C of the permit:

1. Requested to add planned live fire demonstration: The permittee provided the following additional information "A planned live fire demonstration would typically be done once per year as part of fire prevention training at the site. During the demonstration, small rooms within a trailer are set on fire and extinguished with approximately 100 gallons of potable water, which would drain from the trailer. The potable water would flow over paper, cardboard, and wood and not come in contact with any chemicals or hazardous materials before discharging to a storm sewer, which would discharge to one of our three permitted detention basins. Location of the trailer would be separate from any potential sources of contamination. The burnt products would be disposed of via normal waste disposal streams. Date, time, location would be known prior to the event. Trying to capture and contain this water would be difficult due to the configuration of the trailers (often use a FEMA demo trailer that travels across the country without capturing the water)." PADEP agrees with their proposal with the recommendation that the permittee should give it a priority to direct the fire fighting water to a vegetated area and not into a stormwater inlet. Part C condition will be updated to reflect the change and PADEP's recommendation.

2. Permittee requested to exclude condensate from AC and coolers/chillers that do not contain oil to not go through Oil Water Separator: The permittee provided additional information on that request "The request was to clarify that we are authorized to discharge uncontaminated condensate from non-oil-containing HVAC equipment without requiring treatment through an OWS. The condensate will not contain oil because there is no oil in the equipment. When I spoke with Tom Magge and Bob Bauer, their understanding was that the OWS requirement was specific to compressors that may contain oil, which is not what we are requesting." PADEP agrees with this request and will modify the appropriate Part C condition.

Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (362-0400-001), SOPs and/or BPJ.

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

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day)		Concentrations (mg/L)					
	Average Monthly	Average Weekly	Minimum	Semi-Annual Average	Daily Maximum	Instant. Maximum	Minimum Measurement Frequency	Required Sample Type
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Estimate
Chemical Oxygen Demand (COD)	XXX	XXX	XXX	Report	Report	XXX	1//6 month	24-Hr Composite
pH (S.U.)	XXX	XXX	6.0 Instantaneous Minimum	XXX	9.0 IMAX	XXX	1/month	Grab
Total Suspended Solids	XXX	XXX	XXX	Report	Report	XXX	1/6 month	24-Hr Composite
Total Phosphorus	XXX	XXX	XXX	Report Avg Mo	Report	XXX	1/month	24-Hr Composite
Aluminum, Total	XXX	XXX	XXX	Report	Report	XXX	1/6 months	24-Hr Composite
Lead, Total	XXX	XXX	XXX	Report	Report	XXX	1/6 months	24-Hr Composite

Compliance Sampling Location: Outfall 001 at the discharge point from Detention Basin No. 4.

Other Comments: None

Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (362-0400-001), SOPs and/or BPJ.

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

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day)		Concentrations (mg/L)					
	Average Monthly	Average Weekly	Minimum	Semi-Annual Average	Daily Maximum	Instant. Maximum	Minimum Measurement Frequency	Required Sample Type
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Estimate
Chemical Oxygen Demand (COD)	XXX	XXX	XXX	Report	Report	XXX	1//6 month	24-Hr Composite
pH (S.U.)	XXX	XXX	6.0 Instantaneous Minimum	XXX	9.0 IMAX	XXX	1/month	Grab
Total Suspended Solids	XXX	XXX	XXX	Report	Report	XXX	1/6 months	24-Hr Composite
Total Phosphorus	XXX	XXX	XXX	Report Avg Mo	Report	XXX	1/month	24-Hr Composite
Aluminum, Total	XXX	XXX	XXX	Report	Report	XXX	1/6 months	24-Hr Composite
Lead, Total	XXX	XXX	XXX	Report	Report	XXX	1/6 months	24-Hr Composite

Compliance Sampling Location: Outfall 002 at the discharge point from Detention Basin No. 2.

Other Comments: None

Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (362-0400-001), SOPs and/or BPJ.

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

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day)		Concentrations (mg/L)					
	Average Monthly	Average Weekly	Minimum	Semi-Annual Average	Daily Maximum	Instant. Maximum	Minimum Measurement Frequency	Required Sample Type
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Estimate
Chemical Oxygen Demand (COD)	XXX	XXX	XXX	Report	Report	XXX	1//6 month	24-Hr Composite
pH (S.U.)	XXX	XXX	6.0 Instantaneous Minimum	XXX	9.0 IMAX	XXX	1/month	Grab
Total Suspended Solids	XXX	XXX	XXX	Report	Report	XXX	1/6 month	24-Hr Composite
Total Phosphorus	XXX	XXX	XXX	Report Avg Mo	Report	XXX	1/month	24-Hr Composite
Aluminum, Total	XXX	XXX	XXX	Report	Report	XXX	1/6 months	24-Hr Composite
Lead, Total	XXX	XXX	XXX	Report	Report	XXX	1/6 months	24-Hr Composite

Compliance Sampling Location: Outfall 003 at the discharge point from Detention Basin No. 3.

Other Comments: None