

Application Type	<u>Renewal</u>	<b>NPDES PERMIT FACT SHEET INDIVIDUAL SEWAGE</b>	Application No.	<u>PA0030406</u>
Facility Type	<u>Non-Municipal</u>		APS ID	<u>914413</u>
Major / Minor	<u>Minor</u>		Authorization ID	<u>1389423</u>

**Applicant and Facility Information**

Applicant Name	<u>PA Department of Correctional Laurel Highlands State Correctional Institution</u>	Facility Name	<u>SCI Laurel Highlands STP</u>
Applicant Address	<u>5706 Glades Pike PO Box 631 Somerset, PA 15501-8302</u>	Facility Address	<u>5706 Glades Pike PO Box 631 Somerset, PA 15501-0631</u>
Applicant Contact	<u>Melissa Hainsworth</u>	Facility Contact	<u>David Ponczek</u>
Applicant Phone	<u>(814) 445-6501</u>	Facility Phone	<u>(814) 445-6501</u>
Client ID	<u>132681</u>	Site ID	<u>241506</u>
Ch 94 Load Status	<u>Not Overloaded</u>	Municipality	<u>Somerset Township</u>
Connection Status	<u>No Limitations</u>	County	<u>Somerset</u>
Date Application Received	<u>March 17, 2022</u>	EPA Waived?	<u>NO</u>
Date Application Accepted	<u>March 24, 2022</u>	If No, Reason	<u>Discharge to a TMDL waters</u>
Purpose of Application	<u>NPDES Permit Renewal for Discharge of Treated Sewage Effluent.</u>		

**Summary of Review**

The State Correctional Institution (SCI) at Laurel Highlands has applied for a renewal of the NPDES Permit PA0030406, which was previously issued on December 8, 2017, effective on January 1<sup>st</sup> 2018 and it expired on December 31, 2022.

The design discharge flow rate is 0.50 MGD. The discharge is to an unnamed tributary of East Branch Coxes Creek which is classified as Trout Stock Fishery per Chapter 93 Designated Uses.

WQM permit no. 5606403 was issued on September 2, 1983 and approved the construction of the treatment facility consists of grit removal, screening, three Imhoff tanks to provide settling, a rotating trickling filter, a clarifier, two parallel SBR units, effluent equalization, and ultraviolet disinfection.

Mostoller Landfill Leachate

The SCI at Laurel Highlands is responsible to treat landfill leachate from WSI – Mostoller Landfill, Inc. operated by Waste Management. The anticipated volume of leachate to be treated is up to 0.05 MGD. Per Operations inspection reports, this facility is also receiving flow from the prison facility, and SMA (Business Park/Community College). This facility has EPA waiver for pretreatment.

Approve	Deny	Signatures	Date
X		 Hazim Aldalli / Environmental Engineering Specialist	March 14, 2024
x		 Mahbuba Iasmin, Ph.D., P.E. / Environmental Engineering Manager	March 29, 2024

**Summary of Review**

On February 6, 2008 Civil & Environmental Consultants Inc. (the Mostoller Landfill, Inc engineer) sent a memorandum seeking DEP approval for treating a landfill leachate within SCI Laurel Highlands STP, which was approved on March 5, 2008.

The compliance report (see page 6) provided by Operations on March 2022 contains a detailed history of effluent limits, and operational violations. As a summary of the past violations on effluent limitations, the table below shows the parameters and number of exceedances for each parameter during March 2017 – March 2022.

Parameter	No. of Exceedances
Ammonia-Nitrogen	104
Fecal Coliform	20
TSS	17
CBOD <sub>5</sub>	4
Total Thallium	25
pH	8
a-Terpineol	4
Benzoic Acid	6
p-Cresol	4
Phenol	4
Dissolved Oxygen	1
Total Copper	2

DEP was monitoring the progress of the newly developed pilot study (an applied research trying to improve leachate quality by reduce Ammonia pollution) funded by Waste Management. This update came into effect starting July 2022. The reviewed eDMRs after July 2022 showed an encouraging trend for the facility towards compliance limits-wise. (See Appendix F).

Point of First Use

The facility’s Operator informed DEP through an email on April 21, 2022 that the new coordinates for the facility’s Outfall no. 001 is not what’s been listed in the renewal application. Mr. Kubek gave a detailed description of the effluent receiving ditch.

Based on the new information provided above, DEP performed a Point of First Use assessment on August 15, 2022 to evaluate the new outfall location and determine the point of first use within the permitted receiving water. During the site visit, Outfall 001 was discharging to an earth ditch (Undocumented stream to UNT 39029 of East Branch Coxes Creek) has running water which found to be a sanitary sewage discharge from the residents upstream. There is approx. 800 ft for the Outfall 001 discharge to travel through the ditch to meet the tributary (UNT 39029). The earth ditch appears to convey some of the other neighboring discharges as well. (See appendix A).

Per the stream assessment report mentioned above, the Undocumented and Unnamed stream to UNT 39029 of East Branch Coxes Creek, had zero taxa found in it; therefore this stream considered not supporting aquatic life. Six taxon were found in UNT 39029 of East Branch Coxes Creek with three of them being long lived; that makes UNT 39029 of East Branch Coxes Creek the point of first use. Most of the worms that were found were indicative of a sewage discharge.

Significant Industrial User

On December 1<sup>st</sup>, 2022, DEP sent the applicant a request for sampling based on DEP- SOP 3800-PM-BCW0342a-Rev. 8/2021, Page7 to serve DEP’s analysis tool the Toxic Management Spreadsheet (TMS) that succeed the late tool PENTOXSD. Also, DEP requested to indicate WSI – Mostoller Landfill, Inc. as a Significant Industrial User (SIU) within the renewal application; the application need to be revised per DEP- SOP 3800-PM-BCW0342a-Rev. 8/2021.

On March 13, 2023, the applicant sent a revised application including the required influent & effluent Groups sampling. The data was used to generate new WQBELs using DEP’s TMS.

### Summary of Review

#### EPA Pretreatment Program

Per 40 CFR 403.8.a, "The Regional Administrator or Director may require that a POTW with a design flow of 5 MGD or less develop a POTW Pretreatment Program if he or she finds that the nature or volume of the industrial influent, treatment process upsets, violations of POTW effluent limitations, contamination of municipal sludge, or other circumstances warrant in order to prevent interference with the POTW or Pass Through." The pretreatment program is another compliance program, which is run by EPA, can help within the effort of having this sewage treatment facility back in compliance with the NPDES requirements. SCI Laurel Highlands does not have an EPA approved pretreatment program. However, their Industrial User, WSI – Mostoller Landfill is subject to pretreatment standards per 40 CFR [403.12\(b\)](#) and is required to submit a baseline monitoring report (BMR) and semi-annual monitoring reports (if found to be categorical). A notification will be added to the final permit cover letter to make SCI Laurel Highlands aware of such requirements of its industrial user.

#### Receipt of Residual Waste

The previous permit under Part C.III obligates the permittee to "document each load of residual waste (including but not limited to wastewater from oil and gas wells, food processing waste, and landfill leachate) received for processing at the treatment facility. Upon receipt, the permittee shall record the information required for the Residual Waste Supplemental DMR (Form No. 3800-FM-BCW0450) and the residual waste transporter operational record pursuant to 25 Pa. Code § 299.219". No information was provided related to this requirement. This form will be included again within this renewal permit package.

#### Anti-Backsliding

No effluent limits have been relaxed compared to the limits imposed during the last permit cycle.

DEP requested to provide new contact information for the site information section under the General Information Form 1300-PM-BIT0001.

The application stated that there were no changes to the facility conditions regarding discharge, receiving stream, or treatment technology, also not foreseen for the next five years, thus Act 537 planning approval was not needed.

The applicant provides proof of Act 14, P.L. 834 compliance with the February 14, 2022 letters and no comments were received.

Sludge use and disposal description and location(s): Off site, as there is no treatment nor sludge been applied or disposed on site.

#### 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.	<u>001</u>	Design Flow (MGD)	<u>0.50</u>
Latitude	<u>40° 0' 36.23"</u>	Longitude	<u>-79° 2' 20.97"</u>
Quad Name	<u>Somerset</u>	Quad Code	<u>40079A1</u>
Wastewater Description: <u>Sewage Effluent</u>			
Receiving Waters	<u>Unnamed Tributary to East Branch Coxes Creek</u>	Stream Code	<u>39029</u>
NHD Com ID	<u>69915955</u>	RMI	<u>0.72</u>
Drainage Area	<u>0.64</u>	Yield (cfs/mi <sup>2</sup> )	<u>0.011</u>
Q <sub>7-10</sub> Flow (cfs)	<u>0.00691</u>	Q <sub>7-10</sub> Basis	<u>USGS StreamStats</u>
Elevation (ft)	<u>2350</u>	Slope (ft/ft)	<u>0.0108</u>
Watershed No.	<u>19-F</u>	Chapter 93 Class.	<u>TSF</u>
Existing Use	<u></u>	Existing Use Qualifier	<u></u>
Exceptions to Use	<u>None.</u>	Exceptions to Criteria	<u>None.</u>
Assessment Status	<u>Impaired</u>		
Cause(s) of Impairment	<u>Siltation</u>		
Source(s) of Impairment	<u>Highway/Road/Bridge Runoff</u>		
TMDL Status	<u>Final</u>	Name	<u>COXES CREEK WATERSHED TMDL</u>
Background/Ambient Data		Data Source	
pH (SU)	<u></u>		<u></u>
Temperature (°F)	<u></u>		<u></u>
Hardness (mg/L)	<u></u>		<u></u>
Other:	<u></u>		<u></u>
Nearest Downstream Public Water Supply Intake	<u>None.</u>		
PWS Waters	<u></u>	Flow at Intake (cfs)	<u></u>
PWS RMI	<u></u>	Distance from Outfall (mi)	<u>Up to State border.</u>

Changes Since Last Permit Issuance:

- The outfall location has changed from 40° 6' 19.73", -79° 2' 27.12" to 40° 0' 36.23", -79° 2' 20.97". Receiving water was changed due to the Point of First Use assessment.
- Q<sub>7-10</sub> flow, elevation, drainage area, and low flow yield were all updated to match USGS Stream Stats new data (see Appendix E).
- DEP updated its WQM 7.0 criteria for Ammonia-Nitrogen (NH<sub>3</sub>-N) in 2019. Limits and conditions of this permit needed to be redeveloped to an adequate level to protect water quality.
- *E. Coli* monitoring requirements will be introduced to this renewal per DEP SOP No. BCW-PMT-033 revised February 5, 2024.

Other Comments: None.

Treatment Facility Summary				
<b>Treatment Facility Name:</b> SCI Laurel Highlands STP				
<b>WQM Permit No.</b>		<b>Issuance Date</b>		
5606403 A-2		June 12, 2008		
5606403 A-1		June 5, 2007		
5606403		September 2, 1983		
<b>Waste Type</b>	<b>Degree of Treatment</b>	<b>Process Type</b>	<b>Disinfection</b>	<b>Avg Annual Flow (MGD)</b>
Sewage	Secondary	Trickling Filter	UV	0.22
<b>Hydraulic Capacity (MGD)</b>	<b>Organic Capacity (lbs/day)</b>	<b>Load Status</b>	<b>Biosolids Treatment</b>	<b>Biosolids Use/Disposal</b>
0.5	2168	Not Overloaded	None-Off Site	Landfill

Changes Since Last Permit Issuance: None.

Other Comments: None.

**Compliance History**

**Summary of Inspections:**

- Last inspection report dated on January 19, 2023 includes UV system updates within the rebuilt of both UV banks, also the report stated that both banks are actively working (online).
- Inspection report dated on May 6, 2021 indicated that the plant trickling filter is off with no explanation, an older inspection (dated on December 20, 2018) mentioned that the operator is bypassing the filter and using it on “high flow events”. Per eMAP the facility is located next to the FEMA designated floodplains, which will impose high threats to the facility during wet weather. Part C-9 “High Flow Management Plan” will be included in this renewal permit.

**Operations Compliance Check Summary Report**

**Facility:** SCI Laurel Highlands STP

**NPDES Permit No.:** PA0030406

**Compliance Review Period:** 3/2017 – 3/2022

**Inspection Summary:**

INSP ID	INSPECTED DATE	INSP TYPE	AGENCY	INSPECTION RESULT DESC
3313936	01/12/2022	Routine/Partial Inspection	PA Dept of Environmental Protection	No Violations Noted
<a href="#">3195453</a>	05/06/2021	Compliance Evaluation	PA Dept of Environmental Protection	No Violations Noted
<a href="#">3201128</a>	05/06/2021	Compliance Evaluation	PA Dept of Environmental Protection	Violation(s) Noted
<a href="#">3232803</a>	05/06/2021	Compliance Evaluation	PA Dept of Environmental Protection	No Violations Noted
<a href="#">3000612</a>	01/31/2020	Routine/Partial Inspection	PA Dept of Environmental Protection	No Violations Noted
<a href="#">2839328</a>	12/20/2018	Routine/Partial Inspection	PA Dept of Environmental Protection	No Violations Noted
<a href="#">2600670</a>	03/07/2017	Compliance Evaluation	PA Dept of Environmental Protection	No Violations Noted

**Violation Summary:**

VIOL ID	VIOLATION DATE	VIOLATION TYPE	VIOLATION TYPE DESC	RESOLVED DATE
919397	05/06/2021	92A.44	NPDES - Violation of effluent limits in Part A of permit	03/30/2022

**Open Violations by Client ID:**

No open violations for Client ID 132681 PA DEPT OF CORR LAUREL HIGHLANDS STATE CORR INST

**Enforcement Summary:**

No enforcements found

**DMR Violation Summary:**

MONITORING END DATE	OUTFALL	PARAMETER	STATISTICAL BASE CODE	PERMIT VALUE	SAMPLE VALUE	UNIT OF MEASURE
2/28/2022	1	Thallium, Total	Average Monthly	0.006	0.007	mg/L
2/28/2022	1	Thallium, Total	Daily Maximum	0.009	0.013	mg/L
2/28/2022	1	Total Suspended Solids	Weekly Average	45	49	mg/L
1/31/2022	1	Thallium, Total	Average Monthly	0.006	0.007	mg/L
1/31/2022	1	Thallium, Total	Daily Maximum	0.009	0.012	mg/L
11/30/2021	1	Ammonia- Nitrogen	Weekly Average	4.5	24.1	mg/L
11/30/2021	1	Ammonia- Nitrogen	Weekly Average	18.8	33.4	lbs/day
11/30/2021	1	Ammonia- Nitrogen	Average Monthly	3	6.5	mg/L
11/30/2021	1	Thallium, Total	Average Monthly	0.006	0.01	mg/L
11/30/2021	1	Thallium, Total	Daily Maximum	0.009	0.012	mg/L
10/31/2021	1	Ammonia- Nitrogen	Average Monthly	2	14.3	mg/L
10/31/2021	1	Ammonia- Nitrogen	Weekly Average	3	21.8	mg/L
10/31/2021	1	Ammonia- Nitrogen	Average Monthly	8.3	31	lbs/day
10/31/2021	1	Ammonia- Nitrogen	Weekly Average	12.5	51.7	lbs/day
10/31/2021	1	Copper, Total	Average Monthly	0.04	0.05	mg/L
10/31/2021	1	Fecal Coliform	Instantaneous Maximum	10000	14210	No./100 ml
10/31/2021	1	pH	Minimum	6	5.9	S.U.
10/31/2021	1	Thallium, Total	Average Monthly	0.006	0.012	mg/L
10/31/2021	1	Thallium, Total	Daily Maximum	0.009	0.012	mg/L

10/31/2021	1	Total Suspended Solids	Weekly Average	187.8	237.9	lbs/day
10/31/2021	1	Total Suspended Solids	Average Monthly	30	43	mg/L
10/31/2021	1	Total Suspended Solids	Weekly Average	45	92	mg/L
9/30/2021	1	Ammonia-Nitrogen	Weekly Average	3	15.9	mg/L
9/30/2021	1	Ammonia-Nitrogen	Average Monthly	2	4.5	mg/L
9/30/2021	1	Ammonia-Nitrogen	Weekly Average	12.5	40.4	lbs/day
9/30/2021	1	Ammonia-Nitrogen	Average Monthly	8.3	9.7	lbs/day
9/30/2021	1	a-Terpineol	Average Monthly	0.016	0.028	mg/L
9/30/2021	1	a-Terpineol	Daily Maximum	0.033	0.05	mg/L
9/30/2021	1	Benzoic Acid	Average Monthly	0.071	0.275	mg/L
9/30/2021	1	Benzoic Acid	Daily Maximum	0.12	0.5	mg/L
9/30/2021	1	Fecal Coliform	Geometric Mean	200	283	No./100 ml
9/30/2021	1	p-Cresol	Average Monthly	0.014	0.028	mg/L
9/30/2021	1	p-Cresol	Daily Maximum	0.025	0.05	mg/L
9/30/2021	1	pH	Minimum	6	5.7	S.U.
9/30/2021	1	Phenol	Average Monthly	0.015	0.028	mg/L
9/30/2021	1	Phenol	Daily Maximum	0.026	0.05	mg/L
7/31/2021	1	Ammonia-Nitrogen	Weekly Average	3	4.7	mg/L
7/31/2021	1	Fecal Coliform	Geometric Mean	200	1311	No./100 ml
7/31/2021	1	pH	Minimum	6	5.7	S.U.
7/31/2021	1	Thallium, Total	Average Monthly	0.006	0.007	mg/L
7/31/2021	1	Thallium, Total	Daily Maximum	0.009	0.012	mg/L
6/30/2021	1	Ammonia-Nitrogen	Weekly Average	12.5	195	lbs/day

