pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southcentral Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0009288**
Facility Type	**Industrial**	APS ID	**277452**
Major / Minor	**Minor**	Authorization ID	**1183282**

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

Applicant and Facility Information

Applicant Name	**Milton Hershey School**	Facility Name	**Milton Hershey School**
Applicant Address	1201 Homestead Lane	Facility Address	1201 Homestead Lane
	Hershey, PA 17033-8818		Hershey, PA 17033-8818
Applicant Contact	J. Rick Becker	Facility Contact	J. Rick Becker
Applicant Phone	(717) 520-2150	Facility Phone	
Client ID	44915	Site ID	508725
SIC Code	8211	Municipality	Derry Township
SIC Description	Services - Elementary And Secondary Schools	County	Dauphin
Date Application Received	May 19, 2017	EPA Waived?	Yes
Date Application Accepted	June 2, 2017	If No, Reason	

Purpose of Application: NPDES Renewal to discharge non-contact cooling water.

Summary of Review

1.0 General Discussion

This factsheet supports the renewal of an existing NPDES permit for discharge of non-contact cooling water. The non-contact cooling water is generated from an ice rink refrigeration equipment and is discharged into a cooling pond (Founders Hall Pond) and flows into an UNT of Spring Creek via outfall 001. The facility used to have two outfalls, outfall 001 which monitored water from an open-loop groundwater source heat exchanger and outfall 002 which monitors cooling water from the ice rink refrigeration equipment. The open-loop groundwater source heat exchanger operation was eliminated during the previous permit cycle and only one outfall 001(formerly 002) was associated with the permit. The ice rink discharge was believed to go into a storm drain rather than the Founders Hall Pond, but the flow was rerouted, and the discharge now goes to the pond and to the UNT of Spring Creek as was permitted. Outfall 001 is located at the point where Founders pond discharges to the UNT of Spring Creek. The ice rink operation is seasonal, starts in November and ends in March. The non-contact cooling water from the operation discharges to a pipe in the basement of the building and flows into a storm sewer in the rear of the power center building and travels about 1800feet to the Founders Hall Pond. The previous protection report indicates that, the point of first use for the discharge has been set at the point where the pond discharges into the UNT of Spring Creek currently outfall 001. The UNT of Spring Creek is classified for warm water fishes (WWF) and Migratory Fishes (MF). Expected maximum waste flow from the operation is about 1MGD which will be used to develop temperature limits for this renewal. The existing NPDES permit was issued on September 17, 2012 with an effective date of October 1, 2012 and expiration date of September 30, 2017. The applicant submitted permit renewal application to the Department on May 19, 2017. The permittee is currently operating under the terms and conditions in the existing permit under administrative extension provisions pending Department action on the permit application. A topographical map showing the discharge location is presented in attachment A.

Approve	Deny	Signatures	Date
X		J. Pascal Kwedza, P.E. / Environmental Engineer	August 16, 2019
		Daniel W. Martin, P.E. / Environmental Engineer Manager	
		Maria D. Bebenek, P.E./Program Manager	

Summary of Review

1.1 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.

1.2 Changes to the existing Permit

- pH limit of 6-9 S.U with weekly monitoring has been added.

1.3 Existing Permit limits and Monitoring Requirements

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	Maximum	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	1/day	Measured
Temperature (ºF) Dec 1 - Feb 28	XXX	XXX	XXX	XXX	45 Daily Max	XXX	1/week	I-S
Temperature (ºF) Mar 1 - 31	XXX	XXX	XXX	XXX	59 Daily Max	XXX	1/week	I-S
Temperature (ºF) Apr 1 - Oct 31	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/week	I-S
Temperature (ºF) Nov 1 - 30	XXX	XXX	XXX	XXX	63 Daily Max	XXX	1/week	I-S

