pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southcentral Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0084522**
Facility Type	**Industrial**	APS ID	**898**
Major / Minor	**Minor**	Authorization ID	**1293628**

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

Applicant and Facility Information

Applicant Name	**Allentown Refrigerated Terminal**	Facility Name	**Allentown Refrigerated Terminal**
Applicant Address	125 Seneca Trail Boyertown, PA 19512-8661	Facility Address	125 Seneca Trail Boyertown, PA 19512-8661
Applicant Contact	Neil Eichelberger, President	Facility Contact	Doug Berghardt, Operations Manager (dberghardt@art-cold.com)
Applicant Phone	(610) 367-2174	Facility Phone	(610) 367-2174, x340
Client ID	44423	Site ID	271722
SIC Code	4222 (NAICS 493 per 2019 application)	Municipality	Colebrookdale Township
SIC Description	Trans. & Utilities - Refrigerated Warehousing And Storage	County	Berks
Date Application Received	October 24, 2019, and November 8, 2019	EPA Waived?	Yes
Date Application Accepted	November 8, 2019	If No, Reason	-

Purpose of Application: Renewal of industrial wastewater NPDES permit

Summary of Review

The previous NPDES permit was issued April 9, 2015. After the renewal application was received, the previous permit was administratively extended past its expiration date of April 30, 2020. Mr Doug Berghardt was contacted by phone on January 26, 2022 to find out if there were changes to the facility since the application was submitted. A water softener system has been added according to Mr. Berghardt.

The facility is a warehouse and distribution facility for refrigerated and frozen foods. The 2019 permit application described the wastewater as noncontact condensation water from the warehouse refrigeration unit. Ammonia gas is used as a coolant. Three compressors and three cooling towers cool the ammonia gas. Two of the compressors' discharges join before one flow meter and a second flow meter exists on the discharge line from a third compressor. The flows from the two meters are added together for reporting flow on their DMRs. Both non-contact cooling water lines end in a holding tank for re-cycling; the held water is used as make-up water thus lessening the amount of wastewater discharged. The non-contact cooling water and potentially floor drain wastewater collects in a grated concrete pit outside beside the building. Mr. Berghardt previously stated that there is no floor drain wastewater, that any spills would be cleaned up and not flushed down the drain. Their metal holding tank of condensate for re-cycled use would overflow to a metered discharge pipe, not to the floor.

Stormwater runoff also collects in this concrete pit. The wastewater then flows by gravity from the concrete pit through a discharge pipe to outfall 001. Storm runoff from another area of the site, the rest of the truck loading and parking area, drains to a separate stormwater catchment basin but also flows by gravity to the same discharge pipe ending at outfall 001.

Approve	Deny	Signatures	Date
x		*Bonnie J. Boylan* Bonnie J. Boylan / Environmental Engineering Specialist	February 1, 2022
x		*Maria D. Bebenek for* Daniel W. Martin, P.E. / Environmental Engineer Manager	February 4, 2022
x		*Maria D. Bebenek* Maria D. Bebenek, P.E. / Environmental Program Manager	February 4, 2022

The application included the sampling required by the application instructions. No metals sample results were therefore included. The application included separate sampling results for stormwater by itself, from a first-flush event, reported in Module 1.

The application indicated no chemical additives (such as biocides, corrosion inhibitors, or anti-scalants) are used in the wastewater but if the water softener system uses such chemical additives, the standard language added to NPDES permits for chemical additives will need to be followed. Mr. Berghardt was informed of this requirement and is reviewing their chemical lists.

The source water is an on-site well, with a water softener. There is no chlorination of the water. Sanitary wastewater generated at the site is treated with an on-site septic system. Sanitary wastewater is thus not part of this permit.

Outfall 001 discharges into an unnamed tributary (UNT) of Ironstone Creek. The UNT joins Ironstone Creek approximately 1580 feet away.

The facility has been operating since at least 1991. The existing use evaluation date for Ironstone Creek was March 21, 2006 according to the Existing Uses Table posted on DEP's website link, under Water Quality-Standards. The discharge from Allentown Refrigerated Terminals did not prevent Ironstone Creek from being categorized Cold Water Fishes (CWF) from its previous designation of Trout Stocked Fishes(TSF). Similarly, this discharge existed before the regulatory changes for waters denoted as "Trout Natural Reproduction".

Design flow:

The previous permit's design flow of 0.0069 MGD has been carried forward. The DMRs reviewed, from January 1, 2020 through December 31, 2021 did not show a maximum monthly average flow greater than 0.0069 MGD. (See attached) The limits developed using the design flow of 0.0069 MGD are considered adequately protective of the receiving water.

Note: the flow meters at this facility measure the non-contact cooling water only. The design flow of 0.0069 MGD pertains to the non-contact cooling water while the design flow for stormwater is 0, as is typical for stormwater discharges. There is no requirement to measure stormwater.

Delaware River Basin Commission:

This facility discharges to a stream within the Delaware River watershed and is thus subject to the Delaware River Basin Commission's (DRBC) requirements. A copy of the draft permit and the Fact Sheet will be forwarded to the DRBC for comment pursuant to State regulations and an interagency agreement. Any comments received from DRBC will be considered. No DRBC docket is known to exist for this facility; dockets are not typically established by DRBC for facilities discharging less than 50,000 gpd, or less than 10,000 gpd in the case of DRBC-designated Special Protection waters.

Unresolved Violations:

There are no unresolved violations for this facility per DEP's eFacts database.

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.

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	0.0069
Latitude	40° 21' 18" per last permit	Longitude	75° 39' 34" per last permit
Quad Name		Quad Code	
Wastewater Description:	Noncontact Cooling Water (NCCW), Stormwater		
Receiving Waters :	UNT Ironstone Creek (existing use CWF)	Stream Code	None
NHD Com ID	None	RMI	0.3 (for UNT)
Drainage Area	0.14	Yield (cfs/mi^2)	0.21
Q7-10 flow	0.03 cfs = 0.019 MGD (Qs:Qd = 3:1)	Q7-10 Basis	USGS PA StreamStats online
Elevation	520 feet		

Secondary Receiving Waters	Ironstone Crk (existing use CWF)	Stream Code	1658 (for Ironstone Creek)
NHD Com ID	25964980	RMI	6.9
Drainage Area	2.82	Yield (cfs/mi^2)	0.25
Q_{7-10} Flow (cfs)	0.7	Q_{7-10} Basis	USGS PA StreamStats online
Elevation (ft)	450	Slope (ft/ft)	
Watershed No.	3-D	Chapter 93 Class.	TSF
Existing Use	CWF(COLD WATER FISHES)*	Existing Use Qualifier	Coldwater Community
Exceptions to Use	-	Exceptions to Criteria	-
Assessment Status	Impaired for recreational use (assessment ID 19202, 2015)		
Cause(s) of Impairment	Pathogens		
Source(s) of Impairment	unknown		
TMDL Status	None	Name	-

Background/Ambient Data - unknown		Data Source - none
pH (SU)		
Temperature (°F)		
Hardness (mg/L)		
Other:		

Nearest Downstream Potable Water Supply Intake		Boyertown Municipal Authority, 0.475 MGD pump capacity	
PWS Waters	Ironstone Creek	Flow at Intake (cfs)	1.73
PWS RMI	Approx. 5.1	Distance from Outfall (mi)	Approx. 2 miles

Other Comments:

-Ironstone Creek is considered **'Trout Natural Reproduction'**, but not 'Class A' Wild Trout;
-Ironstone Creek flows into Manatawny Creek at RMI 3.9 which empties into the Schuylkill River at RMI 54.6.

*DEP has evaluated information indicating that the existing use of the receiving waters is different than the designated use under 25 Pa. Code § 93.9. In developing the draft NPDES permit, DEP is proposing to protect the existing use of the receiving waters: CWF. Following DEP's notice of the receipt of the application and the draft permit in the Pennsylvania Bulletin, DEP will accept written comments during the public comment period regarding DEP's tentative determination to protect the existing use**. DEP will make a final determination on existing use protection for the receiving waters as part of the final permit action.**

PREVIOUS PERMIT LIMITS, Outfall 001:

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day)		Concentrations (mg/L)				Minimum Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	1/shift	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/shift	Grab
TSS	Report	Report	XXX	30	60	75	1/week	Grab
Oil and Grease	XXX	XXX	XXX	15	XXX	30	1/week	Grab
Ammonia	Report	Report	XXX	9.1	18.2	22.8	1/week	Grab
Temperature (ºF) Jan 1 - 31	XXX	XXX	XXX	Report	96.4 Daily Max	XXX	1/shift	I-S
Temperature (ºF) Feb 1 - 28	XXX	XXX	XXX	Report	93.3 Daily Max	XXX	1/shift	I-S
Temperature (ºF) Mar 1 - 31	XXX	XXX	XXX	Report	110.0 Daily Max	XXX	1/shift	I-S
Temperature (ºF) Apr 1 - 30	XXX	XXX	XXX	Report	110.0 Daily Max	XXX	1/shift	I-S
Temperature (ºF) May 1 - 31	XXX	XXX	XXX	Report	110.0 Daily Max	XXX	1/shift	I-S
Temperature (ºF) Jun 1 - 30	XXX	XXX	XXX	Report	99.0 Daily Max	XXX	1/shift	I-S
Temperature (ºF) Jul 1 - 31	XXX	XXX	XXX	Report	78.1 Daily Max	XXX	1/shift	I-S
Temperature (ºF) Aug 1 - 31	XXX	XXX	XXX	Report	110.0 Daily Max	XXX	1/shift	I-S
Temperature (ºF) Sep 1 - 30	XXX	XXX	XXX	Report	110.0 Daily Max	XXX	1/shift	I-S
Temperature (ºF) Oct 1 - 31	XXX	XXX	XXX	Report	110.0 Daily Max	XXX	1/shift	I-S
Temperature (ºF) Nov 1 - 30	XXX	XXX	XXX	Report	99.6 Daily Max	XXX	1/shift	I-S
Temperature (ºF) Dec 1 - 31	XXX	XXX	XXX	Report	96.8 Daily Max	XXX	1/shift	I-S

Treatment Facility Summary

None.

WQM Permit No.	Issuance Date
-	-
-	-

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Industrial	None	-	No Disinfection	-

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
-	-	-	-	-

Changes Since Last Permit Issuance: None.