6/30/2021	1	Ammonia-Nitrogen	Average Monthly	2	32.1	mg/L
6/30/2021	1	Ammonia-Nitrogen	Average Monthly	8.3	67.1	lbs/day
6/30/2021	1	Ammonia-Nitrogen	Weekly Average	3	79.5	mg/L
6/30/2021	1	Dissolved Oxygen	Minimum	5	3.9	mg/L
6/30/2021	1	Fecal Coliform	Geometric Mean	200	5338.9	No./100 ml
6/30/2021	1	Thallium, Total	Average Monthly	0.006	0.007	mg/L
6/30/2021	1	Thallium, Total	Daily Maximum	0.009	0.012	mg/L
5/31/2021	1	a-Terpineol	Average Monthly	0.016	0.028	mg/L
5/31/2021	1	a-Terpineol	Daily Maximum	0.033	0.05	mg/L
5/31/2021	1	Benzoic Acid	Average Monthly	0.071	0.275	mg/L
5/31/2021	1	Benzoic Acid	Daily Maximum	0.12	0.5	mg/L
5/31/2021	1	Fecal Coliform	Geometric Mean	200	705	No./100 ml
5/31/2021	1	p-Cresol	Average Monthly	0.014	0.028	mg/L
5/31/2021	1	p-Cresol	Daily Maximum	0.025	0.05	mg/L
5/31/2021	1	Phenol	Average Monthly	0.015	0.028	mg/L
5/31/2021	1	Phenol	Daily Maximum	0.026	0.05	mg/L
5/31/2021	1	Thallium, Total	Average Monthly	0.006	0.007	mg/L
5/31/2021	1	Thallium, Total	Daily Maximum	0.009	0.012	mg/L
4/30/2021	1	Ammonia-Nitrogen	Weekly Average	4.5	16.4	mg/L
4/30/2021	1	Ammonia-Nitrogen	Weekly Average	18.8	32.8	lbs/day
4/30/2021	1	Ammonia-Nitrogen	Average Monthly	3	4.7	mg/L
4/30/2021	1	Fecal Coliform	Instantaneous Maximum	10000	12098	No./100 ml
3/31/2021	1	Ammonia-Nitrogen	Weekly Average	18.8	233.6	lbs/day

3/31/2021	1	Ammonia-Nitrogen	Average Monthly	3	25.3	mg/L
3/31/2021	1	Ammonia-Nitrogen	Average Monthly	12.5	55.5	lbs/day
3/31/2021	1	Ammonia-Nitrogen	Weekly Average	4.5	91.9	mg/L
3/31/2021	1	Fecal Coliform	Instantaneous Maximum	10000	24196	No./100 ml
2/28/2021	1	Thallium, Total	Average Monthly	0.006	0.007	mg/L
2/28/2021	1	Thallium, Total	Daily Maximum	0.009	0.012	mg/L
1/31/2021	1	Ammonia-Nitrogen	Weekly Average	4.5	9.1	mg/L
1/31/2021	1	Thallium, Total	Average Monthly	0.006	0.007	mg/L
1/31/2021	1	Thallium, Total	Daily Maximum	0.009	0.012	mg/L
11/30/2020	1	Ammonia-Nitrogen	Weekly Average	18.8	19.3	lbs/day
11/30/2020	1	Ammonia-Nitrogen	Weekly Average	4.5	8.2	mg/L
11/30/2020	1	Fecal Coliform	Instantaneous Maximum	10000	24196	No./100 ml
11/30/2020	1	Total Suspended Solids	Average Monthly	30	32	mg/L
11/30/2020	1	Total Suspended Solids	Weekly Average	45	62	mg/L
10/31/2020	1	Copper, Total	Average Monthly	0.04	0.05	mg/L
10/31/2020	1	Thallium, Total	Average Monthly	0.006	0.012	mg/L
10/31/2020	1	Thallium, Total	Daily Maximum	0.009	0.012	mg/L
7/31/2020	1	Ammonia-Nitrogen	Weekly Average	12.5	14.6	lbs/day
7/31/2020	1	Ammonia-Nitrogen	Average Monthly	2	3	mg/L
7/31/2020	1	Ammonia-Nitrogen	Weekly Average	3	6.6	mg/L
7/31/2020	1	Fecal Coliform	Geometric Mean	200	274	No./100 ml
7/31/2020	1	Thallium, Total	Average Monthly	0.006	0.007	mg/L

7/31/2020	1	Thallium, Total	Daily Maximum	0.009	0.012	mg/L
5/31/2020	1	Ammonia- Nitrogen	Weekly Average	12.5	187.7	lbs/day
5/31/2020	1	Ammonia- Nitrogen	Average Monthly	2	33.3	mg/L
5/31/2020	1	Ammonia- Nitrogen	Weekly Average	3	66.6	mg/L
5/31/2020	1	Ammonia- Nitrogen	Average Monthly	8.3	92.3	lbs/day
5/31/2020	1	Fecal Coliform	Geometric Mean	200	15350	No./100 ml
5/31/2020	1	Thallium, Total	Average Monthly	0.006	0.007	mg/L
5/31/2020	1	Thallium, Total	Daily Maximum	0.009	0.012	mg/L
4/30/2020	1	Ammonia- Nitrogen	Weekly Average	18.8	111	lbs/day
4/30/2020	1	Ammonia- Nitrogen	Average Monthly	3	23	mg/L
4/30/2020	1	Ammonia- Nitrogen	Weekly Average	4.5	40.9	mg/L
4/30/2020	1	Ammonia- Nitrogen	Average Monthly	12.5	58.6	lbs/day
4/30/2020	1	Fecal Coliform	Instantaneous Maximum	10000	17328	No./100 ml
4/30/2020	1	Total Suspended Solids	Weekly Average	45	65	mg/L
3/31/2020	1	Benzoic Acid	Average Monthly	0.071	0.1	mg/L
2/29/2020	1	Ammonia- Nitrogen	Weekly Average	18.8	239.8	lbs/day
2/29/2020	1	Ammonia- Nitrogen	Average Monthly	3	35.8	mg/L
2/29/2020	1	Ammonia- Nitrogen	Weekly Average	4.5	35.8	mg/L
2/29/2020	1	Ammonia- Nitrogen	Average Monthly	12.5	97.15	lbs/day
2/29/2020	1	Benzoic Acid	Average Monthly	0.071	0.1	mg/L
2/29/2020	1	Fecal Coliform	Instantaneous Maximum	10000	15531	No./100 ml
2/29/2020	1	Total Suspended Solids	Weekly Average	187.8	203	lbs/day
2/29/2020	1	Total Suspended Solids	Weekly Average	45	55	mg/L

1/31/2020	1	Ammonia-Nitrogen	Weekly Average	18.8	157	lbs/day
1/31/2020	1	Ammonia-Nitrogen	Average Monthly	3	3.1	mg/L
1/31/2020	1	Ammonia-Nitrogen	Average Monthly	12.5	52.9	lbs/day
12/31/2019	1	Ammonia-Nitrogen	Average Monthly	3	3.26	mg/L
12/31/2019	1	Ammonia-Nitrogen	Weekly Average	18.8	38.58	lbs/day
12/31/2019	1	Ammonia-Nitrogen	Weekly Average	4.5	9.31	mg/L
10/31/2019	1	Thallium, Total	Daily Maximum	0.009	0.0115	mg/L
8/31/2019	1	Fecal Coliform	Geometric Mean	200	757	No./100 ml
7/31/2019	1	Ammonia-Nitrogen	Weekly Average	3	11.4	mg/L
7/31/2019	1	Ammonia-Nitrogen	Average Monthly	2	2.72	mg/L
7/31/2019	1	Ammonia-Nitrogen	Weekly Average	12.5	32.99	lbs/day
6/30/2019	1	Ammonia-Nitrogen	Weekly Average	3	18.1	mg/L
6/30/2019	1	Ammonia-Nitrogen	Average Monthly	8.3	18.47	lbs/day
6/30/2019	1	Ammonia-Nitrogen	Weekly Average	12.5	47.7	lbs/day
6/30/2019	1	Ammonia-Nitrogen	Average Monthly	2	9.13	mg/L
6/30/2019	1	Fecal Coliform	Geometric Mean	200	218	No./100 ml
5/31/2019	1	Ammonia-Nitrogen	Average Monthly	2	11.09	mg/L
5/31/2019	1	Ammonia-Nitrogen	Weekly Average	3	25.1	mg/L
5/31/2019	1	Ammonia-Nitrogen	Average Monthly	8.3	26.04	lbs/day
5/31/2019	1	Ammonia-Nitrogen	Weekly Average	12.5	72.01	lbs/day
5/31/2019	1	Total Suspended Solids	Weekly Average	187.8	188.49	lbs/day
5/31/2019	1	Total Suspended Solids	Average Monthly	30	39.4	mg/L
5/31/2019	1	Total Suspended Solids	Weekly Average	45	65.7	mg/L

4/30/2019	1	Ammonia-Nitrogen	Weekly Average	18.8	29.05	lbs/day
4/30/2019	1	Ammonia-Nitrogen	Weekly Average	4.5	9.19	mg/L
8/31/2018	1	Fecal Coliform	Geometric Mean	200	403	No./100 ml
7/31/2018	1	Carbonaceous Biochemical Oxygen Demand (CBOD5)	Weekly Average	158.4	175.64	lbs/day
7/31/2018	1	Carbonaceous Biochemical Oxygen Demand (CBOD5)	Average Monthly	25	28.09	mg/L
7/31/2018	1	Carbonaceous Biochemical Oxygen Demand (CBOD5)	Weekly Average	38	60	mg/L
7/31/2018	1	Fecal Coliform	Geometric Mean	200	2419.6	No./100 ml
6/30/2018	1	Ammonia-Nitrogen	Average Monthly	2	2.39	mg/L
6/30/2018	1	Ammonia-Nitrogen	Weekly Average	12.5	29.15	lbs/day
6/30/2018	1	Ammonia-Nitrogen	Weekly Average	3	6.57	mg/L
6/30/2018	1	Fecal Coliform	Geometric Mean	200	12098	CFU/100 ml
5/31/2018	1	Ammonia-Nitrogen	Average Monthly	2	21.02	mg/L
5/31/2018	1	Ammonia-Nitrogen	Weekly Average	12.5	282.44	lbs/day
5/31/2018	1	Ammonia-Nitrogen	Average Monthly	8.3	50.66	lbs/day
5/31/2018	1	Ammonia-Nitrogen	Weekly Average	3	82.8	mg/L
4/30/2018	1	Ammonia-Nitrogen	Average Monthly	12.5	219.01	lbs/day
4/30/2018	1	Ammonia-Nitrogen	Weekly Average	18.8	388.49	lbs/day
4/30/2018	1	Ammonia-Nitrogen	Average Monthly	3	81.96	mg/L
4/30/2018	1	Ammonia-Nitrogen	Weekly Average	4.5	97.86	mg/L
3/31/2018	1	Ammonia-Nitrogen	Average Monthly	12.5	157.46	lbs/day

3/31/2018	1	Ammonia-Nitrogen	Weekly Average	18.8	361.78	lbs/day
3/31/2018	1	Ammonia-Nitrogen	Average Monthly	3	61.12	mg/L
3/31/2018	1	Ammonia-Nitrogen	Weekly Average	4.5	79.74	mg/L
3/31/2018	1	Carbonaceous Biochemical Oxygen Demand (CBOD5)	Weekly Average	158.4	162.42	lbs/day
3/31/2018	1	Total Suspended Solids	Weekly Average	45	132	mg/L
3/31/2018	1	Total Suspended Solids	Average Monthly	30	38.3	mg/L
3/31/2018	1	Total Suspended Solids	Weekly Average	187.8	598.88	lbs/day
2/28/2018	1	Ammonia-Nitrogen	Weekly Average	4.5	107.7	mg/L
2/28/2018	1	Ammonia-Nitrogen	Average Monthly	12.5	129.68	lbs/day
2/28/2018	1	Ammonia-Nitrogen	Average Monthly	3	43.31	mg/L
2/28/2018	1	Ammonia-Nitrogen	Weekly Average	18.8	610.79	lbs/day
1/31/2018	1	Ammonia-Nitrogen	Average Monthly	12.5	118.09	lbs/day
1/31/2018	1	Ammonia-Nitrogen	Weekly Average	18.8	369.83	lbs/day
1/31/2018	1	Ammonia-Nitrogen	Average Monthly	3	51.14	mg/L
1/31/2018	1	Ammonia-Nitrogen	Weekly Average	4.5	88.16	mg/L
12/31/2017	1	Ammonia-Nitrogen	Weekly Average	18.8	123.66	lbs/day
12/31/2017	1	Ammonia-Nitrogen	Average Monthly	3	20.02	mg/L
12/31/2017	1	Ammonia-Nitrogen	Weekly Average	4.5	36.61	mg/L
12/31/2017	1	Ammonia-Nitrogen	Average Monthly	12.5	40.45	lbs/day
11/30/2017	1	Total Suspended Solids	Weekly Average	45	52	mg/L
10/31/2017	1	Ammonia-Nitrogen	Average Monthly	2	2.83	mg/L

10/31/2017	1	Ammonia-Nitrogen	Weekly Average	12.5	26.26	lbs/day
10/31/2017	1	Ammonia-Nitrogen	Weekly Average	3	8.33	mg/L
9/30/2017	1	Fecal Coliform	Geometric Mean	200	1868.35	CFU/100 ml
8/31/2017	1	Ammonia-Nitrogen	Weekly Average	3	11.55	mg/L
8/31/2017	1	Ammonia-Nitrogen	Weekly Average	12.5	29.96	lbs/day
8/31/2017	1	Ammonia-Nitrogen	Average Monthly	2	3.11	mg/L
8/31/2017	1	Fecal Coliform	Geometric Mean	200	1047.38	CFU/100 ml
5/31/2017	1	Ammonia-Nitrogen	Average Monthly	2	2.36	mg/L
5/31/2017	1	Ammonia-Nitrogen	Weekly Average	12.5	29.18	lbs/day
5/31/2017	1	Ammonia-Nitrogen	Weekly Average	3	7.81	mg/L
5/31/2017	1	Fecal Coliform	Geometric Mean	200	408	CFU/100 ml
4/30/2017	1	Ammonia-Nitrogen	Weekly Average	18.8	103.29	lbs/day
4/30/2017	1	Ammonia-Nitrogen	Average Monthly	3	15.04	mg/L
4/30/2017	1	Ammonia-Nitrogen	Average Monthly	12.5	35.59	lbs/day
4/30/2017	1	Ammonia-Nitrogen	Weekly Average	4.5	37.99	mg/L
3/31/2017	1	Ammonia-Nitrogen	Average Monthly	12.5	14.53	lbs/day
3/31/2017	1	Ammonia-Nitrogen	Weekly Average	4.5	19.27	mg/L
3/31/2017	1	Ammonia-Nitrogen	Average Monthly	3	5.8	mg/L
3/31/2017	1	Ammonia-Nitrogen	Weekly Average	18.8	68.3	lbs/day
3/31/2017	1	Total Suspended Solids	Weekly Average	45	48	mg/L

**Compliance Status:** This is a state-owned facility. To date no enforcement action has been taken.

**Completed by:** John Murphy

**Completed date:** 3/30/2022

**Development of Effluent Limitations**

<b>Outfall No.</b> <u>001</u> <b>Latitude</b> <u>40° 0' 36.23"</u> <b>Wastewater Description:</b> <u>Treated Sewage Effluent</u>	<b>Design Flow (MGD)</b> <u>0.5</u> <b>Longitude</b> <u>-79° 2' 20.97"</u>
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**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
CBOD <sub>5</sub>	25	Average Monthly	133.102(a)(4)(i)	92a.47(a)(1)
	40	Average Weekly	133.102(a)(4)(ii)	92a.47(a)(2)
Total Suspended Solids	30	Average Monthly	133.102(b)(1)	92a.47(a)(1)
	45	Average Weekly	133.102(b)(2)	92a.47(a)(2)
pH	6.0 – 9.0 S.U.	Min – Max	133.102(c)	95.2(1)
Fecal Coliform (5/1 – 9/30)	200 / 100 ml	Geo Mean	-	92a.47(a)(4)
Fecal Coliform (5/1 – 9/30)	1,000 / 100 ml	IMAX	-	92a.47(a)(4)
Fecal Coliform (10/1 – 4/30)	2,000 / 100 ml	Geo Mean	-	92a.47(a)(5)
Fecal Coliform (10/1 – 4/30)	10,000 / 100 ml	IMAX	-	92a.47(a)(5)
Total Residual Chlorine	0.5	Average Monthly	-	92a.48(b)(2)
NH <sub>3</sub> -N (mg/L)	25	Average Monthly	-	BPJ
D.O. (mg/L)	4.0	Average Monthly	-	BPJ
Total N (mg/L)	Report	Average Monthly	-	92a.61
Total P (mg/L)	Report	Average Monthly	-	92a.61
<i>E. Coli</i> (No./100 ml)	Report	IMAX	-	92a.61

Comments: The existing discharge was evaluated using WQM 7.0 to develop CBOD<sub>5</sub>, NH<sub>3</sub>-N, and D.O. parameters.