1.4 Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	1
Latitude	40º 16' 22.59"	Longitude	-76º 37' 47.95"
Quad Name	Hershey	Quad Code	1632
Wastewater Description:	Noncontact Cooling Water (NCCW)		
Receiving Waters	Unnamed Tributary to Spring Creek (WWF, MF)	Stream Code	09513
NHD Com ID	133783998	RMI	1.10
Drainage Area	3.6	Yield (cfs/mi^2)	0.14
Q_{7-10} Flow (cfs)	0.50	Q_{7-10} Basis	USGS Gage Station
Elevation (ft)		Slope (ft/ft)	
Watershed No.	7-D	Chapter 93 Class.	WWF, MF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	Siltation		
Source(s) of Impairment	Agriculture		
TMDL Status		Name	

Background/Ambient Data		Data Source
pH (SU)		
Temperature (°F)		
Hardness (mg/L)		
Other:		

Nearest Downstream Public Water Supply Intake	Suez Water PA		
PWS Waters	Swatara Creek	Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	>9.0

Changes Since Last Permit Issuance: NCCW discharge was re-routed

Other Comments:

1.5 Public water supply

The nearest downstream water supply intake is located approximately 9 miles downstream from the discharge by Suez Water PA located in Hummelstown on Swatara Creek. Due to dilution and the distance, no impact is expected on the intake.

2.0 Compliance History

2.1 DMR Data for Outfall 001 (from July 1, 2018 to June 30, 2019)

Parameter	JUN-19	MAY-19	APR-19	MAR-19	FEB-19	JAN-19	DEC-18	NOV-18	OCT-18	SEP-18	AUG-18	JUL-18
Flow (MGD) Average Monthly				0.3376	0.4713	0.4146	0.464484	0.4934	0.0581			
Flow (MGD) Daily Maximum				0.5120	0.5120	0.5120	0.513000	0.5290	0.5080			
Temperature (ºF) Daily Maximum				39.1	37.6	44.0	44.5	65.6	63.4			

2.2 Effluent Violations for Outfall 001, from: August 1, 2018 To: June 30, 2019

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
Temperature	11/30/18	Daily Max	65.6	ºF	63	ºF

Discharge Monitoring Reports (DMRs) review for the facility for the last 12 months of operation presented on the table above indicate permit limits have been met most of the time. An effluent violation occurred in November 2018, which appeared to be addressed.

2.3 Summary of Inspections:

The facility has been inspected 5 times during the past permit cycle. A pollution incident occurred on 2/16/17 when a leakage from chlorine contact tank cause sludge accumulation on the ground around the tank. The leakage has been repaired and the ground was cleaned up. It is recommended that the return sludge piping is deteriorating and should be looked at for repair or replacement.

3.0 Development of Effluent Limitations

Outfall No.	001	**Design Flow (MGD)**	1
Latitude	40º 16' 21.00"	**Longitude**	-76º 37' 43.00"

Wastewater Description: Noncontact Cooling Water (NCCW)

3.1 Basis for Effluent Limitations

In general, the Clean Water Act(AWA) requires that the effluent limits for a particular pollutant be the more stringent of either technology-based limits or water quality-based limits. Technology-based limits are set according to the level of treatment that is achievable using available technology. A water quality-based effluent limit is designed to ensure that the water quality standards applicable to a waterbody are being met and may be more stringent than technology-based effluent limits.

3.1.1 Technology-Based Limitations

The following technology-based limitations apply, subject to water quality analysis and BPJ where applicable:

Pollutant	Limit (mg/l)	SBC	Federal Regulation	State Regulation
pH	6.0 – 9.0 S.U.	Min – Max	133.102(c)	95.2(1)

Weekly pH monitoring will be required in the permit.