Compliance History

DMR Data for Outfall 001 (from January 1, 2021 to December 31, 2021)

Parameter	Dec-21	NOV-21	OCT-21	SEP-21	AUG-21	JUL-21	JUN-21	MAY-21	APR-21	MAR-21	FEB-21	JAN-21
Flow (MGD) Average Monthly	0.003078	0.00311923	0.003607	0.002960	0.002684	0.002699	0.001980	0.002399	0.003036	0.003102	0.002752	0.002757
Flow (MGD) Daily Maximum	0.008934	0.005598	0.003876	0.005281	0.004978	0.009268	0.003130	0.003806	0.004174	0.003750	0.003401	0.003943
pH (S.U.) Minimum	7.0	7.0	6.0	7.0	6.97	6.0	7.0	7.0	7.0	7.0	6.0	6.0
pH (S.U.) Instantaneous Maximum	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Temperature (ºF) Average Monthly	63.4	65.1	70.4	73.8	79.1	79.5	78.5	76.2	73.4	73.2	71.5	71.2
Temperature (ºF) Daily Maximum	74.0	74.0	77.0	81.0	83.0	84.0	84.0	79.0	79.0	78.0	77.0	75.0
TSS (lbs/day) Average Monthly	<1.01671	< 0.26270	< 0.31136	0.10645	0.19109	< 0.07015	< 0.06571	< 0.05814	< 0.37155	< 0.30100	< 0.06835	< 0.09884
TSS (lbs/day) Daily Maximum	<2.47558	< 0.46694	< 0.58367	0.1630	0.47744	< 0.08978	0.10498	< 0.07200	1.27569	1.00297	< 0.09468	0.26488
TSS (mg/L) Average Monthly	46.35	< 13.9	5.7	< 9.28	< 8.0	< 4.0	5.5	4.0	< 7.0	7.6	< 4.0	3.1
TSS (mg/L) Daily Maximum	128	38.4	7.2	15.6	12.0	< 4.0	9.5	< 4.0	16.0	14.0	< 4.0	< 4.0
Oil and Grease (mg/L) Average Monthly	<4.9	< 5.1	5.0	< 4.88	< 5.4	5.5	< 6.6	< 4.98	< 4.8	< 7.0	6.15	< 5.3
Oil and Grease (mg/L) Instantaneous Maximum	<5.3	< 5.2	< 5.2	< 5.0	6.7	6.3	11.9	5.4	< 4.9	15.5	10.6	6.2
Ammonia (lbs/day) Average Monthly	<0.29	< 0.00490	< 0.00522	0.25549	0.01722	< 0.00204	< 0.00189	< 0.00145	< 0.00332	< 0.01162	0.00547	0.00295
Ammonia (lbs/day) Daily Maximum	0.50	< 0.01550	< 0.00811	1.0132	0.03072	< 0.00292	0.00356	< 0.00180	< 0.00798	< 0.04800	< 0.00995	< 0.00663
Ammonia (mg/L) Average Monthly	0.00447	< 0.32	< 0.11	< 20.48	< 51.0	< 0.12	< 0.17	0.10	0.10	< 0.24	0.31	< 0.10
Ammonia (mg/L) Daily Maximum	<0.00803	0.85	0.13	81.1	92.5	0.16	0.35	< 0.10	< 0.10	0.67	0.50	< 0.10

Compliance History

Effluent Violations for Outfall 001, from: January 1, 2019 to December 31, 2021:

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
Temperature	7/13/2019	Daily Max	85	ºF	78.1	ºF
pH	10/31/2019	Minimum	5	s.u.	6	s.u.
pH	11/30/2019	Minimum	5.93	s.u.	6	s.u.
Temperature	7/31/2020	Daily Max	86	ºF	78.1	ºF
Temperature	07/31/2021	Daily Max	84.0	ºF	78.1	ºF
Ammonia	08/31/2021	Avg Mo	< 51.0 *	mg/L	9.1	mg/L
Ammonia	08/31/2021	Daily Max	92.5 *	mg/L	18.2	mg/L
Ammonia	09/30/2021	Avg Mo	< 20.48 *	mg/L	9.1	mg/L
Ammonia	09/30/2021	Daily Max	81.1 *	mg/L	18.2	mg/L
Total Suspended Solids	12/31/2021	Avg Mo	46.35	mg/L	30	mg/L
Total Suspended Solids	12/31/2021	Daily Max	128	mg/L	60	mg/L

*due to equipment failure including leaking evaporator coil

Summary of DEP Inspections:

8/31/2020 – No Violations. Daily effluent supplemental form should be completed and attached with each monthly eDMR. Have been reading temperature from an in-line thermometer within holding tank. Installed new condenser unit around May 2020 and producing less wastewater since. No longer have minimum pH exceedances since new water softener was installed in Spring 2020.

5/30/2017 – No Violations.

Development of Effluent Limitations

Technology-Based Effluent Limitations (TBELs):

The following technology-based limitations have been considered, subject to water quality analysis and BPJ where applicable. The below TBELs only need to be imposed when there is a Reasonable Potential that the discharge will exceed them.

Parameter	Limit (mg/l)	SBC	State Regulation	DRBC Regulation
Total Suspended Solids	100	Average Monthly		18 CFR Part 410, 3.10.4.D.
pH	6.0 – 9.0 S.U.	Instant. Min – Instant. Max	25 Pa Code Ch. 95.2(1)	
	15	Average Monthly	25 Pa Code Ch. 95.2(2)(ii)	
Oil and Grease	30	Instant. Maximum	25 Pa Code Ch. 95.2(2)(ii)	
Ammonia	20	Average Monthly		18 CFR Part 410, 4.30.5.D.
Total Dissolved Solids	2000, if existing discharges increase loading by >5000 lbs/day from August 2010 baseline unless variance granted	Average Monthly	25 Pa Code Ch. 95.10	
Total Dissolved Solids	1000 mg/l (unless not causing in-stream exceedance of the greater of 133% over background or 500 mg/l)	Average Monthly		18 CFR Part 410
Dissolved Iron	7	Daily Maximum	25 Pa Code Ch. 95.2(4)	
Temperature	110°F	Maximum		18 CFR Part 410

The draft renewal permit includes the TBEL above for **Total Suspended Solids (TSS)**, 100 mg/l as a Monthly Average, as well as 200 mg/l as an Instantaneous Maximum derived by applying a multiplier to the Monthly Average value**.**

The TSS limits in this draft permit are less stringent than in the previous permit. Previous Fact Sheets going back to 2002 did not explain why limits of 30 mg/l as a Monthly Average, 60 mg/l as a Daily Maximum, and 75 mg/l as IMAX were imposed for the discharge. These limits are a regulatory requirement for sewage discharges and would also be appropriate for biological treatment plant effluent, neither of which apply to this facility's discharge. It is likely that these limits were applied to the non-contact cooling water alone as Best Professional Judgement (BPJ) before stormwater was additionally authorized by the individual NPDES permit. The TSS limits have been carried forward for years even though stormwater was added to the NPDES permit and stormwater intermittently mingles with non-contact cooling water. Stormwater discharges often exhibit TSS levels greater than 30 mg/l. For example, the DEP's general permit for stormwater discharges, PAG-03, currently includes a 'benchmark' value of 100 mg/l for TSS. Because there will be times when the amount of non-contact cooling water will be insufficient to dilute the TSS levels in the stormwater to less than 30 mg/l, as occurred in December of 2021 at the facility, it would be inappropriate to keep the previous permit limits for TSS.

The previous permit limits for **pH and Oil and Grease** were based on the above and have been carried forward in the draft renewal permit.

The above **Ammonia** limit was not imposed because the Water Quality Based Effluent Limit (WQBEL) was more stringent.

The above State **Total Dissolved Solids (TDS)** limit, 2000 mg/l, is not applicable because the facility has not increased its TDS load by more than 5000 lbs/day since August 2010, estimated thus:

304 mg/l TDS per 2012 application x 0.0069 MGD x 8.34 = 17.5 lbs/day
804 mg/l TDS (average of 3 samples) per 2019 application x 0.0069 MGD x 8.34 = 46.3 lbs/day

Sampling results for TDS have not exceeded DRBC's effluent limit but are high enough to warrant a monitoring requirement being added to the permit. Their addition of a water softener could also cause an increase in TDS concentrations in the discharge.

The sample results in the 2019 application did not include **Dissolved Iron** or **Total Iron** because DEP's current application instructions allow small discharges of non-contact cooling water (and stormwater) to not sample for Dissolved Iron or Total Iron or other metals. The 2012 and 2007 applications, however, did include Iron sampling results which did not indicate that Iron is a "pollutant of concern" needing permit limits: Total Iron of <0.05 mg/l in the 2012 application and Total Iron of 0.06 mg/l in the 2007 application. No Dissolved or Total Iron limits are imposed.

As far as **Temperature**, the above TBEL of 110°F is applicable unless the WQBELs are more stringent. In addition to the DRBC regulations, DEP's Technical Guidance Document 391-2000-017 recommends the imposition of a 110 °F Temperature limit for public safety.

Water Quality-Based Effluent Limitations (WQBELs):

WQBELs are developed based on the following criteria, the designated and existing use of the particular receiving water, the discharge flow, physical properties of the receiving water and discharge flow, and an analysis of the reasonable potential to cause an exceedance of in-stream criteria.

Parameter	Water quality criteria (mg/l)	SBC	State Regulation	DRBC Regulation
Ammonia	Equation, coded into WQM 7.0 model	Average Monthly	25 Pa Code Ch. 93.7	
Total Dissolved Solids	500 (when could impact downstream PWS)	Average Monthly	25 Pa Code Ch. 93.7	
Total Dissolved Solids	750 (when could impact downstream PWS)	Daily Maximum	25 Pa Code Ch. 93.7	
Total Dissolved Solids	not causing in-stream exceedance of the lesser of 133% over background or 500 mg/l	Average Monthly		18 CFR Part 410
Temperature	Not causing stream temp >87°F (and/or >5°Fover daily avg stream temp outside allowed heat dissipation area, nor causing fish mortality			18 CFR Part 410, 4.30.6.B and 7.
Temperature	Not causing stream temperature to increase by more than 2°F over stream temp. in 1 hour over stream temp		25 Pa Code Ch 96.6	

The following limitations were determined through water quality modeling (output files attached):

Parameter	Limit (units)	SBC	Model
Ammonia as N	7.9 mg/l	Avg. Monthly	WQM 7.0, version 1.1
Ammonia as N	15.8 mg/l	Daily Maximum	WQM 7.0, version 1.1
Temperature	Various, °F	Daily Maximum	DEP Thermal model

Because site-specific data was not available, standard default values were used in the WQM model:

stream temperature of 20ºC
stream pH of 7 S.U.
stream NH3 concentration of 0 mg/l
stream CBOD concentration of 2 mg/l
stream DO concentration of 8.24 mg/l

A discharge temperature of 29ºC (85 ºF) was used in the WQM 7.0 model because the DMRs have shown discharges during the stream low-flow design period of July through September having an elevated temperature. All input values and results are shown on the attached WQM 7.0 model simulation pages.

Note: because the receiving stream is designated as "Trout Natural Reproduction", the WQM 7.0 model would have been re-run to ensure that Dissolved Oxygen levels remained above 8 mg/l during early life stages of salmonids (October through May) if this were a new facility. This facility is an existing discharger, however. The facility was already in existence before the State Standards changed [Pa Code Chapter 93], requiring higher DO concentrations during salmonid early life season.

The WQM 7.0 model includes **CBOD5** but that limit is not applicable for a discharge of non-contact cooling water and stormwater as these types of wastewater are not expected to have CBOD5 at concentrations of concern. (The same model is used for sewage.) There was similarly no BOD5 or CBOD5 limits in the previous permit.

The limits in the above table for **Ammonia** (NH3) are more stringent than the existing limits and were included in the draft permit. The facility's DMRs indicate that the facility can meet the new Ammonia limits without the need for a compliance schedule or the need for a less stringent limit during the cooler months when Ammonia is less toxic to fish. The previous permit also did not include different limits for warm months than for cold months. The maximum monthly average NH3 concentration from January 1, 2019 through December 31, 2021 according to the facility's DMRs was 0.014 mg/l and the Daily Maximum during the same period was 0.25 mg/l, when non-representative data from August and September 2021 were not included (high concentrations of Ammonia were reported for those months due to equipment failure which was subsequently corrected).