The Total Suspended Solids, pH, and Fecal Coliform parameters are not evaluated using WQM 7.0. The bases for the proposed technology-based limitations are listed in the above table.

**Water Quality-Based Limitations**

The following limitations were determined through water quality modeling (see appendix B):

Parameter	Limit (mg/L)	SBC	Model
CBOD <sub>5</sub> (May1-Oct 31)	25	Average Monthly	WQM7.0
CBOD <sub>5</sub> (Nov 1- Apr 30)	25	Average Monthly	WQM7.0
NH <sub>3</sub> -N (May1-Oct 31)	1.9	Average Monthly	WQM7.0
NH <sub>3</sub> -N (Nov 1- Apr 30)	2.6	Average Monthly	WQM7.0
Dissolved Oxygen	6.0	Minimum	WQM7.0

**Best Professional Judgment (BPJ) Limitations**

Comments: A minimum Dissolved Oxygen (DO) limit of 6.0 mg/L should be established based on DEP water quality model WQM 7.0 Version 1.1 (Appendix A).

The modeling results show a year-round technology based effluent limit for CBOD<sub>5</sub> of 25.0 mg/L is appropriate, which matched the previous permit limit.

A WQM 7.0 was used to determine the newly imposed seasonal limits for Ammonia Nitrogen (NH<sub>3</sub>-N). After applying DEP's regulation (Implementation Guidance of Section 93.7 Ammonia Criteria, 1997), the new limits will be 2.6 mg/L for the cold period and 1.9 mg/L for the warm period. Checking on the eDMRs (see Appendix F), the facility can meet the newly imposed Ammonia limits as the plant has achieved effluent limits of NH<sub>3</sub>-N lower than the new proposed limits; no compliance schedule is necessary, weekly monitoring shall be required.

**Landfills Point Source Pollutants**

This facility treats a significant amount of landfill leachate around 50,000 gpd. Technology based effluent limitations (TBELs) were previously established using the EPA Development Document Effluent Limitation Guidelines and Standards for Landfills Point Source Category- EPA-821-R-99-019, Jan. 2000. The leachate must meet the following effluent limitations which represent the application of BPT/BAT:

Parameter	Average Monthly (mg/L)	Maximum Daily (mg/L)
Alpha-Terpineol	0.016	0.033
Benzoic Acid	0.071	0.12
p-Cresol	0.014	0.025
Phenol	0.15	0.026

Since there are no updates to EPA's guidelines and DEP's regulations, these parameters will be all carried over to this renewal permit effluent limitations table with the same current monitoring requirements of 2/month.

**Reasonable Potential**

The Department's late PENTOXSD Water Quality Model Program was superseded with Toxics Management Screening Analysis Spreadsheet (TMS) was previously run to establish WQBELs for additional toxics and metals that may be present in the facility's effluent due to the received landfill leachate in sufficient quantities that warrant a limit. The results of the PENTOXSD modeling indicate that the parameters Thallium, Copper, Iron and Manganese required WQBELs and their respective limits are:

Parameter	Average Monthly (mg/L)	Ins. Max (mg/L)
Thallium	0.006	0.015
Copper	0.04	0.08
Manganese	3.5	7.0
Iron	3.0	6.0

Trying to develop the toxic parameters and the current limits showing above; DEP requested a sampling event for the pollutant groups under TMS. The applicant submitted the effluent sample groups (1 to 6) on March 13, 2023.

DEP TMS ver. 1.3 model ( see Appendix C) produced a total of 17 pollutants which were determined potential parameters of concern, 6 pollutants have no RP that will need monitoring, 5 pollutants with detection issues since the applicant used higher QL than DEP TQL; DEP sent a pre-draft letter on August 17, 2023 to confirm detection.

TMS ver. 1.4 (see Appendix D) was used to model the pre-draft sampling results received on October 13, 2023 plus the application sampling. TMS model produced a total of 12 pollutants to be parameters of concern, 6 pollutants have no RP which will need weekly monitoring for Total Chromium III, Total Cobalt, Total Nickel, Total Manganese, Total Zinc, and Total Aluminum. New or more stringent limits were recommended for Total Antimony, Total Arsenic, Total Boron, Total Cadmium, Dissolved Iron, and Total Thallium and will be imposed with weekly sampling requirements. A compliance schedule of three years with Toxicity Reduction Evaluation (TRE) requirements will be imposed on the permit.

TMS produced stringent WQBEL for Total Thallium of 0.2 µg/L, DEP sent a letter on November 2, 2023 to resample. Checking on the resampling results received on January 31, 2024, the quantitation limits (QL) used to detect this parameter was higher than DEP TQLs therefore, the newly WQBELs developed for Total Thallium will be imposed for this renewal based on Note 3.C.1 and Note 5 in DEP SOP – *Establishing WQBELs and Permit Conditions for Toxic Pollutants in NPDES Permit Revised*, May 20, 2021.

The renewal permit will carry over the previous permit WQBELs generated by PENTOXSD as shown in the table above for Total Copper, Total Manganese and Total Iron and the only change will be increasing the monitoring frequency to 1/week according to Table 6-3 of DEP's Technical Guidance for the Development and Specification of Effluent Limitations. The increased monitoring frequencies will be explained to the permittee within the permit cover letter.

### **TN and TP Monitoring**

Per SOP-BCW-PMT-033 *Establishing Effluent Limitations for Individual Sewage Permits*: Nutrient monitoring is required at a minimum, to establish the nutrient load from the wastewater treatment facility and the impacts that load may have on the quality of the receiving stream(s). Sewage discharges with design flows > 2,000 gpd require monitoring, at a minimum, for Total Nitrogen (TN) and Total Phosphorus (TP) in new and reissued permits.

The receiving stream is not impaired with nutrients (see Page 4), and since the UNT 39029 of East Branch Coxes Creek been used to carry the treated sewage effluent is full of water most of the time (per DEP's site visit on August 15, 2022), also according to the definition of a dry stream under DEP guidance "Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers , 2008" ; advanced treatment requirements for TN, and TP will not be imposed. The proposed stringent Ammonia limitations will help in lowering TN. 1/quarter monitoring is recommended.

### **Total Dissolved Solids (TDS) and its Major Constituents**

Total Dissolved Solids (TDS) and its major constituents including sulfate, chloride, and bromide have emerged as pollutants of concern. The conservative nature of these solids allows them to accumulate in surface waters and they may remain a concern even if the immediate downstream public water supply is not directly impacted. Bromide has been linked to formation of disinfection byproducts at increased levels in public water systems.

Because of actions associated with Triennial Review 13, the Environmental Quality Board has directed DEP to collect additional data if the Bromide is greater than 1 mg/L. This parameter has detection issues within application and the resampling event, also TMS didn't produce a limit or reporting/monitoring recommendation for Bromide, Chloride, and Sulfate.

Monitoring is not required for Bromide, Chloride, and Sulfate.

### **Disinfection**

Per DEP SOP BCW-PMT-033 - *Establishing Effluent Limitations for Individual Sewage Permits* Revised, February 5, 2024, permittee can even report (at a minimum) UV transmittance (%), UV dosage ( $\mu$ Ws/cm<sup>2</sup> or mWs/cm<sup>2</sup> or mjoules/cm<sup>2</sup>) or UV intensity ( $\mu$ W/cm<sup>2</sup> or mW/cm<sup>2</sup>).

The applicant reported that Ultraviolet had been used for disinfection in this STP. Previous limitation of daily max will be replaced with minimum UV light transmittance (%) on daily basis per the above referenced SOP.

### **E. Coli**

Pursuant to 25 Pa. code § 92a.61(b) quarterly monitoring for *E. Coli* will be imposed at Outfall (001) to determine if *E. Coli* will be a pollutant of concern, which is consistent with DEP SOP No. BCW-PMT-033 revised February 5, 2024.

### **Coxes Creek TMDL**

The Stream code 39029 has a TMDL for Siltation under the segment ID 12716 due to road run off. The facility is not contributing to such case, in the other hand the stringent limits for TSS set in the current permit is helping to reduce the case of turbidity and silt accumulation within the receiving water nevertheless in small magnitude.

Per 40 CFR § 122.44(d)(1)(vii)(B), when developing WQBELs, the permitting authority shall ensure that effluent limits developed to protect a narrative water quality criterion, a numeric water quality criterion, or both, are consistent with the assumptions and requirements of any available Waste Load Allocation (WLA) for the discharge prepared by the State and approved by the EPA pursuant to 40 CFR § 130.7.d.

The applicable water criteria for this watershed can be summarized in the following table:

Parameter	Application Value (mg/L)	Criterion Value (mg/L)	Total Recoverable/Dissolved
Aluminum (Al)	0.0773	0.75	Total Recoverable
Iron (Fe)	1.0	1.5	30-day average
Manganese (Mn)	0.993	1.00	Total Recoverable
pH *	6.53-7.84	6.0-9.0	N/A

Checking on the metals pollution within the receiving stream upon reviewing the effluent sampling data within the reported eDMRs for the last five years and application, no metals concentration exceeds the TMDL criterion values shown within the table above or the current permit limits for Iron and Manganese. This renewal permit will carry over the previous permit limits for Manganese and Total Iron and will have a monitoring requirement for Total Aluminum. The only change will be increasing the monitoring frequency to 1/week.

**Influent Monitoring**

For POTWs with design flows greater than 2,000 GPD, influent BOD<sub>5</sub> and TSS monitoring must be established in the permit, and the monitoring should be consistent with the same frequency and sample type as is used for other effluent parameters.

**Mass Loadings**

Mass loading limits are applicable for publicly owned treatment works. Current policy requires average monthly mass loading limits be established for CBOD<sub>5</sub>, TSS, and NH<sub>3</sub>-N.

Average monthly mass loading limits (lbs/day) are based on the formula: design flow (MGD) x concentration limit (mg/L) x conversion factor (8.34).

**Monitoring Frequency Considerations**

For pH, Dissolved Oxygen (DO) and UV Transmittance (%), a monitoring frequency of “1/day” has been imposed. The daily monitoring frequencies are consistent with current policy and Table 6-3 of DEP’s Technical Guidance for the Development and Specification of Effluent Limitations. Daily monitoring is required for these parameters to provide minimum assurance that the facility is being operated properly.

**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 End of Thirty-Sixth (36<sup>th</sup>) Month Following Permit Issuance.**

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) <sup>(1)</sup>		Concentrations (µg/L)				Minimum <sup>(2)</sup> Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Total Antimony	Report	XXX	XXX	Report	Report	XXX	1/week	24-Hr Composite
Total Arsenic	Report	XXX	XXX	Report	Report	XXX	1/week	24-Hr Composite
Total Boron (mg/L)	Report	XXX	XXX	Report	Report	XXX	1/week	24-Hr Composite
Total Cadmium	Report	XXX	XXX	Report	Report	XXX	1/week	24-Hr Composite
Dissolved Iron	Report	XXX	XXX	Report	Report	XXX	1/week	24-Hr Composite
Total Thallium	Report	XXX	XXX	6.0	9.0	15	1/week	24-Hr Composite

Compliance Sampling Location: Outfall 001.

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 001, Effective Period: Beginning of Thirty Seventh (37<sup>th</sup>) Month Following Permit Issuance through Permit Expiration Date.**

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) <sup>(1)</sup>		Concentrations (µg/L)				Minimum <sup>(2)</sup> Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Total Antimony	0.024	XXX	XXX	5.65	8.81	XXX	1/week	24-Hr Composite
Total Arsenic	0.042	XXX	XXX	10.1	15.7	XXX	1/week	24-Hr Composite
Total Boron (mg/L)	6.73	XXX	XXX	1.614	2.519	XXX	1/week	24-Hr Composite
Total Cadmium	0.002	XXX	XXX	0.52	0.82	XXX	1/week	24-Hr Composite
Dissolved Iron	1.26	XXX	XXX	303	472	XXX	1/week	24-Hr Composite
Total Thallium	0.001	XXX	XXX	0.24	0.38	XXX	1/week	24-Hr Composite

Compliance Sampling Location: Outfall 001.

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

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) <sup>(1)</sup>		Concentrations (mg/L)				Minimum <sup>(2)</sup> Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	0.50	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Recorded
pH (S.U.)	XXX	XXX	6.0	XXX	9.0 Max	XXX	1/day	Grab
DO	XXX	XXX	6.0	XXX	XXX	XXX	1/day	Grab
UV Transmittance (%)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Measured
CBOD5	104.2	158.4	XXX	25	38 Wkly Avg	50	1/week	24-Hr Composite
TSS	125.2	187.8	XXX	30	45 Wkly Avg	60	1/week	24-Hr Composite
BOD5 Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	1/week	24-Hr Composite
TSS Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	1/week	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/week	Grab
Ammonia-Nitrogen Nov 1 - Apr 30	10.8	16.2	XXX	2.6	3.9 Wkly Avg	5.2	1/week	24-Hr Composite
Ammonia-Nitrogen May 1 - Oct 31	7.9	12.09	XXX	1.9	2.9 Wkly Avg	3.8	1/week	24-Hr Composite
Phenol	XXX	XXX	XXX	0.015	0.026 Wkly Avg	0.037	2/month	24-Hr Composite
a-Terpineol	XXX	XXX	XXX	0.016	0.033 Wkly Avg	0.04	2/month	24-Hr Composite

Outfall 001 , Continued (from Permit Effective Date through Permit Expiration Date )

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) <sup>(1)</sup>		Concentrations (mg/L)				Minimum <sup>(2)</sup> Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Benzoic Acid	XXX	XXX	XXX	0.071	0.120 Wkly Avg	0.15	2/month	24-Hr Composite
p-Cresol	XXX	XXX	XXX	0.014	0.025 Wkly Avg	0.035	2/month	24-Hr Composite
Total Iron	12.5	XXX	XXX	3.0	4.5	6.0	1/week	24-Hr Composite
Total Manganese	14.6	XXX	XXX	3.5	5.2	7.0	1/week	24-Hr Composite
Total Chromium III	XXX	XXX	XXX	Report	Report	XXX	1/week	24-Hr Composite
Total Cobalt	XXX	XXX	XXX	Report	Report	XXX	1/week	24-Hr Composite
Total Copper	XXX	XXX	XXX	0.04	0.06	0.08	1/week	24-Hr Composite
Total Nickel	XXX	XXX	XXX	Report	Report	XXX	1/week	24-Hr Composite
Total Zinc	XXX	XXX	XXX	Report	Report	XXX	1/week	24-Hr Composite
Total Nitrogen	XXX	XXX	XXX	Report Avg. Qrtly	Report	XXX	1/quarter	24-Hr Composite
Total Phosphorus	XXX	XXX	XXX	Report Avg. Qrtly	Report	XXX	1/quarter	24-Hr Composite
Total Aluminum	XXX	XXX	XXX	Report	Report	XXX	1/week	24-Hr Composite
<i>E. Coli</i> (No./100ml)	XXX	XXX	XXX	XXX	XXX	Report	1/quarter	Grab

Compliance Sampling Location: Outfall 001.

Other Comments: None.

Appendix -A- POFU Survey Memo



**MEMO**

**TO** Hazim Aldalli  
Environmental Engineering Specialist  
Clean Water Program

**FROM** Richard Spear  
Aquatic Biologist Supervisor  
Clean Water Program

**DATE** November 7, 2022

**RE** Point of First Use Survey  
Undocumented and Unnamed Tributary to UNT 39029 of East Branch  
Coxes Creek  
State Water Plan: 19F  
Hydrologic Unit Code: 05020006  
Stream Code: N/A and 39029  
Somerset Township, Somerset County, PA

**INTRODUCTION**

On August 15, 2022, at the request of Hazim Aldalli of the Clean Water Program, a Point of First Surface Water Use (POFU) Survey was attempted in the vicinity of the State Correctional Institute (SCI) Laurel Highlands Wastewater Treatment Plant outfall to an Undocumented and Unnamed Tributary to UNT 39029 of East Branch Coxes Creek. The property is the State Correctional Institute (SCI) Laurel Highlands in Somerset Township, Somerset County (Figure 1). The first sampling location was at latitude 40.01006 and the longitude was -79.03906, just below the discharge from the plant in the Unnamed and Undocumented Tributary to UNT 39029 of East Branch Coxes Creek. The second site was along Mostoller Road at Latitude 40.01318 and Longitude -79.039626 on UNT 39029 of East Branch Coxes Creek. I went with Hazim Aldalli and Water Quality Specialist, Lisa Milsop, of the Clean Water Program, and the 2 SCI plant operators. East Branch of Coxes Creek is in Somerset Township, Somerset County. I could not perform a delineation of the drainage area using USGS Stream Stats. The stream is undocumented and unnamed, so it is not in the National Hydrologic Data (NHD) set, and thus will not show up as a location to perform a watershed delineation in in Stream Stats. To complicate matters, the SCI and a Waste Management landfill have an agreement that SCI takes leachate from the landfill. The SCI Wastewater Treatment Plant is not able to properly treat the leachate.