3.2 Water Quality-Based Limitations

Streamflows for the water quality analysis were determined by correlating with the yield of USGS gauging station No. 01573560 on Swatara Creek near Hershey. The Q_{7-10} and drainage area at the gage is 67.7ft3/s and 483mi^2 respectively. The resulting yields are as follows:

Q_{7-10} = (67.7ft^3/s)/483 mi^2 = 0.14ft^3/s/ mi^2

The drainage area at discharge point taken from the previous protection report is 3.6 mi^2

The Q_{7-10} = 3.6mi^2 x 0.14 ft^3/s/mi^2 = 0.50ft^3/s.

3.3 Temperature Limitation

Effluent limitations for temperature were calculated using the Case 2 Thermal Worksheet with updated wasteflow of 1 MGD and ambient temperature. Since the discharge from the rink operation occurs from November to March, temperature limits presented in attachment B will apply for those months and report is required for the rest of the months. The limits are consistent with the existing permit. Inspection reports and DMRs indicate the facility can meet the limits. Daily flow measurement and weekly temperature monitoring will be required in the permit. In addition, the facility's thermal discharge should not increase the temperature of the stream more than 2^{0}F in one 1 hour.

4.0 Anti-backsliding

Not applicable to this permit

4.1 303d Listed Stream:

The discharge is listed on a 303d listed stream segment as impaired due to siltation and flow variability. The stream is listed as category 4c Waterbodies, this pollution type does not require a TMDL. No action is warranted at this time.

4.2 Anti-Degradation (93.4)

The effluent limits for this discharge have been developed to ensure that existing instream water uses and the level of water quality necessary to protect the existing uses are maintained and protected. No High Quality Waters are impacted by this discharge. No Exceptional Value Waters are impacted by this discharge.

4.3 Class A Wild Trout Fisheries

No Class A Wild Trout Fisheries are impacted by this discharge.

4.4 Effluent Monitoring Frequency

Monitoring frequencies are based on the nature and effect of the pollutant, as well as a determination of the minimum sampling necessary to adequately monitor the facility's performance. Permittees have the option of taking more frequent samples than are required under the permit. These samples can be used for averaging if they are conducted using EPA-approved test methods (generally found in 40 CFR 136) and if the Method Detection Limits are less than the effluent limits. The sampling location must be after the last treatment unit and prior to discharge to the receiving water. If no discharge occurs during the reporting period, "no discharge" shall be reported on the DMR.

5.0 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) (1)		Concentrations (mg/L)				Minimum (2) 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	1/day	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/week	Grab
Temperature (ºF) Dec 1 - Feb 28	XXX	XXX	XXX	XXX	45 Daily Max	XXX	1/week	I-S
Temperature (ºF) Mar 1 - 31	XXX	XXX	XXX	XXX	59 Daily Max	XXX	1/week	I-S
Temperature (ºF) Apr 1 - Oct 31	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/week	I-S
Temperature (ºF) Nov 1 - 30	XXX	XXX	XXX	XXX	63 Daily Max	XXX	1/week	I-S