Because there is a **Potable Water Supply (PWS) intake** only two miles downstream, DEP's Toxics Management Spreadsheet (TMS) was also used to check that this discharge would not adversely impact the PWS. The model simulation is attached. Model input values: the Q7-10 stream flow and Drainage Area at the PWS location were taken from PA Stream Stats online; the Low-Flow Yield is calculated as Q7-10 / Drainage Area. A discharge Hardness of 150 mg/l was assumed based on sampling results in previous applications. The TMS indicates that the concentrations of **TDS** in the discharge and the TDS loading do not necessitate a permit limit in order to protect the downstream PWS, based on available data. TDS, and its constituents, is a parameter with a criteria applicable to PWS use, in Pa Code Chapter 93.

TEMPERATURE:

DEP's thermal model was used to develop the limits in this draft permit, with default values and assumptions where site-specific data was not available. The facility has been an existing discharger since before 1991. While it is preferred that actual stream Temperature data is used in the thermal model, the facility was not ever asked previously to collect site specific data. Their discharge is small and the downstream Ironstone Creek has been upgraded from CWF to TSF while they have been discharging warm non-contact cooling water. Because of the latter, the model was run to achieve TSF criteria in the UNT rather than CWF criteria.

Two thermal model simulations are attached: one for the discharge location, TSF criteria, and an estimated ambient stream temperature for July with the model recommending a July Temperature limit of 86.4 ºF; and one for the Ironstone Creek at the confluence with the UNT, CWF criteria, a Q7-10 stream flow of 0.7 cfs from PA Stream Stats online tool, and the ambient stream temperatures included in the Technical Guidance Document 391-2000-017 and the thermal model.

Based on the evaluation, the draft renewal permit carries forward the Temperature limits from the 2015 permit except for the month of July. The draft renewal permit includes a less stringent limit for the month of July: 86.4 ºF instead of the previous permit's limit of 78.1 ºF.

The DEP notes that, according to the thermal model, the facility's discharge does not interfere with CWF criteria being achieved for the downstream Ironstone Creek approximately 1580 feet from the facility's discharge (including during the month of July).

The same narrative condition is included in the Part C Conditions of the draft permit to satisfy State standards: to not cause the temperature in the stream to change by more than 2oF during any one-hour period. **Again, no in-stream monitoring has been required to demonstrate that the stream temperatures were not changing by more than 2 ºF during any one-hour period,** given the size of the discharge and the fact that it is retained in the holding tank before discharge. (DEP's Standard Operating Procedure (SOP) for New and Reissuance Industrial Waste and Industrial Stormwater allows for permit writer's discretion on this matter.)

Until 2008, the recommended Temperature limits for July according to DEP's Thermal model were not imposed in the permit. The 1997 and 2002 permits instead imposed a Temperature limit of 110 ºF for July and a narrative condition to not cause the temperature in the stream to change by more than 2oF during any one-hour period. The permits did not require that the stream temperature be monitored to demonstrate that the temperature was not being increased by more than 2 ºF during any one-hour period. (The models at the time, unfairly, only used the Q7-10 stream flow year-round; the later versions of DEP models adjusted the Q7-10 stream low flow to recognize that stream flow varies during the year.) The 1997 and 2002 permits instead allowed a Temperature limit of 110 ºF for July.

In 2007, a new version of DEP's Thermal model recommended a Temperature limit of 85 ºF in July; this limit was imposed in the 2008 permit along with the same narrative condition to not cause the temperature in the stream to change by more than 2 ºF during any one-hour period. Like the current Thermal model, it assumed ambient stream temperatures when site-specific data was not available and developed Temperature limits for a TSF receiving water rather than a CWF receiving water.

In 2015, the Temperature limits in the permit were made more stringent consistent with DEP's Thermal model, DEP Technical Guidance Document 'Implementation Guidance for Temperature Criteria' [391-2000-017] and DEP's Standard Operating Procedures, and using updated stream flows and discharge flow. Temperature limits consistent with the existing use of CWF were again not required since the facility was an existing discharger well before the existing use designation. Instead, Temperature limits were developed consistent with the designated use of TSF. Again, no in-stream monitoring was required to demonstrate that the stream temperatures were not changing by more than 2 ºF during any one-hour period, given the size of the discharge. The permit limits table specified a Statistical Base Code of 'Daily Maximum' as required by DEP's software validations.

The permit limits table specified a sampling location at the concrete pit or at the outfall 001. The permittee had been taking the measurements from the noncontact cooling water recycle tank for convenience. By collecting samples at the concrete pit, a) temperatures might be slightly lower because of air temperatures and possible mixing with stormwater, b) the actual non-contact cooling water discharged would be sampled rather than non-contact cooling water in the holding tank which could be recycled or discharged, and c) if there was no wastewater discharged on a particular day, no daily Temperature measurement would be required for the Daily Effluent Supplemental DMR form. Nonetheless, the permittee consistently had trouble meeting the July Temperature limit but met the Temperature limits for the other months:

July 2018	84 ºF	Daily Max. per DMR versus 78.1 ºF permit limit;	and 79.2 ºF Monthly Avg. per DMR
July 2019	85 ºF	Daily Max. per DMR versus 78.1 ºF permit limit;	and 78.1 ºF Monthly Avg. per DMR
July 2020	86 ºF	Daily Max. per DMR versus 78.1 ºF permit limit;	and 81.4 ºF Monthly Avg. per DMR
July 2021	84 ºF	Daily Max. per DMR versus 78.1 ºF permit limit;	and 79.5 ºF Monthly Avg. per DMR

See the attached Temperature charts showing all months. (eDMR usage for this facility began in January 2018.)

DEP's Technical Guidance document 391-2000-017, dated April 11, 2009, includes the following warning on page 8:

"…the closer the value of the temperature criterion is to the value of the ambient instream temperature, the more sensitive results are to small errors in estimating the ambient instream temperature. This vulnerability manifests primarily in CWF (Cold Water Fishes) receiving water, but is mitigated if the ratio of stream Q7-10 to discharge flow is favorable (generally, 10:1 or greater). Therefore, in CWF receiving waters, it will normally be important to secure site-specific ambient temperature data rather than rely on default vales, in order to avoid producing permit limits that either may be too conservative and burdensome to the permittee, or not protective enough to achieve water quality standards."

In this case the Qs: Qd ratio is 3:1, much less than 10:1. While the designated use of TSF is being allowed for the receiving water because the facility's discharge existed before the CWF existing use assessment, the same situation as described above occurs for TSF as CWF: there is only one degree difference in the model between the default ambient stream temperatures and the Temperature criterion during July, for both TSF and CWF.

Stormwater:

In addition to industrial wastewater, the stormwater that runs off this facility falls under the definition of "stormwater associated with industrial activity" [40 CFR 122.26(b)(14)(xi)] and therefore requires authorization under a NPDES permit.

Stormwater drains an area of the facility measuring approximately 780,000 ft^2, from trailer parking and a loading/unloading area. The applicant contends the stormwater is not exposed to raw materials or intermediate materials or other potential sources of contamination.

The renewal permit requires a Pollution Prevention and Containment (PPC) Plan, Best Management Practices (BMPs), and periodic visual inspection of the stormwater outfall, the same as the previous permit and DEP's standard requirements for stormwater discharges. Whereas the previous permit only required an annual inspection and Supplemental DMR form 3800-PM-WSFR008v be submitted to DEP, the draft permit requires semi-annual inspections and the newer Supplemental DMR form which has replaced 3800-PM-WSFR008v be submitted to DEP: Stormwater Annual Report, consistent with other stormwater dischargers. The draft permit, however, does not require first-flush sampling of only stormwater twice a year which is a requirement in many other DEP permits for stormwater-only discharges. The sampling requirements for outfall 001 for the mixed wastewater-- non-contact cooling water and stormwater-- is instead deemed appropriate. The previous permits also did not require first-flush sampling of only the stormwater portion of their discharge.

Mass Load Limits:

Mass Load Limits are not appropriate for pH, Oil and Grease, Temperature, or for stormwater discharges.

The mass load limits in the draft permit for Ammonia are based on the measured flow of non-contact cooling water. No Ammonia is expected to be in the stormwater.

A monitoring requirement for TDS mass load can be calculated from the measured flow of non-contact cooling water because TDS is a parameter of concern in the non-contact cooling water, not in the stormwater.

Because TSS is expected to be present in the stormwater portion of the discharge, no TSS mass load limits or monitoring requirement have been imposed.

Anti-Backsliding:

The TSS limits and the Temperature limit for July are less stringent in this draft renewal permit than in the previous permit. The reasons for the limits have already been discussed in the Fact Sheet. The receiving water is not impaired for TSS or for Temperature.

Other (Besides Limitations)

CHEMICAL ADDITIVES:

The standard language for Chemical Additive requirements will be included in the renewal permit in the Part C Conditions, as is typical for industrial discharger permits. Any intended "Chemical Additives" that could be in the discharge must be on DEP's Approved Chemical Additive list before being used and usage rates must not cause a concentration in the discharge greater than a calculated WQBEL. The WQBEL is derived from DEP's Toxics Management Spreadsheet (TMS) and safe effect levels from the Approved Chemical Additive list. A definition of 'Chemical Additives' is included in the Part A. II. section of the permit:

> *Chemical Additive* means a chemical product (including products of disassociation and degradation, collectively "products") introduced into a waste stream that is used for cleaning, disinfecting, or maintenance and which may be detected in effluent discharged to waters of the Commonwealth. The term generally excludes chemicals used for neutralization of waste streams, the production of goods, and treatment of wastewater.

TDS BASELINE:

In order to implement the regulations at Chapter 95.10 relevant to imposing TDS limits if increased loads trigger this requirement in the future, a TDS Baseline is being documented. The increase of TDS loads is measured against existing mass loads, described in Chapter 95.10(a)(1) as "maximum daily discharge loads of TDS…that were authorized by the Department prior to August 21, 2010". The previous NPDES permit did not require TDS monitoring but the 2012 application provided 1 sample result for TDS, 304 mg/l. The TDS baseline load has been thus estimated as follows:

304 mg/l x 0.0069 MGD x 8.34 conversion factor = 17.5 lbs/day.

CLASS A and WILD TROUT FISHERIES:

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

IMPAIRED WATERS:

The receiving water empties into an impaired stream but the impairment is for pathogens whereas this discharge is for non-contact cooling water and stormwater from an industrial site which do not typically include pathogens. This discharge is not expected to contribute to the impairment. The permit application's sampling results for Fecal Coliform support this conclusion.

ANTIDEGRADATION (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, with the exception of Temperature; the designated use criteria (TSF) have been protected for the UNT instead of the existing use criteria (CWF) given that the facility was an existing discharger before the existing use evaluation. However, the CWF existing use criteria has been protected for the Ironstone Creek, downstream of the UNT. No High Quality Waters are impacted by this discharge. No Exceptional Value Waters are impacted by this discharge.

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 as needed and BPJ. Instantaneous Maximum (IMAX) limits are generally 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.