**SAMPLING METHODOLOGY**

The POFU is the location at which a body of water can support aquatic life as defined in 25 Pennsylvania Code §93. Guidance for determining the POFU is in the Department's guidance document #391-2000-014, Policy and Procedures for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage

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Channels and Swales, and Storm Sewers (revised April 12, 2008). Specifically, Appendix B of the guidance document provides additional guidance when making a POFU determination.

On August 15, 2022, we sampled water quality (Table 1) and macroinvertebrates (Table 2) at the Undocumented and Unnamed Tributary to UNT 39029 of East Branch Coxes Creek (Figure 2), and UNT 39029 of East Branch of Coxes Creek (Figure 3). We revisited UNT 39029 of East Branch of Coxes Creek on November 3, 2022. Macroinvertebrates were not found at the first site on the Undocumented and Unnamed Tributary to UNT 39029 of East Branch Coxes Creek but were found at the second site on the UNT 39029 of East Branch Coxes Creek (Table 3). The protocol used was in accordance to the Department's Qualitative Benthic Macroinvertebrate Data Collection Protocol, found in the Water Quality Monitoring Protocols for Streams and Rivers 2021 (Monitoring Book), which can be found by accessing the following website: [MONITORING BOOK.pdf \(state.pa.us\)](https://www.state.pa.us/monitoring-book.pdf)

#### RESULTS, DISCUSSION, AND CONCLUSIONS

The objective of this study was to examine aquatic life in the Undocumented and Unnamed Tributary to UNT 39029 of East Branch Coxes Creek to determine if and where the stream is capable of supporting an aquatic life use as defined in 25 Pennsylvania Code §93.9q, where water quality standards must be met. The Undocumented and Unnamed Tributary to UNT 39029 of East Branch Coxes Creek, had zero taxa found in it (Table 2), and therefore, does not have an aquatic life use. Six taxa were found in UNT 39029 of East Branch Coxes Creek with three of them being long lived (Table 3). That makes UNT 39029 of East Branch Coxes Creek the point of first use. Most of the worms that were found were indicative of a sewage discharge. The Undocumented and Unnamed Tributary to UNT 39029 of East Branch Coxes Creek is severely impaired by very high conductivity from the SCI STP, which they claim is coming from the landfill leachate. SCI Laurel Highlands has an agreement with the to take. Efforts should be made to treat the leachate, as it is also affecting the UNT 39029 of East Branch Coxes Creek and causing impairment.

cc: Stream File – Undocumented and Unnamed Tributary UNT 39029 of East Branch Coxes Creek  
Thomas Flanagan – SWRO Sewage Planning Specialist Supervisor  
Stacey Greenwald – SWRO, Environmental Group Manager  
Christopher Kriley – SWRO, Environmental Program Manager  
Mahbuba Iasmin – SWRO, Environmental Group Manager  
Erika Arnold – CO, Environmental Group Manager

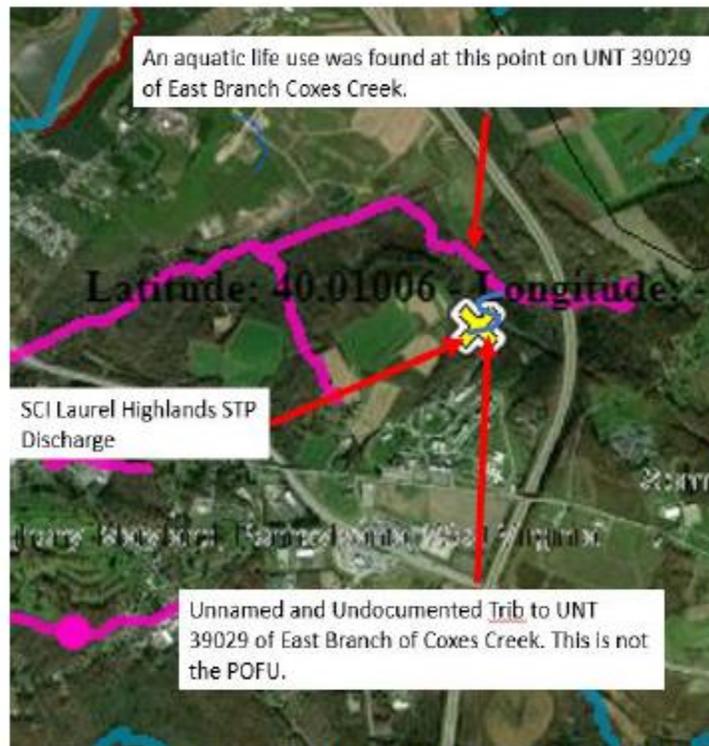


Figure 1. Map showing the Undocumented and Unnamed Tributary to UNT 39029 of East Branch Coxes Creek

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Figure 2. Picture of the Undocumented and Unnamed Tributary to UNT 39029 of East Branch Coxes Creek

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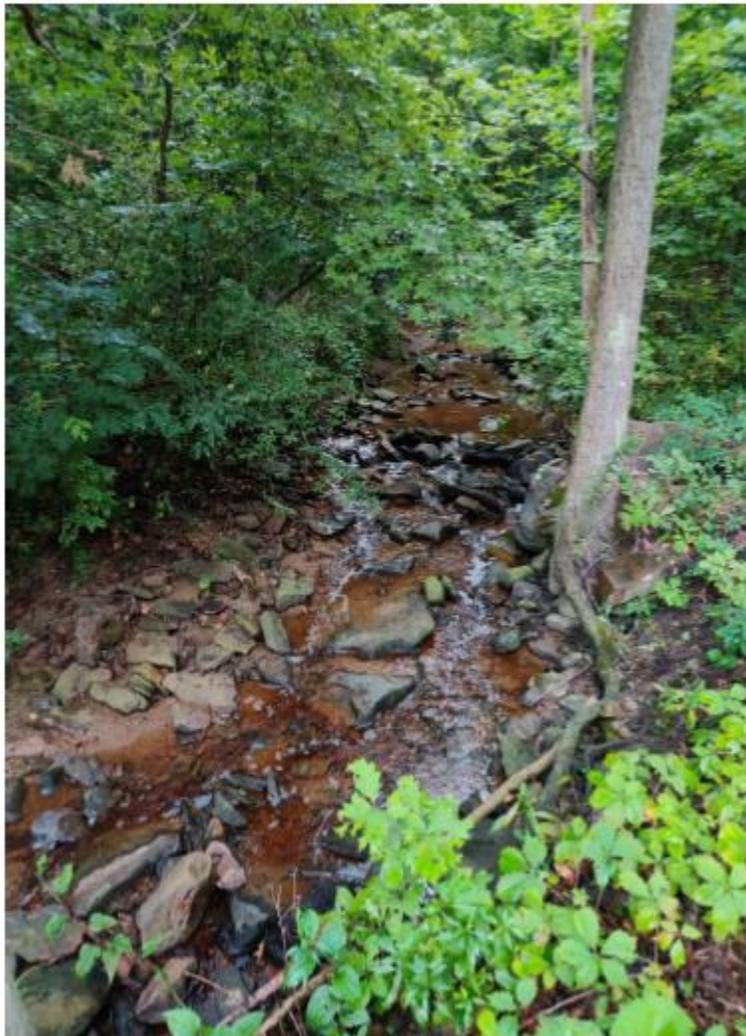


Figure 3. Picture of the UNT 39029 of East Branch Coxes Creek

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**Table 1.** Water quality parameters from the Undocumented and Unnamed Tributary to UNT 39029 of East Branch Coxes Creek and UNT 39029 of East Branch Coxes Creek

PARAMETER	DESCRIPTION	Results from Unnamed and Undocumented Stream @ 1030	Results from UNT 39029 of East Branch Coxes Creek @1058
pH	FIELD	7.17 pH units	7.56 pH units
TEMPERATURE	FIELD	21.2° C	17.0° C
DISSOLVED OXYGEN MG/L	FIELD	7.93 mg/L	8.42 mg/L
DISSOLVED OXYGEN %	Field	90.1 %	87.8 %
SPECIFIC CONDUCTANCE	FIELD	2,903.0 umhos/cm	2,387.0 umhos/cm

**Table 2.** Macroinvertebrates observed in Undocumented and Unnamed Tributary to UNT 39029 of East Branch Coxes Creek

TAXA	Family (Common Name)	Number in sample	Long lived taxa
No Taxa observed			

**Table 3.** Macroinvertebrates observed in UNT 39029 of East Branch Coxes Creek

TAXA	Family (Common Name)	Sample Relative Abundance	Long lived taxa
Hydropsychidae	Common Net spinner Caddisfly	Dominant	Yes
Tipula	Craneflies	Common	Yes
Clitellata	Worms	Dominant	No
Chironomidae	Non-Biting Midges	Common	No
Elmidae	Riffle Beetles	Rare	Yes
Ceratopogonidae	Biting Midges	Rare	No

Appendix B – WQM 7.0 Modeling – Summer Conditions

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
19F	39029	Trib 39029 of East Branch Coxes Cr	0.720	2350.00	0.64	0.01080	0.00	<input checked="" type="checkbox"/>

Stream Data

Design Cond.	LFY	Trib Flow	Stream Flow	Rch Trav Time	Rch Velocity	WD Ratio	Rch Width	Rch Depth	Tributary Temp	pH	Stream Temp	pH
	(cfsm)	(cfs)	(cfs)	(days)	(fps)		(ft)	(ft)	(°C)		(°C)	
Q7-10	0.011	0.01	0.00	0.000	0.000	0.0	0.00	0.00	25.00	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
SCI Laurel STP	PA0030406	0.5000	0.5000	0.5000	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	4.00	8.24	0.00	0.00
NH3-N	25.00	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
19F	39029	Trib 39029 of East Branch Coxes Cr	0.001	2246.00	2.67	0.01080	0.00	<input checked="" type="checkbox"/>

**Stream Data**

Design Cond.	LFY	Trib Flow	Stream Flow	Rch Trav Time	Rch Velocity	WD Ratio	Rch Width	Rch Depth	Tributary Temp	Tributary pH	Stream Temp	Stream pH
	(cfsm)	(cfs)	(cfs)	(days)	(fps)		(ft)	(ft)	(°C)		(°C)	
Q7-10	0.014	0.01	0.00	0.000	0.000	0.0	0.00	0.00	25.00	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
SCI Laurel STP	PA0030406	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	4.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

**WQM 7.0 Hydrodynamic Outputs**

<u>SWP Basin</u>		<u>Stream Code</u>		<u>Stream Name</u>								
19F		39029		Trib 39029 of East Branch Coxes Cr								
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 (°C)	Analysis pH
<b>Q7-10 Flow</b>												
0.720	0.01	0.00	0.01	.7735	0.01080	.495	7.34	14.82	0.22	0.204	20.06	7.00
<b>Q1-10 Flow</b>												
0.720	0.01	0.00	0.01	.7735	0.01080	NA	NA	NA	0.21	0.204	20.04	7.00
<b>Q30-10 Flow</b>												
0.720	0.01	0.00	0.01	.7735	0.01080	NA	NA	NA	0.22	0.203	20.09	7.00

**WQM 7.0 Modeling Specifications**

Parameters	Both	Use Inputted Q1-10 and Q30-10 Flows	<input checked="" type="checkbox"/>
WLA Method	EMPR	Use Inputted W/D Ratio	<input type="checkbox"/>
Q1-10/Q7-10 Ratio	0.64	Use Inputted Reach Travel Times	<input type="checkbox"/>
Q30-10/Q7-10 Ratio	1.36	Temperature Adjust Kr	<input type="checkbox"/>
D.O. Saturation	90.00%	Use Balanced Technology	<input checked="" type="checkbox"/>
D.O. Goal	6		

**WQM 7.0 D.O. Simulation**

<u>SWP Basin</u>	<u>Stream Code</u>	<u>Stream Name</u>			
19F	39029	Trib 39029 of East Branch Coxes Cr			
<u>RMI</u>	<u>Total Discharge Flow (mgd)</u>	<u>Analysis Temperature (°C)</u>		<u>Analysis pH</u>	
0.720	0.500	20.064		7.000	
<u>Reach Width (ft)</u>	<u>Reach Depth (ft)</u>	<u>Reach WDRatio</u>		<u>Reach Velocity (fps)</u>	
7.340	0.495	14.821		0.216	
<u>Reach CBOD5 (mg/L)</u>	<u>Reach Kc (1/days)</u>	<u>Reach NH3-N (mg/L)</u>		<u>Reach Kn (1/days)</u>	
24.71	1.498	1.89		0.703	
<u>Reach DO (mg/L)</u>	<u>Reach Kr (1/days)</u>	<u>Kr Equation</u>		<u>Reach DO Goal (mg/L)</u>	
6.029	28.473	Owens		6	
<u>Reach Travel Time (days)</u>	<b>Subreach Results</b>				
0.204	<u>TravTime (days)</u>	<u>CBOD5 (mg/L)</u>	<u>NH3-N (mg/L)</u>	<u>D.O. (mg/L)</u>	
	0.020	23.96	1.86	6.46	
	0.041	23.24	1.83	6.73	
	0.061	22.54	1.81	6.91	
	0.082	21.86	1.78	7.03	
	0.102	21.20	1.75	7.13	
	0.122	20.56	1.73	7.20	
	0.143	19.94	1.71	7.27	
	0.163	19.34	1.68	7.33	
	0.183	18.75	1.66	7.38	
	0.204	18.19	1.63	7.44	

**WQM 7.0 Wasteload Allocations**

<u>SWP Basin</u>	<u>Stream Code</u>	<u>Stream Name</u>					
19F	39029	Trib 39029 of East Branch Coxes Cr					

<b>NH3-N Acute Allocations</b>							
RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
0.720	SCI Laurel STP	16.7	16.84	16.7	16.84	0	0

<b>NH3-N Chronic Allocations</b>							
RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
0.720	SCI Laurel STP	1.88	1.91	1.88	1.91	0	0

<b>Dissolved Oxygen Allocations</b>									
RMI	Discharge Name	<u>CBOD5</u>		<u>NH3-N</u>		<u>Dissolved Oxygen</u>		Critical Reach	Percent Reduction
		Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)		
0.72	SCI Laurel STP	25	25	1.91	1.91	6	6	0	0

**WQM 7.0 Effluent Limits**

<u>SWP Basin</u>	<u>Stream Code</u>	<u>Stream Name</u>					
19F	39029	Trib 39029 of East Branch Coxes Cr					

RMI	Name	Permit Number	Disc Flow (mgd)	Parameter	Effl. Limit 30-day Ave. (mg/L)	Effl. Limit Maximum (mg/L)	Effl. Limit Minimum (mg/L)
0.720	SCI Laurel STP	PA0030406	0.500	CBOD5	25		
				NH3-N	1.91	3.82	
				Dissolved Oxygen			6

**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
19F	39029	Trib 39029 of East Branch Coxes Cr	0.720	2350.00	0.64	0.01080	0.00	<input checked="" type="checkbox"/>

**Stream Data**

Design Cond.	LFY	Trib Flow	Stream Flow	Rch Trav Time	Rch Velocity	WD Ratio	Rch Width	Rch Depth	Tributary		Stream	
	(cfsm)	(cfs)	(cfs)	(days)	(fps)		(ft)	(ft)	Temp (°C)	pH	Temp (°C)	pH
Q7-10	0.022	0.01	0.00	0.000	0.000	0.0	0.00	0.00	5.00	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
SCI Laurel STP	PA0030406	0.5000	0.5000	0.5000	0.000	15.00	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	4.00	12.51	0.00	0.00
NH3-N	25.00	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
19F	39029	Trib 39029 of East Branch Coxes Cr	0.001	2246.00	2.67	0.01080	0.00	<input checked="" type="checkbox"/>

**Stream Data**

Design Cond.	LFY	Trib Flow	Stream Flow	Rch Trav Time	Rch Velocity	WD Ratio	Rch Width	Rch Depth	Tributary Temp	Tributary pH	Stream Temp	Stream pH
	(cfsm)	(cfs)	(cfs)	(days)	(fps)		(ft)	(ft)	(°C)		(°C)	
Q7-10	0.028	0.04	0.00	0.000	0.000	0.0	0.00	0.00	5.00	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
SCI Laurel STP	PA0030406	0.0000	0.0000	0.0000	0.000	15.00	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	4.00	12.51	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

**WQM 7.0 Hydrodynamic Outputs**

<u>SWP Basin</u>		<u>Stream Code</u>				<u>Stream Name</u>						
19F		39029				Trib 39029 of East Branch Coxes Cr						
RMI	Stream Flow	PWS With	Net Stream Flow	Disc Analysis Flow	Reach Slope	Depth	Width	W/D Ratio	Velocity	Reach Trav Time	Analysis Temp	Analysis pH
	(cfs)	(cfs)	(cfs)	(cfs)	(ft/ft)	(ft)	(ft)		(fps)	(days)	(°C)	
<b>Q7-10 Flow</b>												
0.720	0.01	0.00	0.01	.7735	0.01080	.495	7.34	14.82	0.22	0.204	14.87	7.00
<b>Q1-10 Flow</b>												
0.720	0.01	0.00	0.01	.7735	0.01080	NA	NA	NA	0.21	0.204	14.92	7.00
<b>Q30-10 Flow</b>												
0.720	0.01	0.00	0.01	.7735	0.01080	NA	NA	NA	0.22	0.203	14.83	7.00