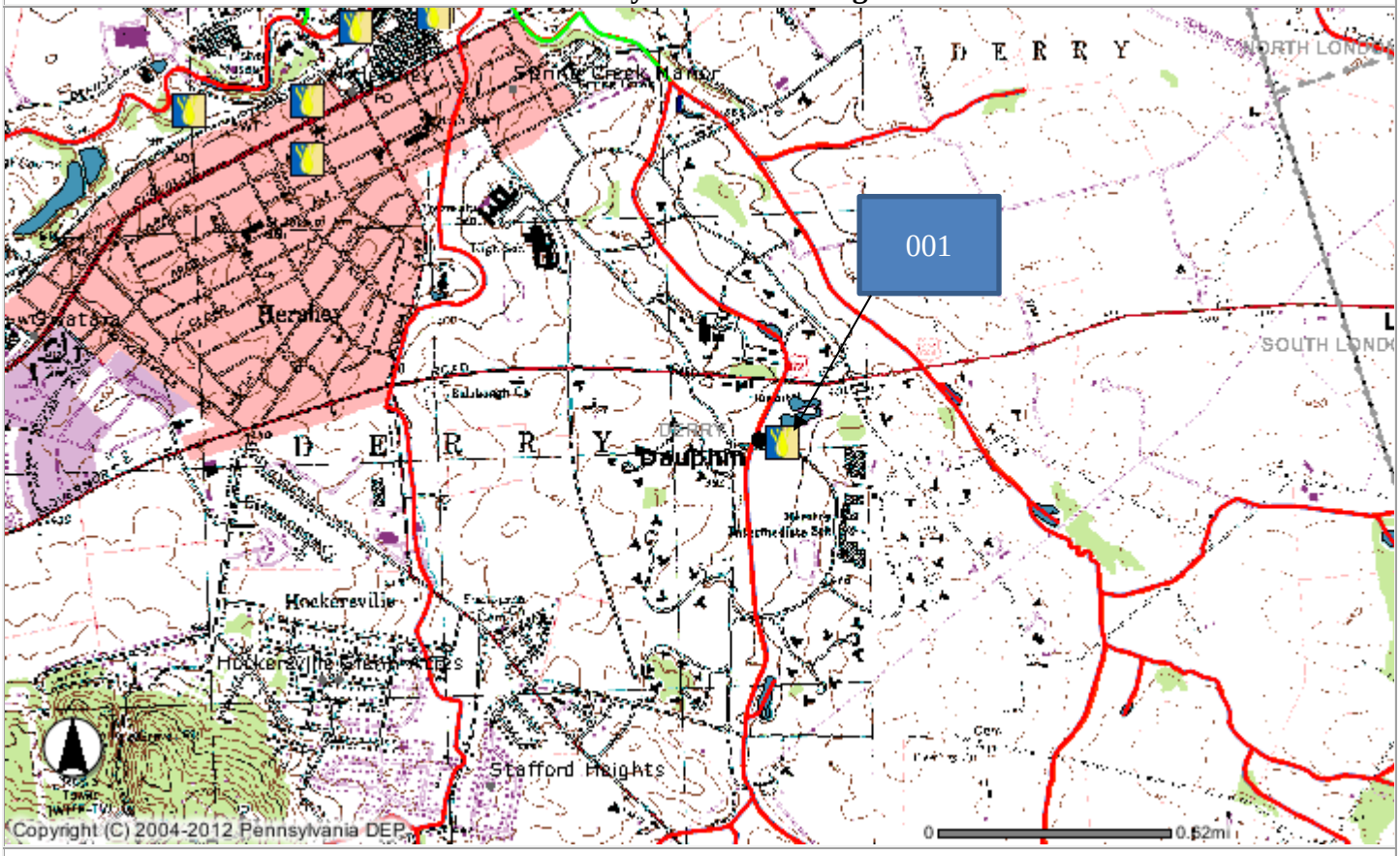
Compliance Sampling Location: Temperature monitoring at Outfall 001 and pH monitoring prior to Founders Hall Pond