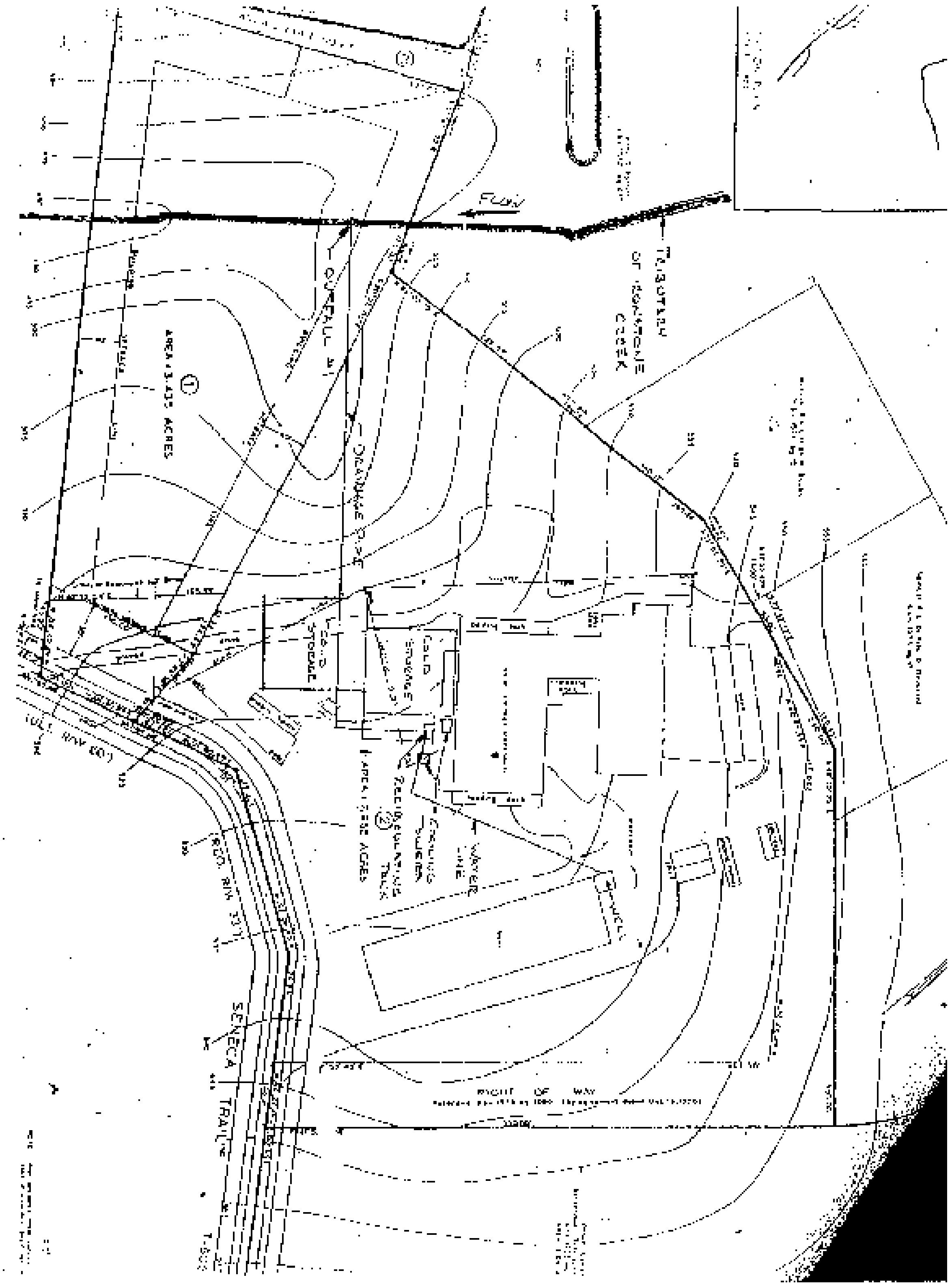
Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2)	Required
	Average Monthly	Daily Maximum	Instant. Minimum	Average Monthly	Daily Maximum	Instant. Maximum	Measurement Frequency	Sample Type
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	1/shift	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/shift	Grab
TSS	XXX	XXX	XXX	100.0	XXX	200 .0	1/week	Grab
TDS	Report	Report	XXX	Report	Report	XXX	1/month	Grab
Oil and Grease	XXX	XXX	XXX	15.0	XXX	30.0	1/week	Grab
Ammonia	0.5	0.9	XXX	7.9	15.8	19.8	1/week	Grab
Temperature (ºF) Jan 1 - 31	XXX	XXX	XXX	Report	96.4 Daily Max	XXX	1/shift	I-S
Temperature (ºF) Feb 1 - 28	XXX	XXX	XXX	Report	93.3 Daily Max	XXX	1/shift	I-S
Temperature (ºF) Mar 1 - 31	XXX	XXX	XXX	Report	110.0 Daily Max	XXX	1/shift	I-S
Temperature (ºF) Apr 1 - 30	XXX	XXX	XXX	Report	110.0 Daily Max	XXX	1/shift	I-S
Temperature (ºF) May 1 - 31	XXX	XXX	XXX	Report	110.0 Daily Max	XXX	1/shift	I-S
Temperature (ºF) Jun 1 - 30	XXX	XXX	XXX	Report	99.0 Daily Max	XXX	1/shift	I-S
Temperature (ºF) Jul 1 - 31	XXX	XXX	XXX	Report	86.4 Daily Max	XXX	1/shift	I-S
Temperature (ºF) Aug 1 - 31	XXX	XXX	XXX	Report	110.0 Daily Max	XXX	1/shift	I-S
Temperature (ºF) Sep 1 - 30	XXX	XXX	XXX	Report	110.0 Daily Max	XXX	1/shift	I-S

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	Daily Maximum	Instant. Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Temperature (ºF) Oct 1 - 31	XXX	XXX	XXX	Report	110.0 Daily Max	XXX	1/shift	I-S
Temperature (ºF) Nov 1 - 30	XXX	XXX	XXX	Report	99.6 Daily Max	XXX	1/shift	I-S
Temperature (ºF) Dec 1 - 31	XXX	XXX	XXX	Report	96.8 Daily Max	XXX	1/shift	I-S

Compliance Sampling Location: at outfall 001 or at concrete pit upstream of outfall 001

	Tools and References Used to Develop Permit
☒	WQM for Windows Model (see Attachment)
☒	Toxics Management Spreadsheet (see Attachment)
☐	TRC Model Spreadsheet (see Attachment)
☒	Temperature Model Spreadsheet (see Attachment)
☐	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.
☒	Standard Operating Procedure: Establishing Effluent Limitations for Individual Industrial Permits, 10/1/2020
☒	Standard Operating Procedure: Chemical Additives, 1/13/2015
☒	Other: DRBC Regulations 18 CFR Part 410


FLOW
TRIBUTARY OF MONOCACY CREEK
OUTFALL 001
SENECA
TRAIL
RIGHT OF WAY
WATER LINE

ONITORING	PARAMETE	LOAD_UN	LOAD_1_VA	LOAD_1_L	LOAD_1_SBC	LOAD2_VAL	LOAD2_L	LOAD_2_SE	CONC_1	CONC_1_VA	CONC_1_LI	CONC_1_SE	CONC2_VALI	CON2_LIMI	CONC_2_SBC	CONC3_VALI	CONC3_LIM	CONC_3_SE	SAMPLE_FR	SAMPLE_TYPE
1/31/2019	Flow	MGD	0.4757	Monitor	Average Mo	0.00972	Monitor	Daily Maximum											1/shift	Measured
2/28/2019	Flow	MGD	0.00416	Monitor	Average Mo	0.00924	Monitor	Daily Maximum											1/shift	Measured
3/31/2019	Flow	MGD	0.00471	Monitor	Average Mo	0.00638	Monitor	Daily Maximum											1/shift	Measured
4/30/2019	Flow	MGD	0.00358	Monitor	Average Mo	0.00675	Monitor	Daily Maximum											1/shift	Measured
5/31/2019	Flow	MGD	0.00321	Monitor	Average Mo	0.00778	Monitor	Daily Maximum											1/shift	Measured
6/30/2019	Flow	MGD	0.00313	Monitor	Average Mo	0.00923	Monitor	Daily Maximum											1/shift	Measured
7/31/2019	Flow	MGD	0.00306	Monitor	Average Mo	0.00751	Monitor	Daily Maximum											1/shift	Measured
8/31/2019	Flow	MGD	0.09101	Monitor	Average Mo	0.00818	Monitor	Daily Maximum											1/shift	Measured
9/30/2019	Flow	MGD	0.00259	Monitor	Average Mo	0.00555	Monitor	Daily Maximum											1/shift	Measured
0/31/2019	Flow	MGD	0.07846	Monitor	Average Mo	0.00526	Monitor	Daily Maximum											1/shift	Measured
1/30/2019	Flow	MGD	0.00286	Monitor	Average Mo	0.00859	Monitor	Daily Maximum											1/shift	Measured
2/31/2019	Flow	MGD	0.0042	Monitor	Average Mo	0.00968	Monitor	Daily Maximum											1/shift	Measured

3 months out of 12 months when Avg.Mo. flow exceeded permit design flow of 0.0069 MGD but look like they could be errors in reporing: Avg.Mo. Flow should not be > D. Max. flow

	MONITORING	PARAMETE	LOAD_UN	LOAD_1_VA	LOAD_1_LI	LOAD_1_SBC	LOAD2_VA	LOAD2_LI	LOAD_2_SE	CONC_	CONC_1_VA	CONC_1_LI	CONC_1_SI	CONC2_VAL	CON2_LIM	CONC_2_SBC	CONC3_VAL	CONC3_LIM	CONC_3_SI	SAMPLE_FF	SAMPLE_TYPE
1/1/2020	1/31/2020	Flow	MGD	0.00305	Monitor	Average Mo	0.00731	Monito	Daily	Maximum										1/shift	Measured
2/1/2020	2/29/2020	Flow	MGD	0.00305	Monitor	Average Mo	0.00554	Monito	Daily	Maximum										1/shift	Measured
3/1/2020	3/31/2020	Flow	MGD	0.0028	Monitor	Average Mo	0.00537	Monito	Daily	Maximum										1/shift	Measured
4/1/2020	4/30/2020	Flow	MGD	0.00389	Monitor	Average Mo	0.00548	Monito	Daily	Maximum										1/shift	Measured
5/1/2020	5/31/2020	Flow	MGD	0.00271	Monitor	Average Mo	0.00994	Monito	Daily	Maximum										1/shift	Measured
6/1/2020	6/30/2020	Flow	MGD	0.00264	Monitor	Average Mo	0.00869	Monito	Daily	Maximum										1/shift	Measured
7/1/2020	7/31/2020	Flow	MGD	0.00311	Monitor	Average Mo	0.00837	Monito	Daily	Maximum										1/shift	Measured
8/1/2020	8/31/2020	Flow	MGD	0.00292	Monitor	Average Mo	0.00851	Monito	Daily	Maximum										1/shift	Measured
9/1/2020	9/30/2020	Flow	MGD	0.00548	Monitor	Average Mo	0.00935	Monito	Daily	Maximum										1/shift	Measured
10/1/2020	10/31/2020	Flow	MGD	0.00259	Monitor	Average Mo	0.00512	Monito	Daily	Maximum										1/shift	Measured
11/1/2020	11/30/2020	Flow	MGD	0.00292	Monitor	Average Mo	0.00718	Monito	Daily	Maximum										1/shift	Measured
12/1/2020	12/31/2020	Flow	MGD	0.00221	Monitor	Average Mo	0.00252	Monito	Daily	Maximum										1/shift	Measured
1/1/2021	1/31/2021	Flow	MGD	0.00276	Monitor	Average Mo	0.00394	Monito	Daily	Maximum										1/shift	Measured
2/1/2021	2/28/2021	Flow	MGD	0.00275	Monitor	Average Mo	0.0034	Monito	Daily	Maximum										1/shift	Measured
3/1/2021	3/31/2021	Flow	MGD	0.0031	Monitor	Average Mo	0.00375	Monito	Daily	Maximum										1/shift	Measured
4/1/2021	4/30/2021	Flow	MGD	0.00304	Monitor	Average Mo	0.00417	Monito	Daily	Maximum										1/shift	Measured
5/1/2021	5/31/2021	Flow	MGD	0.0024	Monitor	Average Mo	0.00381	Monito	Daily	Maximum										1/shift	Measured
6/1/2021	6/30/2021	Flow	MGD	0.00198	Monitor	Average Mo	0.00313	Monito	Daily	Maximum										1/shift	Measured
7/1/2021	7/31/2021	Flow	MGD	0.0027	Monitor	Average Mo	0.00927	Monito	Daily	Maximum										1/shift	Measured
8/1/2021	8/31/2021	Flow	MGD	0.00268	Monitor	Average Mo	0.00498	Monito	Daily	Maximum										1/shift	Measured
9/1/2021	9/30/2021	Flow	MGD	0.00296	Monitor	Average Mo	0.00528	Monito	Daily	Maximum										1/shift	Measured
10/1/2021	10/31/2021	Flow	MGD	0.00361	Monitor	Average Mo	0.00388	Monito	Daily	Maximum										1/shift	Measured
11/1/2021	11/30/2021	Flow	MGD	0.00312	Monitor	Average Mo	0.0056	Monito	Daily	Maximum										1/shift	Measured
				0.00298	Avg		0.00585	Avg													
				0.00548	Max		0.00994	Max													

Just AFTER confl with UNT and Ironstone Creek….