**WQM 7.0 Modeling Specifications**

Parameters	Both	Use Inputted Q1-10 and Q30-10 Flows	<input checked="" type="checkbox"/>
WLA Method	EMPR	Use Inputted W/D Ratio	<input type="checkbox"/>
Q1-10/Q7-10 Ratio	0.64	Use Inputted Reach Travel Times	<input type="checkbox"/>
Q30-10/Q7-10 Ratio	1.36	Temperature Adjust Kr	<input type="checkbox"/>
D.O. Saturation	90.00%	Use Balanced Technology	<input checked="" type="checkbox"/>
D.O. Goal	6		

**WQM 7.0 D.O.Simulation**

<u>SWP Basin</u>		<u>Stream Code</u>		<u>Stream Name</u>			
19F		39029		Trib 39029 of East Branch Coxes Cr			
<u>RMI</u>	<u>Total Discharge Flow (mgd)</u>		<u>Analysis Temperature (°C)</u>		<u>Analysis pH</u>		
0.720	0.500		14.872		7.000		
<u>Reach Width (ft)</u>	<u>Reach Depth (ft)</u>		<u>Reach WDRatio</u>		<u>Reach Velocity (fps)</u>		
7.340	0.495		14.821		0.216		
<u>Reach CBOD5 (mg/L)</u>	<u>Reach Kc (1/days)</u>		<u>Reach NH3-N (mg/L)</u>		<u>Reach Kn (1/days)</u>		
24.71	1.498		2.65		0.472		
<u>Reach DO (mg/L)</u>	<u>Reach Kr (1/days)</u>		<u>Kr Equation</u>		<u>Reach DO Goal (mg/L)</u>		
6.083	28.473		Owens		6		
<u>Reach Travel Time (days)</u>	<b>Subreach Results</b>						
0.204	<u>TravTime (days)</u>	<u>CBOD5 (mg/L)</u>	<u>NH3-N (mg/L)</u>	<u>D.O. (mg/L)</u>			
	0.020	24.12	2.62	7.11			
	0.041	23.54	2.60	7.70			
	0.061	22.98	2.57	8.04			
	0.082	22.43	2.55	8.25			
	0.102	21.90	2.52	8.39			
	0.122	21.38	2.50	8.48			
	0.143	20.87	2.47	8.54			
	0.163	20.37	2.45	8.59			
	0.183	19.88	2.43	8.64			
	0.204	19.41	2.40	8.67			

**WQM 7.0 Wasteload Allocations**

<u>SWP Basin</u>	<u>Stream Code</u>	<u>Stream Name</u>					
19F	39029	Trib 39029 of East Branch Coxes Cr					

<b>NH3-N Acute Allocations</b>							
RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
0.720	SCI Laurel STP	24.1	24.3	24.1	24.3	0	0

<b>NH3-N Chronic Allocations</b>							
RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
0.720	SCI Laurel STP	2.63	2.68	2.63	2.68	0	0

<b>Dissolved Oxygen Allocations</b>									
RMI	Discharge Name	<u>CBOD5</u>		<u>NH3-N</u>		<u>Dissolved Oxygen</u>		Critical Reach	Percent Reduction
		Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)		
0.72	SCI Laurel STP	25	25	2.68	2.68	6	6	0	0

**WQM 7.0 Effluent Limits**

<u>SWP Basin</u>	<u>Stream Code</u>	<u>Stream Name</u>					
19F	39029	Trib 39029 of East Branch Coxes Cr					

RMI	Name	Permit Number	Disc Flow (mgd)	Parameter	Effl. Limit 30-day Ave. (mg/L)	Effl. Limit Maximum (mg/L)	Effl. Limit Minimum (mg/L)
0.720	SCI Laurel STP	PA0030406	0.500	CBOD5	25		
				NH3-N	2.68	5.36	
				Dissolved Oxygen			6

Appendix C – Toxics Management Spreadsheet (TMS) Analysis



Toxics Management Spreadsheet  
 Version 1.3, March 2021

Discharge Information

Instructions Discharge Stream

Facility: **SCI Laurel Highlands STP** NPDES Permit No.: **PA0030406** Outfall No.: **001**

Evaluation Type: **Major Sewage / Industrial Waste** Wastewater Description: **Municipal Sewage**

Discharge Characteristics								
Design Flow (MGD)*	Hardness (mg/l)*	pH (SU)*	Partial Mix Factors (PMFs)				Complete Mix Times (min)	
			AFC	CFC	THH	CRL	Q <sub>7-10</sub>	Q <sub>h</sub>
0.5	242	7.2						

Discharge Pollutant	Units	Max Discharge Conc	0 if left blank		0.5 if left blank		0 if left blank			1 if left blank	
			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	1660								
	Chloride (PWS)	mg/L	463								
	Bromide	mg/L	< 2								
	Sulfate (PWS)	mg/L	75.2								
	Fluoride (PWS)	mg/L									
Group 2	Total Aluminum	µg/L	77.3								
	Total Antimony	µg/L	2.9								
	Total Arsenic	µg/L	20								
	Total Barium	µg/L	142								
	Total Beryllium	µg/L	< 1								
	Total Boron	µg/L	1470								
	Total Cadmium	µg/L	0.3								
	Total Chromium (III)	µg/L	23.8								
	Hexavalent Chromium	µg/L	< 25								
	Total Cobalt	µg/L	8								
	Total Copper	µg/L	0.037								
	Free Cyanide	µg/L	10								
	Total Cyanide	µg/L	22								
	Dissolved Iron	µg/L	250								
	Total Iron	µg/L	0.56								
	Total Lead	µg/L	< 0.008								
	Total Manganese	µg/L	274								
	Total Mercury	µg/L	< 0.2								
	Total Nickel	µg/L	34.4								
	Total Phenols (Phenolics) (PWS)	µg/L	66								
	Total Selenium	µg/L	1.3								
	Total Silver	µg/L	< 0.2								
Total Thallium	µg/L	7.7									
Total Zinc	µg/L	0.0592									
Total Molybdenum	µg/L	3.7									
Acrolein	µg/L	< 5									
Acrylamide	µg/L										
Acrylonitrile	µg/L	< 1									
Benzene	µg/L	< 0.5									
Bromoform	µg/L	< 1									







Stream / Surface Water Information

SCI Laurel Highlands STP, NPDES Permit No. PA0030406, Outfall 001

Instructions Discharge **Stream**

Receiving Surface Water Name: **Trib 39029 of East Branch Coxes Creek** No. Reaches to Model: **1**

- Statewide Criteria
- Great Lakes Criteria
- ORSANCO Criteria

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi <sup>2</sup> )*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	039029	0.72	2350	0.64	0.0108		Yes
End of Reach 1	039029	0.001	2246	2.67	0.0108		Yes

**Q<sub>7-10</sub>**

Location	RMI	LFY (cfs/mi <sup>2</sup> )*	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	0.72	0.011	0.00691									100	7		
End of Reach 1	0.001	0.014	0.04									100	7		

**Q<sub>h</sub>**

Location	RMI	LFY (cfs/mi <sup>2</sup> )	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	0.72														
End of Reach 1	0.001														



Model Results

SCI Laurel Highlands STP, NPDES Permit No. PA0030406, Outfall 001

Instructions

Results

RETURN TO INPUTS

SAVE AS PDF

PRINT

All

Inputs

Results

Limits

Hydrodynamics

Q<sub>7-10</sub>

RMI	Stream Flow (cfs)	PWS Withdrawal (cfs)	Net Stream Flow (cfs)	Discharge Analysis Flow (cfs)	Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Travel Time (days)	Complete Mix Time (min)
0.72	0.01		0.01	0.774	0.011	0.495	7.332	14.815	0.215	0.204	0.00016
0.001	0.04		0.04								

Q<sub>h</sub>

RMI	Stream Flow (cfs)	PWS Withdrawal (cfs)	Net Stream Flow (cfs)	Discharge Analysis Flow (cfs)	Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Travel Time (days)	Complete Mix Time (min)
0.72	0.10		0.10	0.774	0.011	0.519	7.332	14.126	0.228	0.192	0.023
0.001	0.446		0.45								

Wasteload Allocations

AFC

CCT (min): 0.000

PMF: 1

Analysis Hardness (mg/l): 240.74

Analysis pH: 7.20

Pollutants	Current 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	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	750	750	757	
Total Antimony	0	0		0	1,100	1,100	1,110	
Total Arsenic	0	0		0	340	340	343	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	21,188	
Total Boron	0	0		0	8,100	8,100	8,172	
Total Cadmium	0	0		0	4.728	5.21	5.26	Chem Translator of 0.907 applied
Total Chromium (III)	0	0		0	1170.002	3,703	3,736	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	16.4	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	95.8	
Total Copper	0	0		0	30.752	32.0	32.3	Chem Translator of 0.96 applied
Free Cyanide	0	0		0	22	22.0	22.2	

Dissolved Iron	0	0	0	N/A	N/A	N/A	
Total Iron	0	0	0	N/A	N/A	N/A	
Total Lead	0	0	0	165.635	250	252	Chem Translator of 0.663 applied
Total Manganese	0	0	0	N/A	N/A	N/A	
Total Mercury	0	0	0	1.400	1.65	1.66	Chem Translator of 0.85 applied
Total Nickel	0	0	0	984.597	987	995	Chem Translator of 0.998 applied
Total Phenols (Phenolics) (PWS)	0	0	0	N/A	N/A	N/A	
Total Selenium	0	0	0	N/A	N/A	N/A	Chem Translator of 0.922 applied
Total Silver	0	0	0	14.578	17.2	17.3	Chem Translator of 0.85 applied
Total Thallium	0	0	0	65	65.0	65.6	
Total Zinc	0	0	0	246.686	252	254	Chem Translator of 0.978 applied
Acrolein	0	0	0	3	3.0	3.03	
Acrylonitrile	0	0	0	650	650	656	
Benzene	0	0	0	640	640	646	
Bromoform	0	0	0	1,800	1,800	1,816	
Carbon Tetrachloride	0	0	0	2,800	2,800	2,825	
Chlorobenzene	0	0	0	1,200	1,200	1,211	
Chlorodibromomethane	0	0	0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0	0	18,000	18,000	18,161	
Chloroform	0	0	0	1,900	1,900	1,917	
Dichlorobromomethane	0	0	0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0	0	15,000	15,000	15,134	
1,1-Dichloroethylene	0	0	0	7,500	7,500	7,567	
1,2-Dichloropropane	0	0	0	11,000	11,000	11,098	
1,3-Dichloropropylene	0	0	0	310	310	313	
Ethylbenzene	0	0	0	2,900	2,900	2,926	
Methyl Bromide	0	0	0	550	550	555	
Methyl Chloride	0	0	0	28,000	28,000	28,250	
Methylene Chloride	0	0	0	12,000	12,000	12,107	
1,1,2,2-Tetrachloroethane	0	0	0	1,000	1,000	1,009	
Tetrachloroethylene	0	0	0	700	700	706	
Toluene	0	0	0	1,700	1,700	1,715	
1,2-trans-Dichloroethylene	0	0	0	6,800	6,800	6,861	
1,1,1-Trichloroethane	0	0	0	3,000	3,000	3,027	
1,1,2-Trichloroethane	0	0	0	3,400	3,400	3,430	
Trichloroethylene	0	0	0	2,300	2,300	2,321	
Vinyl Chloride	0	0	0	N/A	N/A	N/A	
2-Chlorophenol	0	0	0	560	560	565	
2,4-Dichlorophenol	0	0	0	1,700	1,700	1,715	
2,4-Dimethylphenol	0	0	0	660	660	666	
2,4-Dinitrophenol	0	0	0	660	660	666	
2-Nitrophenol	0	0	0	8,000	8,000	8,071	
4-Nitrophenol	0	0	0	2,300	2,300	2,321	
p-Chloro-m-Cresol	0	0	0	160	160	161	
Pentachlorophenol	0	0	0	10.641	10.6	10.7	
Phenol	0	0	0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0	0	460	460	464	
Acenaphthene	0	0	0	83	83.0	83.7	

Anthracene	0	0	0	N/A	N/A	N/A
Benidine	0	0	0	300	300	303
Benzo(a)Anthracene	0	0	0	0.5	0.5	0.5
Benzo(a)Pyrene	0	0	0	N/A	N/A	N/A
3,4-Benzofluoranthene	0	0	0	N/A	N/A	N/A
Benzo(k)Fluoranthene	0	0	0	N/A	N/A	N/A
Bis(2-Chloroethyl)Ether	0	0	0	30,000	30,000	30,268
Bis(2-Chloroisopropyl)Ether	0	0	0	N/A	N/A	N/A
Bis(2-Ethylhexyl)Phthalate	0	0	0	4,500	4,500	4,540
4-Bromophenyl Phenyl Ether	0	0	0	270	270	272
Butyl Benzyl Phthalate	0	0	0	140	140	141
2-Chloronaphthalene	0	0	0	N/A	N/A	N/A
Chrysene	0	0	0	N/A	N/A	N/A
Dibenzo(a,h)Anthracene	0	0	0	N/A	N/A	N/A
1,2-Dichlorobenzene	0	0	0	820	820	827
1,3-Dichlorobenzene	0	0	0	350	350	353
1,4-Dichlorobenzene	0	0	0	730	730	737
3,3-Dichlorobenzidine	0	0	0	N/A	N/A	N/A
Diethyl Phthalate	0	0	0	4,000	4,000	4,036
Dimethyl Phthalate	0	0	0	2,500	2,500	2,522
Di-n-Butyl Phthalate	0	0	0	110	110	111
2,4-Dinitrotoluene	0	0	0	1,600	1,600	1,614
2,6-Dinitrotoluene	0	0	0	990	990	999
1,2-Diphenylhydrazine	0	0	0	15	15.0	15.1
Fluoranthene	0	0	0	200	200	202
Fluorene	0	0	0	N/A	N/A	N/A
Hexachlorobenzene	0	0	0	N/A	N/A	N/A
Hexachlorobutadiene	0	0	0	10	10.0	10.1
Hexachlorocyclopentadiene	0	0	0	5	5.0	5.04
Hexachloroethane	0	0	0	60	60.0	60.5
Indeno(1,2,3-cd)Pyrene	0	0	0	N/A	N/A	N/A
Isophorone	0	0	0	10,000	10,000	10,089
Naphthalene	0	0	0	140	140	141
Nitrobenzene	0	0	0	4,000	4,000	4,036
n-Nitrosodimethylamine	0	0	0	17,000	17,000	17,152
n-Nitrosodi-n-Propylamine	0	0	0	N/A	N/A	N/A
n-Nitrosodiphenylamine	0	0	0	300	300	303
Phenanthrene	0	0	0	5	5.0	5.04
Pyrene	0	0	0	N/A	N/A	N/A
1,2,4-Trichlorobenzene	0	0	0	130	130	131
Aldrin	0	0	0	3	3.0	3.03
alpha-BHC	0	0	0	N/A	N/A	N/A
beta-BHC	0	0	0	N/A	N/A	N/A
gamma-BHC	0	0	0	0.95	0.95	0.96
Chlordane	0	0	0	2.4	2.4	2.42
4,4-DDT	0	0	0	1.1	1.1	1.11
4,4-DDE	0	0	0	1.1	1.1	1.11
4,4-DDD	0	0	0	1.1	1.1	1.11

Dieldrin	0	0	0	0.24	0.24	0.24	
alpha-Endosulfan	0	0	0	0.22	0.22	0.22	
beta-Endosulfan	0	0	0	0.22	0.22	0.22	
Endosulfan Sulfate	0	0	0	N/A	N/A	N/A	
Endrin	0	0	0	0.086	0.086	0.087	
Endrin Aldehyde	0	0	0	N/A	N/A	N/A	
Heptachlor	0	0	0	0.52	0.52	0.52	
Heptachlor Epoxide	0	0	0	0.5	0.5	0.5	
Toxaphene	0	0	0	0.73	0.73	0.74	

CFC      CCT (min):       PMF:       Analysis Hardness (mg/l):       Analysis pH:

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	0	N/A	N/A	N/A	
Chloride (PWS)	0	0	0	0	N/A	N/A	N/A	
Sulfate (PWS)	0	0	0	0	N/A	N/A	N/A	
Total Aluminum	0	0	0	0	N/A	N/A	N/A	
Total Antimony	0	0	0	0	220	220	222	
Total Arsenic	0	0	0	0	150	150	151	Chem Translator of 1 applied
Total Barium	0	0	0	0	4,100	4,100	4,137	
Total Boron	0	0	0	0	1,600	1,600	1,614	
Total Cadmium	0	0	0	0	0.453	0.52	0.52	Chem Translator of 0.872 applied
Total Chromium (III)	0	0	0	0	152.193	177	179	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0	0	0	10	10.4	10.5	Chem Translator of 0.962 applied
Total Cobalt	0	0	0	0	19	19.0	19.2	
Total Copper	0	0	0	0	18.973	19.8	19.9	Chem Translator of 0.96 applied
Free Cyanide	0	0	0	0	5.2	5.2	5.25	
Dissolved Iron	0	0	0	0	N/A	N/A	N/A	
Total Iron	0	0	0	0	1,500	1,500	1,513	WQC = 30 day average; PMF = 1
Total Lead	0	0	0	0	6.455	9.74	9.82	Chem Translator of 0.663 applied
Total Manganese	0	0	0	0	N/A	N/A	N/A	
Total Mercury	0	0	0	0	0.770	0.91	0.91	Chem Translator of 0.85 applied
Total Nickel	0	0	0	0	109.358	110	111	Chem Translator of 0.997 applied
Total Phenols (Phenolics) (PWS)	0	0	0	0	N/A	N/A	N/A	
Total Selenium	0	0	0	0	4.600	4.99	5.03	Chem Translator of 0.922 applied
Total Silver	0	0	0	0	N/A	N/A	N/A	Chem Translator of 1 applied
Total Thallium	0	0	0	0	13	13.0	13.1	
Total Zinc	0	0	0	0	248.704	252	254	Chem Translator of 0.986 applied
Acrolein	0	0	0	0	3	3.0	3.03	
Acrylonitrile	0	0	0	0	130	130	131	
Benzene	0	0	0	0	130	130	131	
Bromoform	0	0	0	0	370	370	373	