6.0 Tools and References Used to Develop Permit	
☐	WQM for Windows Model (see Attachment)
☐	PENTOXSD for Windows Model (see Attachment)
☐	TRC Model Spreadsheet (see Attachment)
☒	Temperature Model Spreadsheet (see Attachment B)
☐	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
☒	Technical Guidance for the Development and Specification of Effluent Limitations, 362-0400-001, 10/97.
☐	Policy for Permitting Surface Water Diversions, 362-2000-003, 3/98.
☐	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 362-2000-008, 11/96.
☐	Technology-Based Control Requirements for Water Treatment Plant Wastes, 362-2183-003, 10/97.
☐	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 362-2183-004, 12/97.
☐	Pennsylvania CSO Policy, 385-2000-011, 9/08.
☐	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
☐	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 391-2000-002, 4/97.
☒	Determining Water Quality-Based Effluent Limits, 391-2000-003, 12/97.
☐	Implementation Guidance Design Conditions, 391-2000-006, 9/97.
☐	Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 391-2000-007, 6/2004.
☐	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 391-2000-008, 10/1997.
☐	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 391-2000-010, 3/99.
☐	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 391-2000-011, 5/2004.
☐	Implementation Guidance for Section 93.7 Ammonia Criteria, 391-2000-013, 11/97.
☐	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 391-2000-014, 4/2008.
☐	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 391-2000-015, 11/1994.
☐	Implementation Guidance for Temperature Criteria, 391-2000-017, 4/09.
☐	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 391-2000-018, 10/97.
☐	Implementation Guidance for Application of Section 93.5(e) for Potable Water Supply Protection Total Dissolved Solids, Nitrite-Nitrate, Non-Priority Pollutant Phenolics and Fluorides, 391-2000-019, 10/97.
☐	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 391-2000-021, 3/99.
☐	Implementation Guidance for the Determination and Use of Background/Ambient Water Quality in the Determination of Wasteload Allocations and NPDES Effluent Limitations for Toxic Substances, 391-2000-022, 3/1999.
☒	Design Stream Flows, 391-2000-023, 9/98.
☐	Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics, 391-2000-024, 10/98.
☐	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 391-3200-013, 6/97.
☐	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
☐	Other:
☐	Other:

7.0 Attachments

A. Topographical Map

Milton Hershey School Discharge Point



B. Temperature Calculations

Facility:	**Milton Hershey School**						
Permit Number:	PA0009288						
Stream:	UNT Spring Creek						
	WWF			**WWF**		**WWF**	
	Ambient Stream	Ambient Stream	Target Maximum	Daily		Daily	
	Temperature (ºF)	Temperature (ºF)	Stream Temp.[1]	WLA[2]		WLA[3]	at Discharge
	(Default)	(Site-specific data)	(ºF)	(Million BTUs/day)		(ºF)	Flow (MGD)
Jan 1-31	35	0	40	N/A -- Case 2		45.2	1
Feb 1-29	35	0	40	N/A -- Case 2		45.7	1
Mar 1-31	40	0	46	N/A -- Case 2		59.6	1
Apr 1-15	47	0	52	N/A -- Case 2		67.0	1
Apr 16-30	53	0	58	N/A -- Case 2		73.0	1
May 1-15	58	0	64	N/A -- Case 2		73.9	1
May 16-30	62	0	72	N/A -- Case 2		88.5	1
Jun 1-15	67	0	80	N/A -- Case 2		92.6	1
Jun 16-30	71	0	84	N/A -- Case 2		96.6	1
Jul 1-31	75	0	87	N/A -- Case 2		93.6	1
Aug 1-15	74	0	87	N/A -- Case 2		92.9	1
Aug 16-31	74	0	87	N/A -- Case 2		92.9	1
Sep 1-15	71	0	84	N/A -- Case 2		88.6	1
Sep 16-30	65	0	78	N/A -- Case 2		82.6	1
Oct 1-15	60	0	72	N/A -- Case 2		76.7	1
Oct 16-31	54	0	66	N/A -- Case 2		70.7	1
Nov 1-15	48	0	58	N/A -- Case 2		63.2	1
Nov 16-30	42	0	50	N/A -- Case 2		54.1	1
Dec 1-31	37	0	42	N/A -- Case 2		45.9	1

[1] This is the maximum of the WWF WQ criterion or the ambient temperature. The ambient temperature may be either the design (median) temperature for WWF, or the ambient stream temperature based on site-specific data entered by the user. A minimum of 1ºF above ambient stream temperature is allocated.

[2] The WLA expressed in Million BTUs/day is valid for Case 1 scenarios, and disabled for Case 2 scenarios.

[3] The WLA expressed in ºF is valid only if the limit is tied to a daily discharge flow limit (may be used for Case 1 or Case 2). WLAs greater than 110ºF are displayed as 110ºF.