StreamStats Output Report-at confl w/ UNT & Ironstone Crk					
State/Region ID	PA				
Workspace ID	PA20210910174615840000				
Latitude	40.35317				
Longitude	-75.66331				
Time	â€Ž9â€Ž/â€Ž10â€Ž/â€Ž2021â€Ž â€Ž1â€Ž:â€Ž46â€Ž:â€Ž34â€Ž â				
Basin Characteristics					
Parameter Code	Parameter Descrip	Value	Unit		
DRNAREA	Area that drains to	2.82	square miles		
BSLOPD	Mean basin slope	7.5383	degrees		
ROCKDEP	Depth to rock	5	feet		
URBAN	Percentage of basi	0.2177	percent		
Low-Flow Statistics Pa	100.0 Percent Low Flow Region 1				
Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	2.82	square mi	4.78	1150
BSLOPD	Mean Basin Slope	7.5383	degrees	1.7	6.4
ROCKDEP	Depth to Rock	5	feet	4.13	5.21
URBAN	Percent Urban	0.2177	percent	0	89
Low-Flow Statistics Flo	100.0 Percent Low Flow Region 1				
Statistic	Value	Unit			
7 Day 2 Year Low Flow	1.28	ft^3/s			
30 Day 2 Year Low Flow	1.45	ft^3/s			
7 Day 10 Year Low Flow	0.696	ft^3/s			
30 Day 10 Year Low Flo	0.814	ft^3/s			
90 Day 10 Year Low Flo	0.985	ft^3/s			
USGS Data Disclaimer:	all data	metadata	no warrar	nor on all	nor shall t
USGS Software Disclai	the USGS reserves	the software is released on condition tha			
USGS Product Names D	firm	or product names is for descriptive purpo			
Application Version: 4.6.2					
StreamStats Services Version: 1.2.22					
NSS Services Version: 2.1.2					

StreamStats Output Report-001 dischg to UNT					
State/Region	PA				
Workspace ID	PA20210910174215334000				
Latitude	40.35474				
Longitude	-75.6596				
Time	â€Ž9â€Ž/â€Ž10â€Ž/â€Ž2021â€Ž â€Ž1â€Ž:â€Ž42â€Ž:â€				
Basin Characteristics					
Parameter Co	Paramete	Value	Unit		
DRNAREA	Area that	0.14	square miles		
BSLOPD	Mean basi	6.8606	degrees		
ROCKDEP	Depth to r	5	feet		
URBAN	Percentag	2.4557	percent		
Low-Flow Sta	100.0 Percent Low Flow Region 1				
Parameter Co	Paramete	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage A	0.14	square mi	4.78	1150
BSLOPD	Mean Basi	6.8606	degrees	1.7	6.4
ROCKDEP	Depth to F	5	feet	4.13	5.21
URBAN	Percent U	2.4557	percent	0	89
Low-Flow Sta	100.0 Percent Low Flow Region 1				
Statistic	Value	Unit			
7 Day 2 Year L	0.0575	ft^3/s			
30 Day 2 Year	0.0683	ft^3/s			
7 Day 10 Year	0.0268	ft^3/s			
30 Day 10 Yea	0.0337	ft^3/s			
90 Day 10 Yea	0.0448	ft^3/s			
USGS Data Di	all data	metadata	no warrar	nor on all	nor shall t
USGS Softwar	the USGS	the software is released on condition tha			
USGS Product	firm	or product names is for descriptive purpc			
Application Version: 4.6.2					
StreamStats Services Version: 1.2.22					
NSS Services Version: 2.1.2					

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
03D	1658	IRONSTONE CREEK	0.300	520.00	0.14	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.210	0.00	0.00	0.000	0.000	0.0	0.00	0.00	20.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
A'townRefrigTer	PA0084522	0.0000	0.0000	0.0069	0.000	29.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	5.00	8.24	0.00	0.00
NH3-N	20.00	0.00	0.00	0.70

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
03D	1658	IRONSTONE CREEK	**0.000**	450.00	0.20	0.00000	0.00	☑

Stream Data

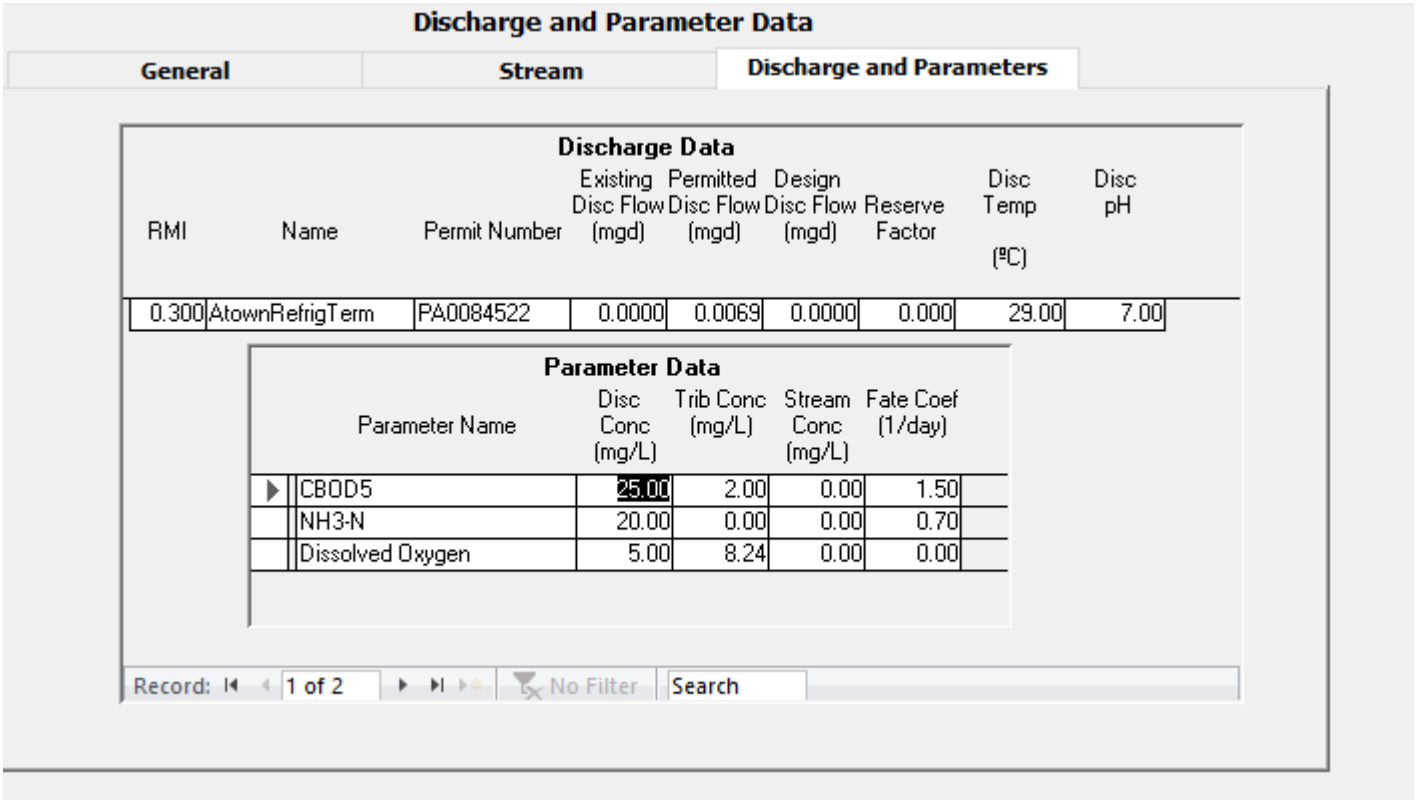
Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.210	0.00	0.00	0.000	0.000	0.0	0.00	0.00	20.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
confl Ironstone		0.0000	0.0000	0.0000	0.000	20.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	5.00	8.24	0.00	0.00
NH3-N	20.00	0.00	0.00	0.70



Discharge and Parameter Data

General | Stream | Discharge and Parameters

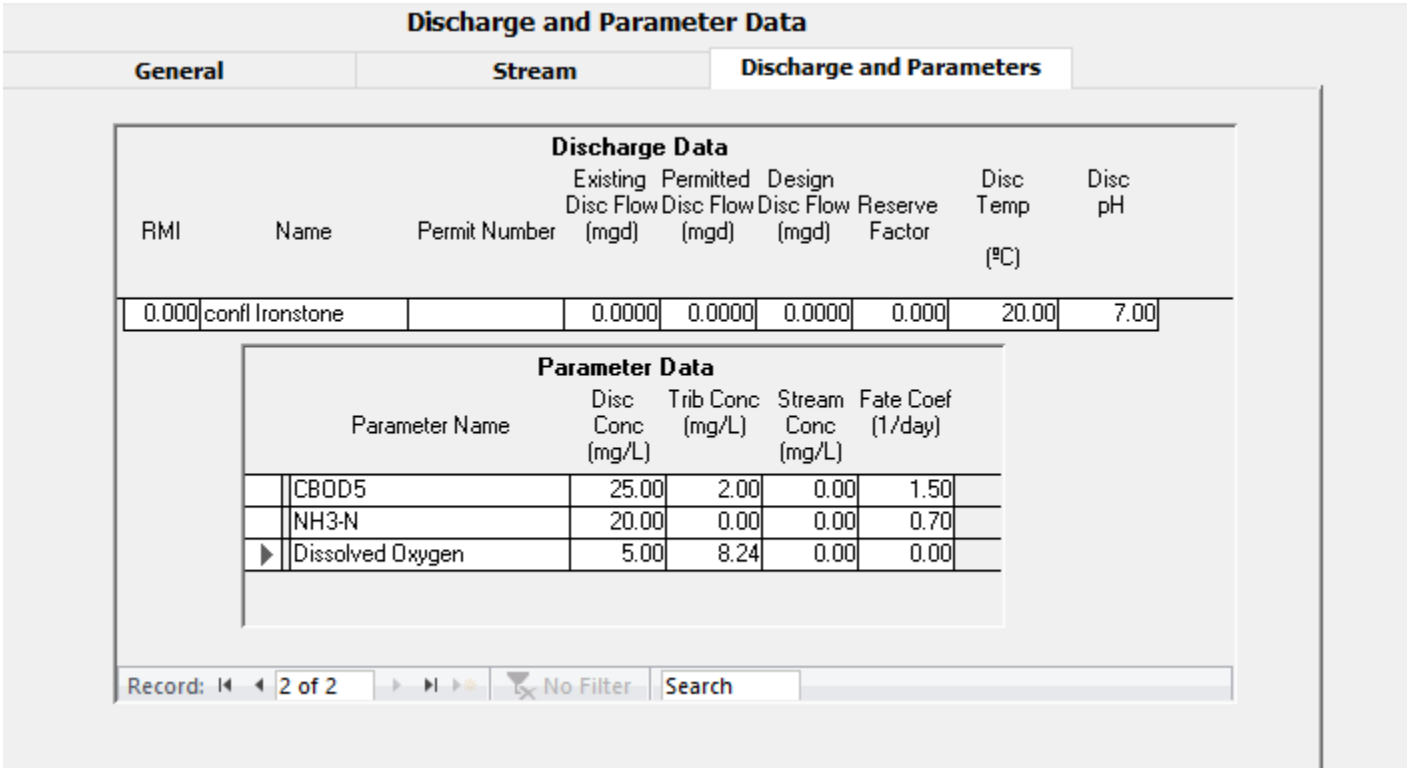
Discharge Data

RMI	Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (ºC)	Disc pH
0.300	AtownRefrigTerm	PA0084522	0.0000	0.0069	0.0000	0.000	29.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/day)
CBOD5	25.00	2.00	0.00	1.50
NH3-N	20.00	0.00	0.00	0.70
Dissolved Oxygen	5.00	8.24	0.00	0.00