Carbon Tetrachloride	0	0	0	560	560	565
Chlorobenzene	0	0	0	240	240	242
Chlorodibromomethane	0	0	0	N/A	N/A	N/A
2-Chloroethyl Vinyl Ether	0	0	0	3,500	3,500	3,531
Chloroform	0	0	0	390	390	393
Dichlorobromomethane	0	0	0	N/A	N/A	N/A
1,2-Dichloroethane	0	0	0	3,100	3,100	3,128
1,1-Dichloroethylene	0	0	0	1,500	1,500	1,513
1,2-Dichloropropane	0	0	0	2,200	2,200	2,220
1,3-Dichloropropylene	0	0	0	61	61.0	61.5
Ethylbenzene	0	0	0	580	580	585
Methyl Bromide	0	0	0	110	110	111
Methyl Chloride	0	0	0	5,500	5,500	5,549
Methylene Chloride	0	0	0	2,400	2,400	2,421
1,1,2,2-Tetrachloroethane	0	0	0	210	210	212
Tetrachloroethylene	0	0	0	140	140	141
Toluene	0	0	0	330	330	333
1,2-trans-Dichloroethylene	0	0	0	1,400	1,400	1,413
1,1,1-Trichloroethane	0	0	0	610	610	615
1,1,2-Trichloroethane	0	0	0	680	680	686
Trichloroethylene	0	0	0	450	450	454
Vinyl Chloride	0	0	0	N/A	N/A	N/A
2-Chlorophenol	0	0	0	110	110	111
2,4-Dichlorophenol	0	0	0	340	340	343
2,4-Dimethylphenol	0	0	0	130	130	131
2,4-Dinitrophenol	0	0	0	130	130	131
2-Nitrophenol	0	0	0	1,600	1,600	1,614
4-Nitrophenol	0	0	0	470	470	474
p-Chloro-m-Cresol	0	0	0	500	500	504
Pentachlorophenol	0	0	0	8.164	8.16	8.24
Phenol	0	0	0	N/A	N/A	N/A
2,4,6-Trichlorophenol	0	0	0	91	91.0	91.8
Acenaphthene	0	0	0	17	17.0	17.2
Anthracene	0	0	0	N/A	N/A	N/A
Benzidine	0	0	0	59	59.0	59.5
Benzo(a)Anthracene	0	0	0	0.1	0.1	0.1
Benzo(a)Pyrene	0	0	0	N/A	N/A	N/A
3,4-Benzofluoranthene	0	0	0	N/A	N/A	N/A
Benzo(k)Fluoranthene	0	0	0	N/A	N/A	N/A
Bis(2-Chloroethyl)Ether	0	0	0	6,000	6,000	6,054
Bis(2-Chloroisopropyl)Ether	0	0	0	N/A	N/A	N/A
Bis(2-Ethylhexyl)Phthalate	0	0	0	910	910	918
4-Bromophenyl Phenyl Ether	0	0	0	54	54.0	54.5
Butyl Benzyl Phthalate	0	0	0	35	35.0	35.3
2-Chloronaphthalene	0	0	0	N/A	N/A	N/A

Chrysene	0	0	0	N/A	N/A	N/A
Dibenzo(a,h)Anthracene	0	0	0	N/A	N/A	N/A
1,2-Dichlorobenzene	0	0	0	160	160	161
1,3-Dichlorobenzene	0	0	0	69	69.0	69.6
1,4-Dichlorobenzene	0	0	0	150	150	151
3,3-Dichlorobenzidine	0	0	0	N/A	N/A	N/A
Diethyl Phthalate	0	0	0	800	800	807
Dimethyl Phthalate	0	0	0	500	500	504
Di-n-Butyl Phthalate	0	0	0	21	21.0	21.2
2,4-Dinitrotoluene	0	0	0	320	320	323
2,6-Dinitrotoluene	0	0	0	200	200	202
1,2-Diphenylhydrazine	0	0	0	3	3.0	3.03
Fluoranthene	0	0	0	40	40.0	40.4
Fluorene	0	0	0	N/A	N/A	N/A
Hexachlorobenzene	0	0	0	N/A	N/A	N/A
Hexachlorobutadiene	0	0	0	2	2.0	2.02
Hexachlorocyclopentadiene	0	0	0	1	1.0	1.01
Hexachloroethane	0	0	0	12	12.0	12.1
Indeno(1,2,3-cd)Pyrene	0	0	0	N/A	N/A	N/A
Isophorone	0	0	0	2,100	2,100	2,119
Naphthalene	0	0	0	43	43.0	43.4
Nitrobenzene	0	0	0	810	810	817
n-Nitrosodimethylamine	0	0	0	3,400	3,400	3,430
n-Nitrosodi-n-Propylamine	0	0	0	N/A	N/A	N/A
n-Nitrosodiphenylamine	0	0	0	59	59.0	59.5
Phenanthrene	0	0	0	1	1.0	1.01
Pyrene	0	0	0	N/A	N/A	N/A
1,2,4-Trichlorobenzene	0	0	0	26	26.0	26.2
Aldrin	0	0	0	0.1	0.1	0.1
alpha-BHC	0	0	0	N/A	N/A	N/A
beta-BHC	0	0	0	N/A	N/A	N/A
gamma-BHC	0	0	0	N/A	N/A	N/A
Chlordane	0	0	0	0.0043	0.004	0.004
4,4-DDT	0	0	0	0.001	0.001	0.001
4,4-DDE	0	0	0	0.001	0.001	0.001
4,4-DDD	0	0	0	0.001	0.001	0.001
Dieldrin	0	0	0	0.056	0.056	0.057
alpha-Endosulfan	0	0	0	0.056	0.056	0.057
beta-Endosulfan	0	0	0	0.056	0.056	0.057
Endosulfan Sulfate	0	0	0	N/A	N/A	N/A
Endrin	0	0	0	0.036	0.036	0.036
Endrin Aldehyde	0	0	0	N/A	N/A	N/A
Heptachlor	0	0	0	0.0038	0.004	0.004
Heptachlor Epoxide	0	0	0	0.0038	0.004	0.004
Toxaphene	0	0	0	0.0002	0.0002	0.0002


THH      CCT (min):       PMF:       Analysis Hardness (mg/l):       Analysis pH:

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	N/A	
Chloride (PWS)	0	0		0	250,000	250,000	N/A	
Sulfate (PWS)	0	0		0	250,000	250,000	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	5.6	5.6	5.65	
Total Arsenic	0	0		0	10	10.0	10.1	
Total Barium	0	0		0	2,400	2,400	2,421	
Total Boron	0	0		0	3,100	3,100	3,128	
Total Cadmium	0	0		0	N/A	N/A	N/A	
Total Chromium (III)	0	0		0	N/A	N/A	N/A	
Hexavalent Chromium	0	0		0	N/A	N/A	N/A	
Total Cobalt	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Free Cyanide	0	0		0	4	4.0	4.04	
Dissolved Iron	0	0		0	300	300	303	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	1,000	1,000	1,009	
Total Mercury	0	0		0	0.050	0.05	0.05	
Total Nickel	0	0		0	610	610	615	
Total Phenols (Phenolics) (PWS)	0	0		0	5	5.0	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	
Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	0	0		0	0.24	0.24	0.24	
Total Zinc	0	0		0	N/A	N/A	N/A	
Acrolein	0	0		0	3	3.0	3.03	
Acrylonitrile	0	0		0	N/A	N/A	N/A	
Benzene	0	0		0	N/A	N/A	N/A	
Bromoform	0	0		0	N/A	N/A	N/A	
Carbon Tetrachloride	0	0		0	N/A	N/A	N/A	
Chlorobenzene	0	0		0	100	100.0	101	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	N/A	N/A	N/A	
Chloroform	0	0		0	N/A	N/A	N/A	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	N/A	N/A	N/A	
1,1-Dichloroethylene	0	0		0	33	33.0	33.3	

1,2-Dichloropropane	0	0	0	N/A	N/A	N/A
1,3-Dichloropropylene	0	0	0	N/A	N/A	N/A
Ethylbenzene	0	0	0	68	68.0	68.6
Methyl Bromide	0	0	0	100	100.0	101
Methyl Chloride	0	0	0	N/A	N/A	N/A
Methylene Chloride	0	0	0	N/A	N/A	N/A
1,1,2,2-Tetrachloroethane	0	0	0	N/A	N/A	N/A
Tetrachloroethylene	0	0	0	N/A	N/A	N/A
Toluene	0	0	0	57	57.0	57.5
1,2-trans-Dichloroethylene	0	0	0	100	100.0	101
1,1,1-Trichloroethane	0	0	0	10,000	10,000	10,089
1,1,2-Trichloroethane	0	0	0	N/A	N/A	N/A
Trichloroethylene	0	0	0	N/A	N/A	N/A
Vinyl Chloride	0	0	0	N/A	N/A	N/A
2-Chlorophenol	0	0	0	30	30.0	30.3
2,4-Dichlorophenol	0	0	0	10	10.0	10.1
2,4-Dimethylphenol	0	0	0	100	100.0	101
2,4-Dinitrophenol	0	0	0	10	10.0	10.1
2-Nitrophenol	0	0	0	N/A	N/A	N/A
4-Nitrophenol	0	0	0	N/A	N/A	N/A
p-Chloro-m-Cresol	0	0	0	N/A	N/A	N/A
Pentachlorophenol	0	0	0	N/A	N/A	N/A
Phenol	0	0	0	4,000	4,000	4,036
2,4,6-Trichlorophenol	0	0	0	N/A	N/A	N/A
Acenaphthene	0	0	0	70	70.0	70.6
Anthracene	0	0	0	300	300	303
Benzidine	0	0	0	N/A	N/A	N/A
Benzo(a)Anthracene	0	0	0	N/A	N/A	N/A
Benzo(a)Pyrene	0	0	0	N/A	N/A	N/A
3,4-Benzofluoranthene	0	0	0	N/A	N/A	N/A
Benzo(k)Fluoranthene	0	0	0	N/A	N/A	N/A
Bis(2-Chloroethyl)Ether	0	0	0	N/A	N/A	N/A
Bis(2-Chloroisopropyl)Ether	0	0	0	200	200	202
Bis(2-Ethylhexyl)Phthalate	0	0	0	N/A	N/A	N/A
4-Bromophenyl Phenyl Ether	0	0	0	N/A	N/A	N/A
Butyl Benzyl Phthalate	0	0	0	0.1	0.1	0.1
2-Chloronaphthalene	0	0	0	800	800	807
Chrysene	0	0	0	N/A	N/A	N/A
Dibenzo(a,h)Anthracene	0	0	0	N/A	N/A	N/A
1,2-Dichlorobenzene	0	0	0	1,000	1,000	1,009
1,3-Dichlorobenzene	0	0	0	7	7.0	7.06
1,4-Dichlorobenzene	0	0	0	300	300	303
3,3-Dichlorobenzidine	0	0	0	N/A	N/A	N/A
Diethyl Phthalate	0	0	0	600	600	605
Dimethyl Phthalate	0	0	0	2,000	2,000	2,018

Di-n-Butyl Phthalate	0	0	0	20	20.0	20.2
2,4-Dinitrotoluene	0	0	0	N/A	N/A	N/A
2,6-Dinitrotoluene	0	0	0	N/A	N/A	N/A
1,2-Diphenylhydrazine	0	0	0	N/A	N/A	N/A
Fluoranthene	0	0	0	20	20.0	20.2
Fluorene	0	0	0	50	50.0	50.4
Hexachlorobenzene	0	0	0	N/A	N/A	N/A
Hexachlorobutadiene	0	0	0	N/A	N/A	N/A
Hexachlorocyclopentadiene	0	0	0	4	4.0	4.04
Hexachloroethane	0	0	0	N/A	N/A	N/A
Indeno(1,2,3-cd)Pyrene	0	0	0	N/A	N/A	N/A
Isophorone	0	0	0	34	34.0	34.3
Naphthalene	0	0	0	N/A	N/A	N/A
Nitrobenzene	0	0	0	10	10.0	10.1
n-Nitrosodimethylamine	0	0	0	N/A	N/A	N/A
n-Nitrosodi-n-Propylamine	0	0	0	N/A	N/A	N/A
n-Nitrosodiphenylamine	0	0	0	N/A	N/A	N/A
Phenanthrene	0	0	0	N/A	N/A	N/A
Pyrene	0	0	0	20	20.0	20.2
1,2,4-Trichlorobenzene	0	0	0	0.07	0.07	0.071
Aldrin	0	0	0	N/A	N/A	N/A
alpha-BHC	0	0	0	N/A	N/A	N/A
beta-BHC	0	0	0	N/A	N/A	N/A
gamma-BHC	0	0	0	4.2	4.2	4.24
Chlordane	0	0	0	N/A	N/A	N/A
4,4-DDT	0	0	0	N/A	N/A	N/A
4,4-DDE	0	0	0	N/A	N/A	N/A
4,4-DDD	0	0	0	N/A	N/A	N/A
Dieldrin	0	0	0	N/A	N/A	N/A
alpha-Endosulfan	0	0	0	20	20.0	20.2
beta-Endosulfan	0	0	0	20	20.0	20.2
Endosulfan Sulfate	0	0	0	20	20.0	20.2
Endrin	0	0	0	0.03	0.03	0.03
Endrin Aldehyde	0	0	0	1	1.0	1.01
Heptachlor	0	0	0	N/A	N/A	N/A
Heptachlor Epoxide	0	0	0	N/A	N/A	N/A
Toxaphene	0	0	0	N/A	N/A	N/A

CRL

CCT (min):

PMF:

Analysis Hardness (mg/l):

Analysis pH:

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
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Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A
Chloride (PWS)	0	0		0	N/A	N/A	N/A
Sulfate (PWS)	0	0		0	N/A	N/A	N/A
Total Aluminum	0	0		0	N/A	N/A	N/A
Total Antimony	0	0		0	N/A	N/A	N/A
Total Arsenic	0	0		0	N/A	N/A	N/A
Total Barium	0	0		0	N/A	N/A	N/A
Total Boron	0	0		0	N/A	N/A	N/A
Total Cadmium	0	0		0	N/A	N/A	N/A
Total Chromium (III)	0	0		0	N/A	N/A	N/A
Hexavalent Chromium	0	0		0	N/A	N/A	N/A
Total Cobalt	0	0		0	N/A	N/A	N/A
Total Copper	0	0		0	N/A	N/A	N/A
Free Cyanide	0	0		0	N/A	N/A	N/A
Dissolved Iron	0	0		0	N/A	N/A	N/A
Total Iron	0	0		0	N/A	N/A	N/A
Total Lead	0	0		0	N/A	N/A	N/A
Total Manganese	0	0		0	N/A	N/A	N/A
Total Mercury	0	0		0	N/A	N/A	N/A
Total Nickel	0	0		0	N/A	N/A	N/A
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A
Total Selenium	0	0		0	N/A	N/A	N/A
Total Silver	0	0		0	N/A	N/A	N/A
Total Thallium	0	0		0	N/A	N/A	N/A
Total Zinc	0	0		0	N/A	N/A	N/A
Acrolein	0	0		0	N/A	N/A	N/A
Acrylonitrile	0	0		0	0.06	0.06	0.067
Benzene	0	0		0	0.58	0.58	0.65
Bromoform	0	0		0	7	7.0	7.87
Carbon Tetrachloride	0	0		0	0.4	0.4	0.45
Chlorobenzene	0	0		0	N/A	N/A	N/A
Chlorodibromomethane	0	0		0	0.8	0.8	0.9
2-Chloroethyl Vinyl Ether	0	0		0	N/A	N/A	N/A
Chloroform	0	0		0	5.7	5.7	6.41
Dichlorobromomethane	0	0		0	0.95	0.95	1.07
1,2-Dichloroethane	0	0		0	9.9	9.9	11.1
1,1-Dichloroethylene	0	0		0	N/A	N/A	N/A
1,2-Dichloropropane	0	0		0	0.9	0.9	1.01
1,3-Dichloropropylene	0	0		0	0.27	0.27	0.3
Ethylbenzene	0	0		0	N/A	N/A	N/A
Methyl Bromide	0	0		0	N/A	N/A	N/A
Methyl Chloride	0	0		0	N/A	N/A	N/A
Methylene Chloride	0	0		0	20	20.0	22.5
1,1,2,2-Tetrachloroethane	0	0		0	0.2	0.2	0.22
Tetrachloroethylene	0	0		0	10	10.0	11.2