Record: 1 of 2 | No Filter | Search



Discharge and Parameter Data

General | Stream | Discharge and Parameters

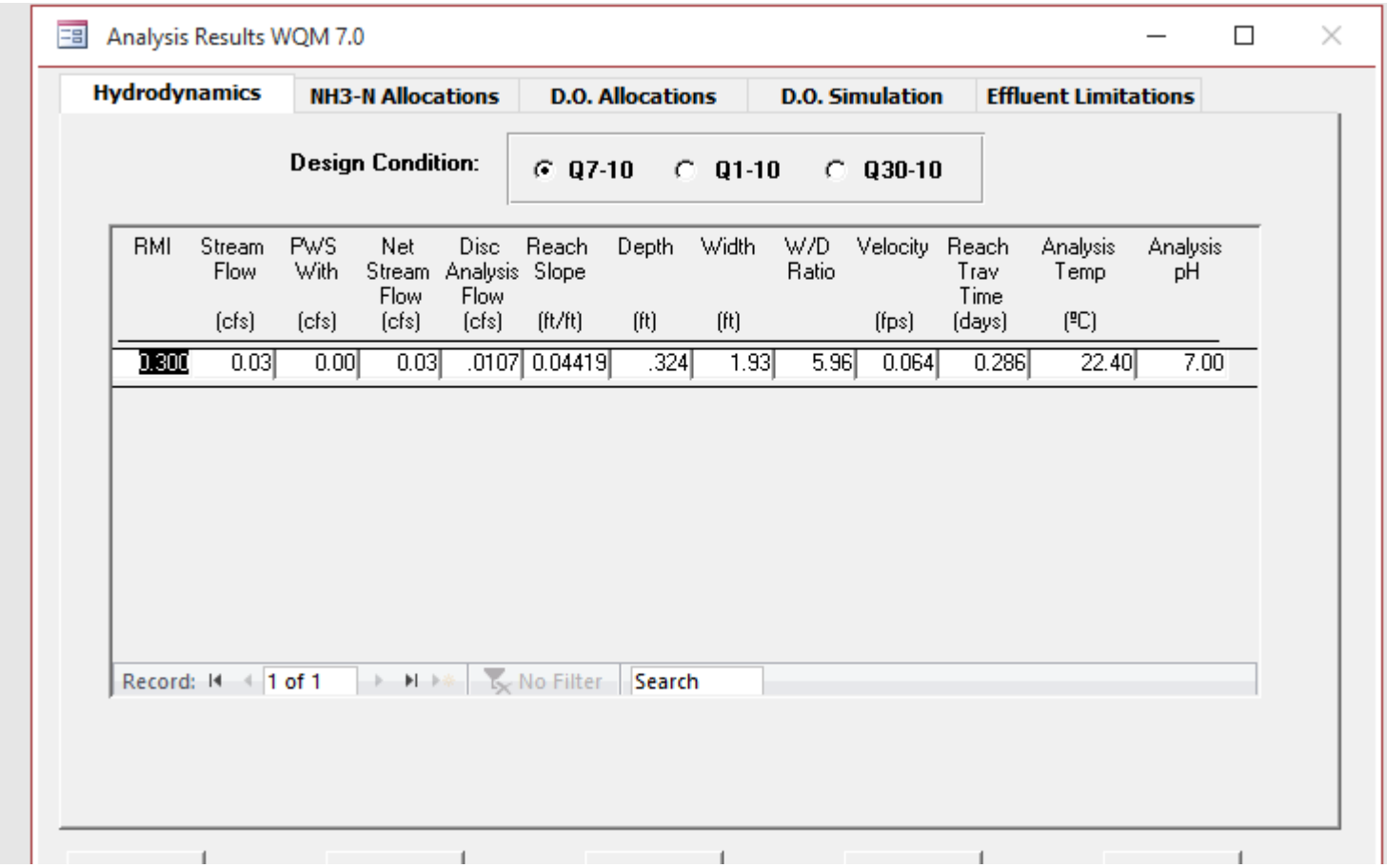
Discharge Data

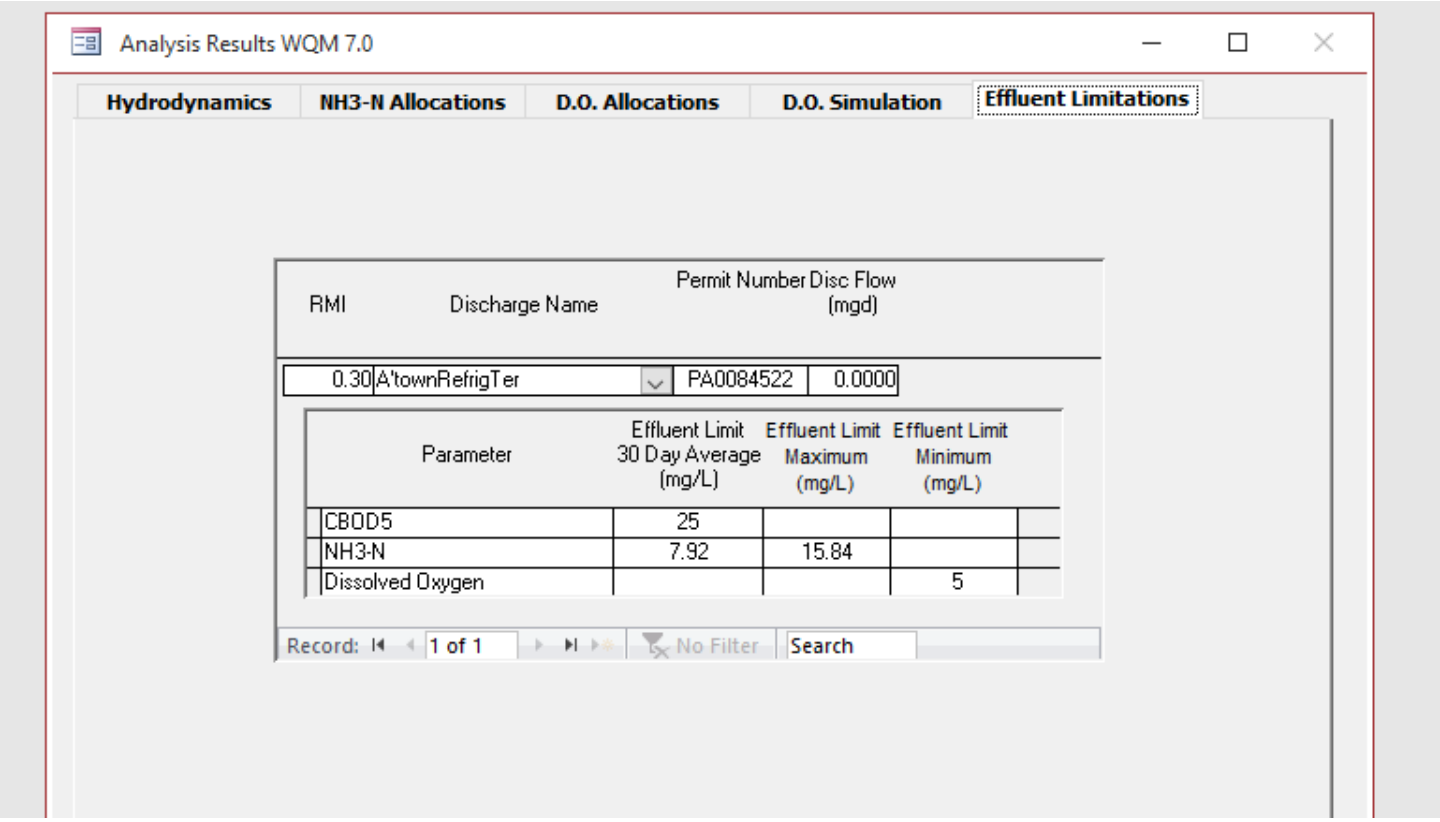
RMI	Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
0.000	confl Ironstone		0.0000	0.0000	0.0000	0.000	20.00	7.00

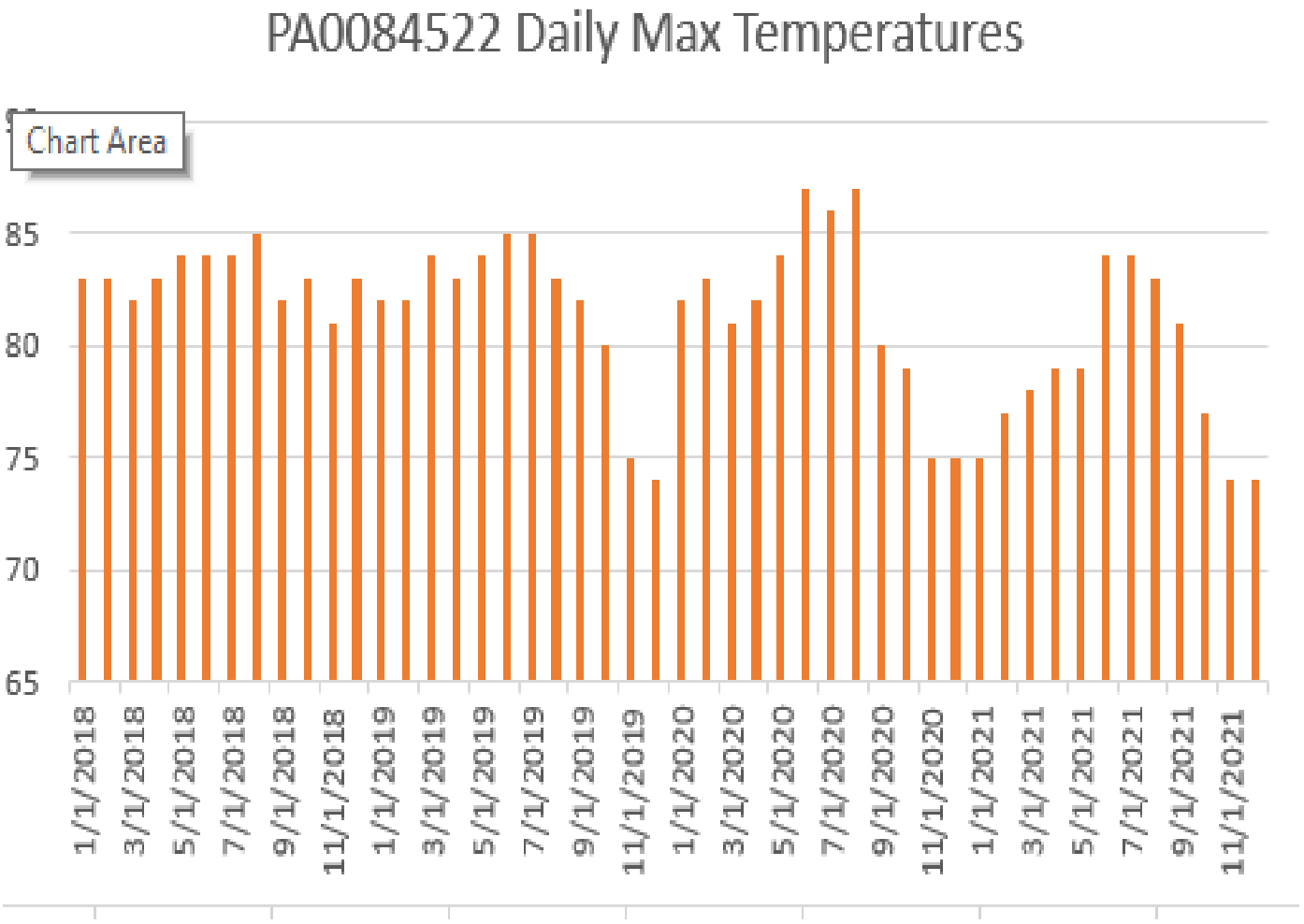
Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/day)
CBOD5	25.00	2.00	0.00	1.50
NH3-N	20.00	0.00	0.00	0.70
Dissolved Oxygen	5.00	8.24	0.00	0.00

Record: 2 of 2 | No Filter | Search


Analysis Results WQM 7.0
Hydrodynamics
NH3-N Allocations
D.O. Allocations
D.O. Simulation
Effluent Limitations
Design Condition:
Q7-10
Q1-10
Q30-10
RMI
Stream Flow (cfs)
PWS With (cfs)
Net Stream Flow (cfs)
Disc Analysis Flow (cfs)
Reach Slope (ft/ft)
Depth (ft)
Width (ft)
W/D Ratio
Velocity (fps)
Reach Trav Time (days)
Analysis Temp (ºC)
Analysis pH
0.300 0.03 0.00 0.03 .0107 0.04419 .324 1.93 5.96 0.064 0.286 22.40 7.00
Record: 1 of 1
No Filter
Search


Analysis Results WQM 7.0
Hydrodynamics
NH3-N Allocations
D.O. Allocations
D.O. Simulation
Effluent Limitations
RMI
Discharge Name
Permit Number
Disc Flow (mgd)
0.30
A'townRefrigTer
PA0084522
0.0000
Parameter
Effluent Limit 30 Day Average (mg/L)
Effluent Limit Maximum (mg/L)
Effluent Limit Minimum (mg/L)
CBOD5
25
NH3-N
7.92
15.84
Dissolved Oxygen
5
Record:
1 of 1
No Filter
Search


PA0084522 Daily Max Temperatures
Chart Area
85
80
75
70
65
1/1/2018
3/1/2018
5/1/2018
7/1/2018
9/1/2018
11/1/2018
1/1/2019
3/1/2019
5/1/2019
7/1/2019
9/1/2019
11/1/2019
1/1/2020
3/1/2020
5/1/2020
7/1/2020
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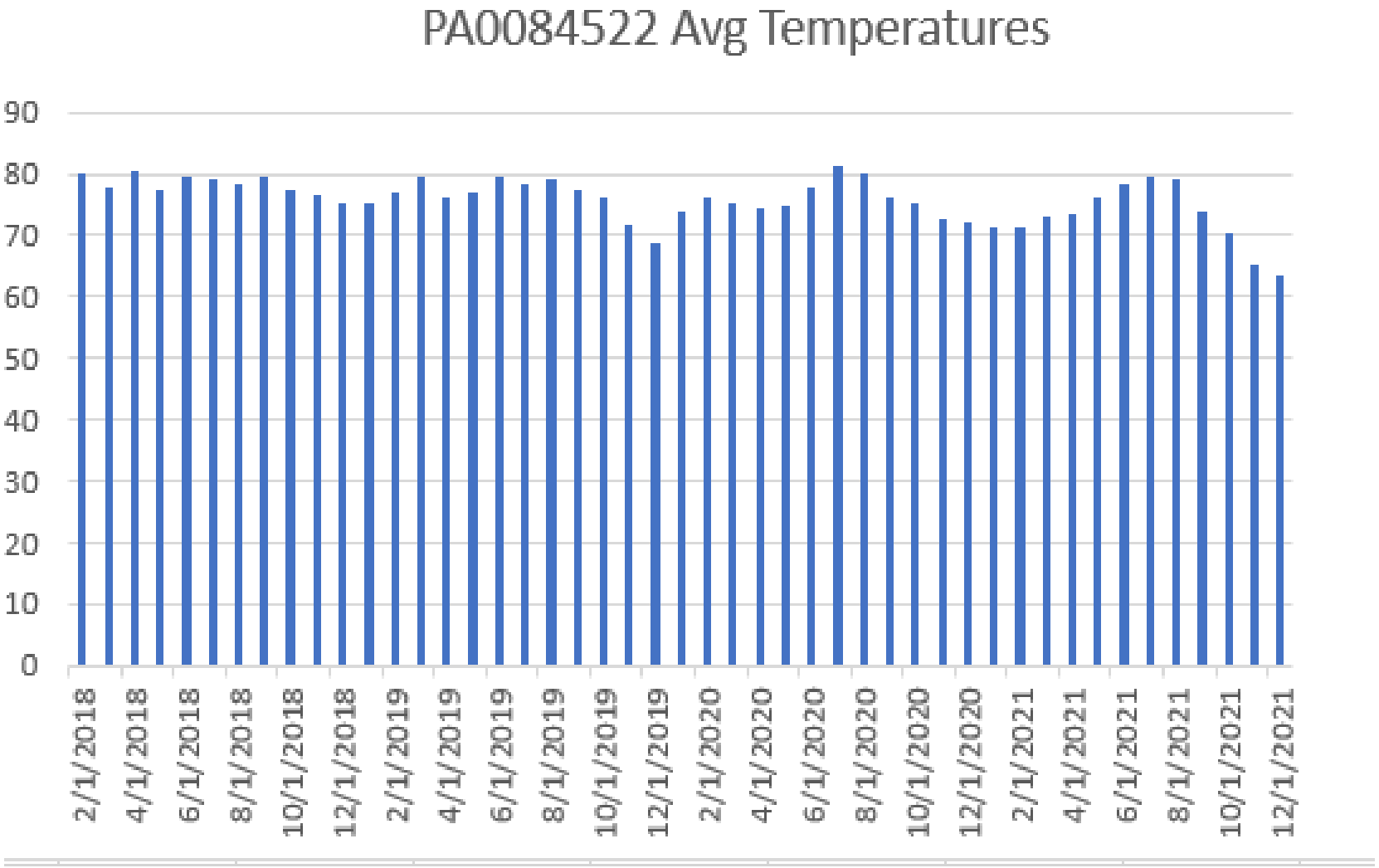
9/1/2021
11/1/2021


PA0084522 Avg Temperatures
90
80
70
60
50
40
30
20
10
0
2/1/2018
4/1/2018
6/1/2018
8/1/2018
10/1/2018
12/1/2018
2/1/2019
4/1/2019
6/1/2019
8/1/2019
10/1/2019
12/1/2019
2/1/2020
4/1/2020
6/1/2020
8/1/2020
10/1/2020
12/1/2020
2/1/2021
4/1/2021
6/1/2021
8/1/2021
10/1/2021
12/1/2021

Facility: **Allentown Refrigerated Terminals**
Permit Number: PA0084522
Stream Name: **Ironstone Creek (at confluence with UNT)**
Analyst/Engineer: Boylan
Stream Q7-10 (cfs): 0.7

	Facility Flows				Stream Flows			
	Intake (Stream) (MGD)	Intake (External) (MGD)	Consumptive Loss (MGD)	Discharge Flow (MGD)	PMF	Upstream Stream Flow (cfs)	Adjusted Stream Flow (cfs)	Downstream Stream Flow (cfs)
Jan 1-31	0	0.0069	0	0.0069	1.00	2.16	2.16	2.17
Feb 1-29	0	0.0069	0	0.0069	1.00	2.45	2.45	2.46
Mar 1-31	0	0.0069	0	0.0069	1.00	4.55	4.55	4.56
Apr 1-15	0	0.0069	0	0.0069	1.00	6.27	6.27	6.28
Apr 16-30	0	0.0069	0	0.0069	1.00	6.27	6.27	6.28
May 1-15	0	0.0069	0	0.0069	1.00	3.56	3.56	3.57
May 16-31	0	0.0069	0	0.0069	1.00	3.56	3.56	3.57
Jun 1-15	0	0.0069	0	0.0069	1.00	2.07	2.07	2.08
Jun 16-30	0	0.0069	0	0.0069	1.00	2.07	2.07	2.08
Jul 1-31	0	0.0069	0	0.0069	1.00	0.95	0.95	0.96
Aug 1-15	0	0.0069	0	0.0069	1.00	0.97	0.97	0.98
Aug 16-31	0	0.0069	0	0.0069	1.00	0.97	0.97	0.98
Sep 1-15	0	0.0069	0	0.0069	1.00	0.76	0.76	0.77
Sep 16-30	0	0.0069	0	0.0069	1.00	0.76	0.76	0.77
Oct 1-15	0	0.0069	0	0.0069	1.00	0.90	0.90	0.91
Oct 16-31	0	0.0069	0	0.0069	1.00	0.90	0.90	0.91
Nov 1-15	0	0.0069	0	0.0069	1.00	1.27	1.27	1.28
Nov 16-30	0	0.0069	0	0.0069	1.00	1.27	1.27	1.28
Dec 1-31	0	0.0069	0	0.0069	1.00	2.10	2.10	2.11

Please forward all comments to Tom Starosta at 717-787-4317, tstarosta@state.pa.us.

Version 2.0 -- 07/01/2005 Reference: Implementation Guidance for Temperature Criteria, DEP-ID: 391-2000-017

NOTE: The user can only edit fields that are blue.

NOTE: MGD x 1.547 = cfs.