Toluene	0	0		0	N/A	N/A	N/A
1,2-trans-Dichloroethylene	0	0		0	N/A	N/A	N/A
1,1,1-Trichloroethane	0	0		0	N/A	N/A	N/A
1,1,2-Trichloroethane	0	0		0	0.55	0.55	0.62
Trichloroethylene	0	0		0	0.6	0.6	0.67
Vinyl Chloride	0	0		0	0.02	0.02	0.022
2-Chlorophenol	0	0		0	N/A	N/A	N/A
2,4-Dichlorophenol	0	0		0	N/A	N/A	N/A
2,4-Dimethylphenol	0	0		0	N/A	N/A	N/A
2,4-Dinitrophenol	0	0		0	N/A	N/A	N/A
2-Nitrophenol	0	0		0	N/A	N/A	N/A
4-Nitrophenol	0	0		0	N/A	N/A	N/A
p-Chloro-m-Cresol	0	0		0	N/A	N/A	N/A
Pentachlorophenol	0	0		0	0.030	0.03	0.034
Phenol	0	0		0	N/A	N/A	N/A
2,4,6-Trichlorophenol	0	0		0	1.5	1.5	1.69
Acenaphthene	0	0		0	N/A	N/A	N/A
Anthracene	0	0		0	N/A	N/A	N/A
Benzidine	0	0		0	0.0001	0.0001	0.0001
Benzo(a)Anthracene	0	0		0	0.001	0.001	0.001
Benzo(a)Pyrene	0	0		0	0.0001	0.0001	0.0001
3,4-Benzofluoranthene	0	0		0	0.001	0.001	0.001
Benzo(k)Fluoranthene	0	0		0	0.01	0.01	0.011
Bis(2-Chloroethyl)Ether	0	0		0	0.03	0.03	0.034
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A
Bis(2-Ethylhexyl)Phthalate	0	0		0	0.32	0.32	0.36
4-Bromophenyl Phenyl Ether	0	0		0	N/A	N/A	N/A
Butyl Benzyl Phthalate	0	0		0	N/A	N/A	N/A
2-Chloronaphthalene	0	0		0	N/A	N/A	N/A
Chrysene	0	0		0	0.12	0.12	0.13
Dibenzo(a,h)Anthracene	0	0		0	0.0001	0.0001	0.0001
1,2-Dichlorobenzene	0	0		0	N/A	N/A	N/A
1,3-Dichlorobenzene	0	0		0	N/A	N/A	N/A
1,4-Dichlorobenzene	0	0		0	N/A	N/A	N/A
3,3-Dichlorobenzidine	0	0		0	0.05	0.05	0.056
Diethyl Phthalate	0	0		0	N/A	N/A	N/A
Dimethyl Phthalate	0	0		0	N/A	N/A	N/A
DI-n-Butyl Phthalate	0	0		0	N/A	N/A	N/A
2,4-Dinitrotoluene	0	0		0	0.05	0.05	0.056
2,6-Dinitrotoluene	0	0		0	0.05	0.05	0.056
1,2-Diphenylhydrazine	0	0		0	0.03	0.03	0.034
Fluoranthene	0	0		0	N/A	N/A	N/A
Fluorene	0	0		0	N/A	N/A	N/A
Hexachlorobenzene	0	0		0	0.00008	0.00008	0.00009
Hexachlorobutadiene	0	0		0	0.01	0.01	0.011

Hexachlorocyclopentadiene	0	0		0	N/A	N/A	N/A	
Hexachloroethane	0	0		0	0.1	0.1	0.11	
Indeno(1,2,3-cd)Pyrene	0	0		0	0.001	0.001	0.001	
Isophorone	0	0		0	N/A	N/A	N/A	
Naphthalene	0	0		0	N/A	N/A	N/A	
Nitrobenzene	0	0		0	N/A	N/A	N/A	
n-Nitrosodimethylamine	0	0		0	0.0007	0.0007	0.0008	
n-Nitrosodi-n-Propylamine	0	0		0	0.005	0.005	0.006	
n-Nitrosodiphenylamine	0	0		0	3.3	3.3	3.71	
Phenanthrene	0	0		0	N/A	N/A	N/A	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	N/A	N/A	N/A	
Aldrin	0	0		0	0.0000008	8.00E-07	8.99E-07	
alpha-BHC	0	0		0	0.0004	0.0004	0.0004	
beta-BHC	0	0		0	0.008	0.008	0.009	
gamma-BHC	0	0		0	N/A	N/A	N/A	
Chlordane	0	0		0	0.0003	0.0003	0.0003	
4,4-DDT	0	0		0	0.00003	0.00003	0.00003	
4,4-DDE	0	0		0	0.00002	0.00002	0.00002	
4,4-DDD	0	0		0	0.0001	0.0001	0.0001	
Dieldrin	0	0		0	0.000001	0.000001	0.000001	
alpha-Endosulfan	0	0		0	N/A	N/A	N/A	
beta-Endosulfan	0	0		0	N/A	N/A	N/A	
Endosulfan Sulfate	0	0		0	N/A	N/A	N/A	
Endrin	0	0		0	N/A	N/A	N/A	
Endrin Aldehyde	0	0		0	N/A	N/A	N/A	
Heptachlor	0	0		0	0.000006	0.000006	0.000007	
Heptachlor Epoxide	0	0		0	0.00003	0.00003	0.00003	
Toxaphene	0	0		0	0.0007	0.0007	0.0008	

Recommended WQBELs & Monitoring Requirements

No. Samples/Month: 4

Pollutants	Mass Limits		Concentration Limits				Governing WQBEL	WQBEL Basis	Comments
	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units			
Total Aluminum	Report	Report	Report	Report	Report	µg/L	750	AFC	Discharge Conc > 10% WQBEL (no RP)
Total Antimony	0.024	0.037	5.65	8.81	14.1	µg/L	5.65	THH	Discharge Conc ≥ 50% WQBEL (RP)
Total Arsenic	0.042	0.066	10.1	15.7	25.2	µg/L	10.1	THH	Discharge Conc ≥ 50% WQBEL (RP)
Total Boron	6.73	10.5	1,614	2,519	4,036	µg/L	1,614	CFC	Discharge Conc ≥ 50% WQBEL (RP)
Total Cadmium	0.002	0.003	0.52	0.82	1.31	µg/L	0.52	CFC	Discharge Conc ≥ 50% WQBEL (RP)





Chloroethane	N/A	N/A	No WQS
2-Chloroethyl Vinyl Ether	3,531	µg/L	Discharge Conc < TQL
Chloroform	6.41	µg/L	Discharge Conc ≤ 25% WQBEL
Dichlorobromomethane	1.07	µg/L	Discharge Conc < TQL
1,1-Dichloroethane	N/A	N/A	No WQS
1,2-Dichloroethane	11.1	µg/L	Discharge Conc < TQL
1,1-Dichloroethylene	33.3	µg/L	Discharge Conc < TQL
1,2-Dichloropropane	1.01	µg/L	Discharge Conc < TQL
1,3-Dichloropropylene	0.3	µg/L	Discharge Conc < TQL
1,4-Dioxane	N/A	N/A	No WQS
Ethylbenzene	68.6	µg/L	Discharge Conc < TQL
Methyl Bromide	101	µg/L	Discharge Conc ≤ 25% WQBEL
Methyl Chloride	5,549	µg/L	Discharge Conc < TQL
Methylene Chloride	22.5	µg/L	Discharge Conc < TQL
1,1,2,2-Tetrachloroethane	0.22	µg/L	Discharge Conc < TQL
Tetrachloroethylene	11.2	µg/L	Discharge Conc < TQL
Toluene	57.5	µg/L	Discharge Conc < TQL
1,2-trans-Dichloroethylene	101	µg/L	Discharge Conc < TQL
1,1,1-Trichloroethane	615	µg/L	Discharge Conc < TQL
Trichloroethylene	0.67	µg/L	Discharge Conc < TQL
Vinyl Chloride	0.022	µg/L	Discharge Conc < TQL
2-Chlorophenol	30.3	µg/L	Discharge Conc < TQL
2,4-Dichlorophenol	10.1	µg/L	Discharge Conc < TQL
2,4-Dimethylphenol	101	µg/L	Discharge Conc < TQL
2,4-Dinitrophenol	10.1	µg/L	Discharge Conc < TQL
2-Nitrophenol	1,614	µg/L	Discharge Conc < TQL
4-Nitrophenol	474	µg/L	Discharge Conc < TQL
p-Chloro-m-Cresol	160	µg/L	Discharge Conc ≤ 25% WQBEL
Pentachlorophenol	0.034	µg/L	Discharge Conc < TQL
Phenol	4,036	µg/L	Discharge Conc < TQL
2,4,6-Trichlorophenol	1.69	µg/L	Discharge Conc < TQL
Acenaphthene	17.2	µg/L	Discharge Conc < TQL
Acenaphthylene	N/A	N/A	No WQS
Anthracene	303	µg/L	Discharge Conc < TQL
Benzdine	0.0001	µg/L	Discharge Conc < TQL
Benzo(a)Anthracene	0.001	µg/L	Discharge Conc < TQL
Benzo(a)Pyrene	0.0001	µg/L	Discharge Conc < TQL
3,4-Benzofluoranthene	0.001	µg/L	Discharge Conc < TQL
Benzo(ghi)Perylene	N/A	N/A	No WQS
Benzo(k)Fluoranthene	0.011	µg/L	Discharge Conc < TQL
Bis(2-Chloroethoxy)Methane	N/A	N/A	No WQS
Bis(2-Chloroethyl)Ether	0.034	µg/L	Discharge Conc < TQL
Bis(2-Chloroisopropyl)Ether	202	µg/L	Discharge Conc < TQL
Bis(2-Ethylhexyl)Phthalate	0.36	µg/L	Discharge Conc < TQL
4-Bromophenyl Phenyl Ether	54.5	µg/L	Discharge Conc < TQL

Butyl Benzyl Phthalate	0.1	µg/L	Discharge Conc < TQL
2-Chloronaphthalene	807	µg/L	Discharge Conc < TQL
4-Chlorophenyl Phenyl Ether	N/A	N/A	No WQS
Chrysene	0.13	µg/L	Discharge Conc < TQL
Dibenzo(a,h)Anthracene	0.0001	µg/L	Discharge Conc < TQL
1,2-Dichlorobenzene	161	µg/L	Discharge Conc < TQL
1,3-Dichlorobenzene	7.06	µg/L	Discharge Conc < TQL
1,4-Dichlorobenzene	151	µg/L	Discharge Conc < TQL
3,3-Dichlorobenzidine	0.056	µg/L	Discharge Conc < TQL
Diethyl Phthalate	605	µg/L	Discharge Conc < TQL
Dimethyl Phthalate	504	µg/L	Discharge Conc < TQL
Di-n-Butyl Phthalate	20.2	µg/L	Discharge Conc < TQL
2,4-Dinitrotoluene	0.056	µg/L	Discharge Conc < TQL
2,6-Dinitrotoluene	0.056	µg/L	Discharge Conc < TQL
Di-n-Octyl Phthalate	N/A	N/A	No WQS
1,2-Diphenylhydrazine	0.034	µg/L	Discharge Conc < TQL
Fluoranthene	20.2	µg/L	Discharge Conc < TQL
Fluorene	50.4	µg/L	Discharge Conc < TQL
Hexachlorobenzene	0.00009	µg/L	Discharge Conc < TQL
Hexachlorobutadiene	0.011	µg/L	Discharge Conc < TQL
Hexachlorocyclopentadiene	1.01	µg/L	Discharge Conc < TQL
Hexachloroethane	0.11	µg/L	Discharge Conc < TQL
Indeno(1,2,3-cd)Pyrene	0.001	µg/L	Discharge Conc < TQL
Isophorone	34.3	µg/L	Discharge Conc < TQL
Naphthalene	43.4	µg/L	Discharge Conc < TQL
Nitrobenzene	10.1	µg/L	Discharge Conc < TQL
n-Nitrosodimethylamine	0.0008	µg/L	Discharge Conc < TQL
n-Nitrosodi-n-Propylamine	0.006	µg/L	Discharge Conc < TQL
n-Nitrosodiphenylamine	3.71	µg/L	Discharge Conc < TQL
Phenanthrene	1.01	µg/L	Discharge Conc < TQL
Pyrene	20.2	µg/L	Discharge Conc < TQL
1,2,4-Trichlorobenzene	0.071	µg/L	Discharge Conc < TQL
Aldrin	8.99E-07	µg/L	Discharge Conc < TQL
alpha-BHC	0.0004	µg/L	Discharge Conc < TQL
beta-BHC	0.009	µg/L	Discharge Conc < TQL
gamma-BHC	0.95	µg/L	Discharge Conc < TQL
delta BHC	N/A	N/A	No WQS
Chlordane	0.0003	µg/L	Discharge Conc < TQL
4,4-DDT	0.00003	µg/L	Discharge Conc < TQL
4,4-DDE	0.00002	µg/L	Discharge Conc < TQL
4,4-DDD	0.0001	µg/L	Discharge Conc < TQL
Dieldrin	0.000001	µg/L	Discharge Conc < TQL
alpha-Endosulfan	0.057	µg/L	Discharge Conc < TQL
beta-Endosulfan	0.057	µg/L	Discharge Conc < TQL
Endosulfan Sulfate	20.2	µg/L	Discharge Conc < TQL

Endrin	0.03	µg/L	Discharge Conc < TQL
Endrin Aldehyde	1.01	µg/L	Discharge Conc < TQL
Heptachlor	0.000007	µg/L	Discharge Conc < TQL
Heptachlor Epoxide	0.00003	µg/L	Discharge Conc < TQL

Appendix D – Toxics Management Spreadsheet (TMS) Analysis – Resampling



Toxics Management Spreadsheet  
 Version 1.4, May 2023

## Discharge Information

Instructions Discharge Stream

Facility: SCI Laurel Highlands STP NPDES Permit No.: PA0030406 Outfall No.: 001

Evaluation Type: Major Sewage / Industrial Waste Wastewater Description: Municipal Sewage

Discharge Characteristics								
Design Flow (MGD)*	Hardness (mg/l)*	pH (SU)*	Partial Mix Factors (PMFs)				Complete Mix Times (min)	
			AFC	CFC	THH	CRL	Q <sub>7-10</sub>	Q <sub>h</sub>
0.5	242	7.2						

Discharge Pollutant	Units	Max Discharge Conc	0 if left blank		0.5 if left blank		0 if left blank		1 if left blank		
			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	1660								
	Chloride (PWS)	mg/L	463								
	Bromide	mg/L	< 2								
	Sulfate (PWS)	mg/L	75.2								
	Fluoride (PWS)	mg/L									
Group 2	Total Aluminum	µg/L	77.3								
	Total Antimony	µg/L	2.9								
	Total Arsenic	µg/L	20								
	Total Barium	µg/L	142								
	Total Beryllium	µg/L	< 1								
	Total Boron	µg/L	1470								
	Total Cadmium	µg/L	0.3								
	Total Chromium (III)	µg/L	23.8								
	Hexavalent Chromium	µg/L	< 0.66								
	Total Cobalt	µg/L	8								
	Total Copper	µg/L	0.037								
	Free Cyanide	µg/L	< 0.5								
	Total Cyanide	µg/L	< 22								
	Dissolved Iron	µg/L	250								
	Total Iron	µg/L	390								
	Total Lead	µg/L	< 0.008								
	Total Manganese	µg/L	274								
	Total Mercury	µg/L	< 0.2								
	Total Nickel	µg/L	34.4								
	Total Phenols (Phenolics) (PWS)	µg/L	66								
Total Selenium	µg/L	< 1.3									
Total Silver	µg/L	< 0.2									
Total Thallium	µg/L	6.07									
Total Zinc	µg/L	0.0592									
Total Molybdenum	µg/L	3.7									
Acrolein	µg/L	< 1.96									
Acrylamide	µg/L										
Acrylonitrile	µg/L	< 1									
Benzene	µg/L	< 0.5									
Bromoform	µg/L	< 1									







Stream / Surface Water Information

SCI Laurel Highlands STP, NPDES Permit No. PA0030406, Outfall 001

Instructions Discharge Stream

Receiving Surface Water Name: Trib 39029 of East Branch Coxes Creek No. Reaches to Model: 1

- Statewide Criteria
- Great Lakes Criteria
- ORSANCO Criteria

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi <sup>2</sup> )*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	039029	0.72	2350	0.64	0.0108		Yes
End of Reach 1	039029	0.001	2246	2.67	0.0108		Yes

Q<sub>7-10</sub>

Location	RMI	LFY (cfs/mi <sup>2</sup> )*	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	0.72	0.011	0.00691		10							100	7		
End of Reach 1	0.001	0.014	0.04		10							100	7		

Q<sub>h</sub>

Location	RMI	LFY (cfs/mi <sup>2</sup> )	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	0.72														
End of Reach 1	0.001														