Facility: **Allentown Refrigerated Terminals**
Permit Number: PA0084522
Stream: Ironstone Creek

	CWF Ambient Stream Temperature (ºF) (Default)	Ambient Stream Temperature (ºF) (Site-specific data)	Target Maximum Stream Temp.[1] (ºF)	**CWF** Daily WLA[2] (Million BTUs/day)	**CWF** Daily WLA[3] (ºF)	at Discharge Flow (MGD)	**PMF**
Jan 1-31	34	0	38	N/A -- Case 2	110.0	0.0069	1.00
Feb 1-29	35	0	38	N/A -- Case 2	110.0	0.0069	1.00
Mar 1-31	39	0	42	N/A -- Case 2	110.0	0.0069	1.00
Apr 1-15	46	0	48	N/A -- Case 2	110.0	0.0069	1.00
Apr 16-30	52	0	53	N/A -- Case 2	110.0	0.0069	1.00
May 1-15	55	0	56	N/A -- Case 2	110.0	0.0069	1.00
May 16-31	59	0	60	N/A -- Case 2	110.0	0.0069	1.00
Jun 1-15	63	0	64	N/A -- Case 2	110.0	0.0069	1.00
Jun 16-30	67	0	68	N/A -- Case 2	110.0	0.0069	1.00
Jul 1-31	71	0	72	N/A -- Case 2	110.0	0.0069	1.00
Aug 1-15	70	0	71	N/A -- Case 2	110.0	0.0069	1.00
Aug 16-31	70	0	71	N/A -- Case 2	110.0	0.0069	1.00
Sep 1-15	66	0	67	N/A -- Case 2	110.0	0.0069	1.00
Sep 16-30	60	0	61	N/A -- Case 2	110.0	0.0069	1.00
Oct 1-15	55	0	56	N/A -- Case 2	110.0	0.0069	1.00
Oct 16-31	51	0	52	N/A -- Case 2	110.0	0.0069	1.00
Nov 1-15	46	0	47	N/A -- Case 2	110.0	0.0069	1.00
Nov 16-30	40	0	42	N/A -- Case 2	110.0	0.0069	1.00
Dec 1-31	35	0	40	N/A -- Case 2	110.0	0.0069	1.00

[1] This is the maximum of the CWF WQ criterion or the ambient temperature. The ambient temperature may be either the design (median) temperature for CWF, 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.

Facility:	Allentown Refrigerated Terminals
Permit Number:	PA0084522
Stream Name:	Ironstone Creek
Analyst/Engineer:	Boylan
Stream Q7-10 (cfs):	0.0325

	Facility Flows				Stream Flows			
	Intake (Stream) (MGD)	Intake (External) (MGD)	Consumptive Loss (MGD)	Discharge Flow (MGD)	PMF	Upstream Stream Flow (cfs)	Adjusted Stream Flow (cfs)	Downstream Stream Flow (cfs)
Jan 1-31	0	0.0069	0	0.0069	1.00	0.10	0.10	0.11
Feb 1-29	0	0.0069	0	0.0069	1.00	0.11	0.11	0.12
Mar 1-31	0	0.0069	0	0.0069	1.00	0.21	0.21	0.22
Apr 1-15	0	0.0069	0	0.0069	1.00	0.29	0.29	0.30
Apr 16-30	0	0.0069	0	0.0069	1.00	0.29	0.29	0.30
May 1-15	0	0.0069	0	0.0069	1.00	0.17	0.17	0.18
May 16-31	0	0.0069	0	0.0069	1.00	0.17	0.17	0.18
Jun 1-15	0	0.0069	0	0.0069	1.00	0.10	0.10	0.11
Jun 16-30	0	0.0069	0	0.0069	1.00	0.10	0.10	0.11
Jul 1-31	0	0.0069	0	0.0069	1.00	0.04	0.04	0.05
Aug 1-15	0	0.0069	0	0.0069	1.00	0.05	0.05	0.06
Aug 16-31	0	0.0069	0	0.0069	1.00	0.05	0.05	0.06
Sep 1-15	0	0.0069	0	0.0069	1.00	0.04	0.04	0.05
Sep 16-30	0	0.0069	0	0.0069	1.00	0.04	0.04	0.05
Oct 1-15	0	0.0069	0	0.0069	1.00	0.04	0.04	0.05
Oct 16-31	0	0.0069	0	0.0069	1.00	0.04	0.04	0.05
Nov 1-15	0	0.0069	0	0.0069	1.00	0.06	0.06	0.07
Nov 16-30	0	0.0069	0	0.0069	1.00	0.06	0.06	0.07
Dec 1-31	0	0.0069	0	0.0069	1.00	0.10	0.10	0.11

Same input values as 2015 Fact Sheet except for ambient Temperature for July.

Facility:	**Allentown Refrigerated Terminals**
Permit Number:	PA0084522
Stream:	Ironstone Creek

	WWF Criteria (°F)	CWF Criteria (°F)	TSF Criteria (°F)	316 Criteria (°F)	Q7-10 Multipliers (Used in Analysis)	Q7-10 Multipliers (Default - Info Only)
Jan 1-31	40	38	40	58	3.09	3.2
Feb 1-29	40	38	40	58	3.5	3.5
Mar 1-31	46	42	46	58	6.5	7
Apr 1-15	52	48	52	58	8.96	9.3
Apr 16-30	58	52	58	58	8.96	9.3
May 1-15	64	54	64	64	5.08	5.1
May 16-31	72	58	68	72	5.08	5.1
Jun 1-15	80	60	70	80	2.96	3
Jun 16-30	84	64	72	84	2.96	3
Jul 1-31	87	66	74	87	1.36	1.7
Aug 1-15	87	66	80	87	1.39	1.4
Aug 16-31	87	66	87	87	1.39	1.4
Sep 1-15	84	64	84	84	1.08	1.1
Sep 16-30	78	60	78	78	1.08	1.1
Oct 1-15	72	54	72	72	1.28	1.2
Oct 16-31	66	50	66	66	1.28	1.2
Nov 1-15	58	46	58	58	1.81	1.6
Nov 16-30	50	42	50	58	1.81	1.6
Dec 1-31	42	40	42	58	3	2.4

Facility:	**Allentown Refrigerated Terminals**						
Permit Number:	PA0084522						
Stream:	Ironstone Creek						
	TSF Ambient Stream Temperature (°F) (Default)	Ambient Stream Temperature (°F) (Site-specific data)	Target Maximum Stream Temp.[1] (°F)	**TSF** Daily WLA[2] (Million BTUs/day)	**TSF** Daily WLA[3] (°F)	at Discharge Flow (MGD)	**PMF**
Jan 1-31	34	0	40	N/A -- Case 2	96.4	0.0069	1.00
Feb 1-29	35	0	40	N/A -- Case 2	93.3	0.0069	1.00
Mar 1-31	39	0	46	N/A -- Case 2	110.0	0.0069	1.00
Apr 1-15	46	0	52	N/A -- Case 2	110.0	0.0069	1.00
Apr 16-30	52	0	58	N/A -- Case 2	110.0	0.0069	1.00
May 1-15	56	0	64	N/A -- Case 2	110.0	0.0069	1.00
May 16-31	60	0	68	N/A -- Case 2	110.0	0.0069	1.00
Jun 1-15	65	0	70	N/A -- Case 2	110.0	0.0069	1.00
Jun 16-30	69	0	72	N/A -- Case 2	99.0	0.0069	1.00
Jul 1-31	73	71	74	N/A -- Case 2	86.4	0.0069	1.00
Aug 1-15	72	0	80	N/A -- Case 2	110.0	0.0069	1.00
Aug 16-31	70	0	87	N/A -- Case 2	110.0	0.0069	1.00
Sep 1-15	68	0	84	N/A -- Case 2	110.0	0.0069	1.00
Sep 16-30	62	0	78	N/A -- Case 2	110.0	0.0069	1.00
Oct 1-15	57	0	72	N/A -- Case 2	110.0	0.0069	1.00
Oct 16-31	53	0	66	N/A -- Case 2	110.0	0.0069	1.00
Nov 1-15	47	0	58	N/A -- Case 2	110.0	0.0069	1.00
Nov 16-30	41	0	50	N/A -- Case 2	99.6	0.0069	1.00
Dec 1-31	36	0	42	N/A -- Case 2	96.8	0.0069	1.00

Same input values as 2015 Fact Sheet except for ambient Temperature for July which was estimated as follows:

71oF = (69oF the end of June TSF ambient stream temperature + 72oF the beginning of August TSF ambient stream temperature) / 2 .

Discharge Information

Instructions | Discharge | Stream

Facility: **A'town Refrig Terminals** NPDES Permit No.: **PA0084522** Outfall No.: **001**

Evaluation Type: **Major Sewage / Industrial Waste** Wastewater Description: **nccw+stw**

Discharge Characteristics								
Design Flow (MGD)*	Hardness (mg/l)*	pH (SU)*	Partial Mix Factors (PMFs)				Complete Mix Times (min)	
			AFC	CFC	THH	CRL	Q_{7-10}	Q_h
0.0069	150	7						

					0 if left blank		*0.5 if left blank*		*0 if left blank*			*1 if left blank*	
	Discharge Pollutant	Units	Max Discharge Conc		Trib Conc	Stream Conc	Daily CV	Hourly CV	Stream CV	Fate Coeff	FOS	Criteria Mod	Chem Transl
Group 1	Total Dissolved Solids (PWS)	mg/L		992									
	Chloride (PWS)	mg/L											
	Bromide	mg/L											
	Sulfate (PWS)	mg/L											
	Fluoride (PWS)	mg/L											
	Total Aluminum	µg/L											

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.3, March 2021

Stream / Surface Water Information

A'town Refrig Terminals, NPDES Permit No. PA0084522, Outfall 001

Instructions | Discharge | *Stream*

Receiving Surface Water Name: **Ironstone Creek**

No. Reaches to Model: **1**

- (●) Statewide Criteria
- ( ) Great Lakes Criteria
- ( ) ORSANCO Criteria

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi^2)*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	001658	7.2	520	0.18			Yes
End of Reach 1	001658	5.1	365	6.52		0.475	Yes

$Q_{7\text{-}10}$

Location	RMI	LFY (cfs/mi^2)*	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness*	pH*	Hardness	pH
Point of Discharge	7.2	0.27										100	7		
End of Reach 1	5.1	0.27													

Q_h

Location	RMI	LFY (cfs/mi^2)	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness	pH	Hardness	pH
Point of Discharge	7.2														
End of Reach 1	5.1														

Model Results

A'town Refrig Terminals, NPDES Permit No. PA0084522, Outfall 001

Instructions | Results | RETURN TO INPUTS | SAVE AS PDF | PRINT | (●) All ( ) Inputs ( ) Results ( ) Limits

☐ ***Hydrodynamics***

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 0.263 PMF: 1 Analysis Hardness (mg/l): 109 Analysis pH: 7.00

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	

☑ ***CFC*** CCT (min): 0.263 PMF: 1 Analysis Hardness (mg/l): 109 Analysis pH: 7.00

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	

☑ ***THH*** CCT (min): 0.263 THH PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A PWS PMF: 1

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	500,000	500,000	82,959,740	WQC applied at RMI 5.1 with a design stream flow of 1.7604 cfs

☑ ***CRL*** CCT (min): 0.088 PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	

☑ ***Recommended WQBELs & Monitoring Requirements***

☑ ***Recommended WQBELs & Monitoring Requirements***

No. Samples/Month: 4

Mass Limits	*Concentration Limits*

Model Results 2/1/2022 Page 5

Pollutants	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units	Governing WQBEL	WQBEL Basis	Comments

☑ ***Other Pollutants without Limits or Monitoring***

The following pollutants do not require effluent limits or monitoring based on water quality because reasonable potential to exceed water quality criteria was not determined and the discharge concentration was less than thresholds for monitoring, or the pollutant was not detected and a sufficiently sensitive analytical method was used (e.g., <= Target QL).

Pollutants	Governing WQBEL	Units	Comments
Total Dissolved Solids (PWS)	82,960	mg/L	Discharge Conc ≤ 10% WQBEL

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