Model Results

SCI Laurel Highlands STP, NPDES Permit No. PA0030406, Outfall 001

Instructions

Results

RETURN TO INPUTS

SAVE AS PDF

PRINT

All

Inputs

Results

Limits

Hydrodynamics

Q<sub>7-10</sub>

RMI	Stream Flow (cfs)	PWS Withdrawal (cfs)	Net Stream Flow (cfs)	Discharge Analysis Flow (cfs)	Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Travel Time (days)	Complete Mix Time (min)
0.72	0.01		0.01	0.774	0.011	0.495	4.949	10.	0.215	0.204	0.00007
0.001	0.04		0.04					10.000			

Q<sub>h</sub>

RMI	Stream Flow (cfs)	PWS Withdrawal (cfs)	Net Stream Flow (cfs)	Discharge Analysis Flow (cfs)	Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Travel Time (days)	Complete Mix Time (min)
0.72	0.10		0.10	0.774	0.011	0.519	4.949	9.535	0.228	0.192	0.011
0.001	0.448		0.45								

Wasteload Allocations

AFC

CCT (min): 0.000

PMF: 1

Analysis Hardness (mg/l): 240.74

Analysis pH: 7.20

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	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	750	750	757	
Total Antimony	0	0		0	1,100	1,100	1,110	
Total Arsenic	0	0		0	340	340	343	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	21,188	
Total Boron	0	0		0	8,100	8,100	8,172	
Total Cadmium	0	0		0	4.728	5.21	5.26	Chem Translator of 0.907 applied
Total Chromium (III)	0	0		0	1170.002	3,703	3,736	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	16.4	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	95.8	
Total Copper	0	0		0	30.752	32.0	32.3	Chem Translator of 0.96 applied
Free Cyanide	0	0		0	22	22.0	22.2	

Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	165.635	250	252	Chem Translator of 0.663 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	1.66	Chem Translator of 0.85 applied
Total Nickel	0	0		0	984.597	987	995	Chem Translator of 0.998 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	Chem Translator of 0.922 applied
Total Silver	0	0		0	14.578	17.2	17.3	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	65.6	
Total Zinc	0	0		0	246.686	252	254	Chem Translator of 0.978 applied
Acrolein	0	0		0	3	3.0	3.03	
Acrylonitrile	0	0		0	650	650	656	
Benzene	0	0		0	640	640	646	
Bromoform	0	0		0	1,800	1,800	1,816	
Carbon Tetrachloride	0	0		0	2,800	2,800	2,825	
Chlorobenzene	0	0		0	1,200	1,200	1,211	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	18,000	18,000	18,161	
Chloroform	0	0		0	1,900	1,900	1,917	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	15,000	15,000	15,134	
1,1-Dichloroethylene	0	0		0	7,500	7,500	7,567	
1,2-Dichloropropane	0	0		0	11,000	11,000	11,098	
1,3-Dichloropropylene	0	0		0	310	310	313	
Ethylbenzene	0	0		0	2,900	2,900	2,926	
Methyl Bromide	0	0		0	550	550	555	
Methyl Chloride	0	0		0	28,000	28,000	28,250	
Methylene Chloride	0	0		0	12,000	12,000	12,107	
1,1,2,2-Tetrachloroethane	0	0		0	1,000	1,000	1,009	
Tetrachloroethylene	0	0		0	700	700	706	
Toluene	0	0		0	1,700	1,700	1,715	
1,2-trans-Dichloroethylene	0	0		0	6,800	6,800	6,861	
1,1,1-Trichloroethane	0	0		0	3,000	3,000	3,027	
1,1,2-Trichloroethane	0	0		0	3,400	3,400	3,430	
Trichloroethylene	0	0		0	2,300	2,300	2,321	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	560	560	565	
2,4-Dichlorophenol	0	0		0	1,700	1,700	1,715	
2,4-Dimethylphenol	0	0		0	660	660	666	
2,4-Dinitrophenol	0	0		0	660	660	666	
2-Nitrophenol	0	0		0	8,000	8,000	8,071	
4-Nitrophenol	0	0		0	2,300	2,300	2,321	
p-Chloro-m-Cresol	0	0		0	160	160	161	
Pentachlorophenol	0	0		0	10.641	10.6	10.7	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	460	460	464	
Acenaphthene	0	0		0	83	83.0	83.7	

Anthracene	0	0		0	N/A	N/A	N/A
Benzidine	0	0		0	300	300	303
Benzo(a)Anthracene	0	0		0	0.5	0.5	0.5
Benzo(a)Pyrene	0	0		0	N/A	N/A	N/A
3,4-Benzofluoranthene	0	0		0	N/A	N/A	N/A
Benzo(k)Fluoranthene	0	0		0	N/A	N/A	N/A
Bis(2-Chloroethyl)Ether	0	0		0	30,000	30,000	30,268
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A
Bis(2-Ethylhexyl)Phthalate	0	0		0	4,500	4,500	4,540
4-Bromophenyl Phenyl Ether	0	0		0	270	270	272
Butyl Benzyl Phthalate	0	0		0	140	140	141
2-Chloronaphthalene	0	0		0	N/A	N/A	N/A
Chrysene	0	0		0	N/A	N/A	N/A
Dibenzo(a,h)Anthracene	0	0		0	N/A	N/A	N/A
1,2-Dichlorobenzene	0	0		0	820	820	827
1,3-Dichlorobenzene	0	0		0	350	350	353
1,4-Dichlorobenzene	0	0		0	730	730	737
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A
Diethyl Phthalate	0	0		0	4,000	4,000	4,038
Dimethyl Phthalate	0	0		0	2,500	2,500	2,522
Di-n-Butyl Phthalate	0	0		0	110	110	111
2,4-Dinitrotoluene	0	0		0	1,600	1,600	1,614
2,6-Dinitrotoluene	0	0		0	990	990	999
1,2-Diphenylhydrazine	0	0		0	15	15.0	15.1
Fluoranthene	0	0		0	200	200	202
Fluorene	0	0		0	N/A	N/A	N/A
Hexachlorobenzene	0	0		0	N/A	N/A	N/A
Hexachlorobutadiene	0	0		0	10	10.0	10.1
Hexachlorocyclopentadiene	0	0		0	5	5.0	5.04
Hexachloroethane	0	0		0	60	60.0	60.5
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A
Isophorone	0	0		0	10,000	10,000	10,089
Naphthalene	0	0		0	140	140	141
Nitrobenzene	0	0		0	4,000	4,000	4,038
n-Nitrosodimethylamine	0	0		0	17,000	17,000	17,152
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A
n-Nitrosodiphenylamine	0	0		0	300	300	303
Phenanthrene	0	0		0	5	5.0	5.04
Pyrene	0	0		0	N/A	N/A	N/A
1,2,4-Trichlorobenzene	0	0		0	130	130	131
Aldrin	0	0		0	3	3.0	3.03
alpha-BHC	0	0		0	N/A	N/A	N/A
beta-BHC	0	0		0	N/A	N/A	N/A
gamma-BHC	0	0		0	0.95	0.95	0.98
Chlordane	0	0		0	2.4	2.4	2.42
4,4-DDT	0	0		0	1.1	1.1	1.11
4,4-DDE	0	0		0	1.1	1.1	1.11
4,4-DDD	0	0		0	1.1	1.1	1.11

Dieldrin	0	0		0	0.24	0.24	0.24	
alpha-Endosulfan	0	0		0	0.22	0.22	0.22	
beta-Endosulfan	0	0		0	0.22	0.22	0.22	
Endosulfan Sulfate	0	0		0	N/A	N/A	N/A	
Endrin	0	0		0	0.086	0.086	0.087	
Endrin Aldehyde	0	0		0	N/A	N/A	N/A	
Heptachlor	0	0		0	0.52	0.52	0.52	
Heptachlor Epoxide	0	0		0	0.5	0.5	0.5	
Toxaphene	0	0		0	0.73	0.73	0.74	

CFC      CCT (min): 0.000      PMF: 1      Analysis Hardness (mg/l): 240.74      Analysis pH: 7.20

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	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	220	220	222	
Total Arsenic	0	0		0	150	150	151	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	4,137	
Total Boron	0	0		0	1,600	1,600	1,614	
Total Cadmium	0	0		0	0.453	0.52	0.52	Chem Translator of 0.872 applied
Total Chromium (III)	0	0		0	152.193	177	179	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	10.5	Chem Translator of 0.962 applied
Total Cobalt	0	0		0	19	19.0	19.2	
Total Copper	0	0		0	18.973	19.8	19.9	Chem Translator of 0.96 applied
Free Cyanide	0	0		0	5.2	5.2	5.25	
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	1,500	1,500	1,513	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	8.455	9.74	9.82	Chem Translator of 0.663 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	0.91	Chem Translator of 0.85 applied
Total Nickel	0	0		0	109.358	110	111	Chem Translator of 0.997 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	4.600	4.99	5.03	Chem Translator of 0.922 applied
Total Silver	0	0		0	N/A	N/A	N/A	Chem Translator of 1 applied
Total Thallium	0	0		0	13	13.0	13.1	
Total Zinc	0	0		0	248.704	252	254	Chem Translator of 0.986 applied
Acrolein	0	0		0	3	3.0	3.03	
Acrylonitrile	0	0		0	130	130	131	
Benzene	0	0		0	130	130	131	
Bromoform	0	0		0	370	370	373	
Carbon Tetrachloride	0	0		0	560	560	565	
Chlorobenzene	0	0		0	240	240	242	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	

2-Chloroethyl Vinyl Ether	0	0		0	3,500	3,500	3,531
Chloroform	0	0		0	390	390	393
Dichlorobromomethane	0	0		0	N/A	N/A	N/A
1,2-Dichloroethane	0	0		0	3,100	3,100	3,128
1,1-Dichloroethylene	0	0		0	1,500	1,500	1,513
1,2-Dichloropropane	0	0		0	2,200	2,200	2,220
1,3-Dichloropropylene	0	0		0	61	61.0	61.5
Ethylbenzene	0	0		0	580	580	585
Methyl Bromide	0	0		0	110	110	111
Methyl Chloride	0	0		0	5,500	5,500	5,549
Methylene Chloride	0	0		0	2,400	2,400	2,421
1,1,2,2-Tetrachloroethane	0	0		0	210	210	212
Tetrachloroethylene	0	0		0	140	140	141
Toluene	0	0		0	330	330	333
1,2-trans-Dichloroethylene	0	0		0	1,400	1,400	1,413
1,1,1-Trichloroethane	0	0		0	610	610	615
1,1,1,2-Trichloroethane	0	0		0	680	680	686
Trichloroethylene	0	0		0	450	450	454
Vinyl Chloride	0	0		0	N/A	N/A	N/A
2-Chlorophenol	0	0		0	110	110	111
2,4-Dichlorophenol	0	0		0	340	340	343
2,4-Dimethylphenol	0	0		0	130	130	131
2,4-Dinitrophenol	0	0		0	130	130	131
2-Nitrophenol	0	0		0	1,600	1,600	1,614
4-Nitrophenol	0	0		0	470	470	474
p-Chloro-m-Cresol	0	0		0	500	500	504
Pentachlorophenol	0	0		0	8.164	8.16	8.24
Phenol	0	0		0	N/A	N/A	N/A
2,4,6-Trichlorophenol	0	0		0	91	91.0	91.8
Acenaphthene	0	0		0	17	17.0	17.2
Anthracene	0	0		0	N/A	N/A	N/A
Benzidine	0	0		0	59	59.0	59.5
Benzo(a)Anthracene	0	0		0	0.1	0.1	0.1
Benzo(a)Pyrene	0	0		0	N/A	N/A	N/A
3,4-Benzofluoranthene	0	0		0	N/A	N/A	N/A
Benzo(k)Fluoranthene	0	0		0	N/A	N/A	N/A
Bis(2-Chloroethyl)Ether	0	0		0	6,000	6,000	6,054
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A
Bis(2-Ethylhexyl)Phthalate	0	0		0	910	910	918
4-Bromophenyl Phenyl Ether	0	0		0	54	54.0	54.5
Butyl Benzyl Phthalate	0	0		0	35	35.0	35.3
2-Chloronaphthalene	0	0		0	N/A	N/A	N/A
Chrysene	0	0		0	N/A	N/A	N/A
Dibenzo(a,h)Anthracene	0	0		0	N/A	N/A	N/A
1,2-Dichlorobenzene	0	0		0	160	160	161

1,3-Dichlorobenzene	0	0		0	69	69.0	69.6
1,4-Dichlorobenzene	0	0		0	150	150	151
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A
Diethyl Phthalate	0	0		0	800	800	807
Dimethyl Phthalate	0	0		0	500	500	504
Di-n-Butyl Phthalate	0	0		0	21	21.0	21.2
2,4-Dinitrotoluene	0	0		0	320	320	323
2,6-Dinitrotoluene	0	0		0	200	200	202
1,2-Diphenylhydrazine	0	0		0	3	3.0	3.03
Fluoranthene	0	0		0	40	40.0	40.4
Fluorene	0	0		0	N/A	N/A	N/A
Hexachlorobenzene	0	0		0	N/A	N/A	N/A
Hexachlorobutadiene	0	0		0	2	2.0	2.02
Hexachlorocyclopentadiene	0	0		0	1	1.0	1.01
Hexachloroethane	0	0		0	12	12.0	12.1
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A
Isophorone	0	0		0	2,100	2,100	2,119
Naphthalene	0	0		0	43	43.0	43.4
Nitrobenzene	0	0		0	810	810	817
n-Nitrosodimethylamine	0	0		0	3,400	3,400	3,430
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A
n-Nitrosodiphenylamine	0	0		0	59	59.0	59.5
Phenanthrene	0	0		0	1	1.0	1.01
Pyrene	0	0		0	N/A	N/A	N/A
1,2,4-Trichlorobenzene	0	0		0	26	26.0	26.2
Aldrin	0	0		0	0.1	0.1	0.1
alpha-BHC	0	0		0	N/A	N/A	N/A
beta-BHC	0	0		0	N/A	N/A	N/A
gamma-BHC	0	0		0	N/A	N/A	N/A
Chlordane	0	0		0	0.0043	0.004	0.004
4,4-DDT	0	0		0	0.001	0.001	0.001
4,4-DDE	0	0		0	0.001	0.001	0.001
4,4-DDD	0	0		0	0.001	0.001	0.001
Dieldrin	0	0		0	0.056	0.056	0.057
alpha-Endosulfan	0	0		0	0.056	0.056	0.057
beta-Endosulfan	0	0		0	0.056	0.056	0.057
Endosulfan Sulfate	0	0		0	N/A	N/A	N/A
Endrin	0	0		0	0.036	0.036	0.036
Endrin Aldehyde	0	0		0	N/A	N/A	N/A
Heptachlor	0	0		0	0.0038	0.004	0.004
Heptachlor Epoxide	0	0		0	0.0038	0.004	0.004
Toxaphene	0	0		0	0.0002	0.0002	0.0002

THH

CCT (min):

PMF:

Analysis Hardness (mg/l):

Analysis pH:

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	N/A	
Chloride (PWS)	0	0		0	250,000	250,000	N/A	
Sulfate (PWS)	0	0		0	250,000	250,000	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	5.6	5.6	5.65	
Total Arsenic	0	0		0	10	10.0	10.1	
Total Barium	0	0		0	2,400	2,400	2,421	
Total Boron	0	0		0	3,100	3,100	3,128	
Total Cadmium	0	0		0	N/A	N/A	N/A	
Total Chromium (III)	0	0		0	N/A	N/A	N/A	
Hexavalent Chromium	0	0		0	N/A	N/A	N/A	
Total Cobalt	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Free Cyanide	0	0		0	4	4.0	4.04	
Dissolved Iron	0	0		0	300	300	303	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	1,000	1,000	1,009	
Total Mercury	0	0		0	0.050	0.05	0.05	
Total Nickel	0	0		0	610	610	615	
Total Phenols (Phenolics) (PWS)	0	0		0	5	5.0	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	
Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	0	0		0	0.24	0.24	0.24	
Total Zinc	0	0		0	N/A	N/A	N/A	
Acrolein	0	0		0	3	3.0	3.03	
Acrylonitrile	0	0		0	N/A	N/A	N/A	
Benzene	0	0		0	N/A	N/A	N/A	
Bromoform	0	0		0	N/A	N/A	N/A	
Carbon Tetrachloride	0	0		0	N/A	N/A	N/A	
Chlorobenzene	0	0		0	100	100.0	101	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	N/A	N/A	N/A	
Chloroform	0	0		0	5.7	5.7	5.75	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	N/A	N/A	N/A	
1,1-Dichloroethylene	0	0		0	33	33.0	33.3	
1,2-Dichloropropane	0	0		0	N/A	N/A	N/A	
1,3-Dichloropropylene	0	0		0	N/A	N/A	N/A	
Ethylbenzene	0	0		0	68	68.0	68.6	
Methyl Bromide	0	0		0	100	100.0	101	
Methyl Chloride	0	0		0	N/A	N/A	N/A	
Methylene Chloride	0	0		0	N/A	N/A	N/A	

1,1,2,2-Tetrachloroethane	0	0		0	N/A	N/A	N/A
Tetrachloroethylene	0	0		0	N/A	N/A	N/A
Toluene	0	0		0	57	57.0	57.5
1,2-trans-Dichloroethylene	0	0		0	100	100.0	101
1,1,1-Trichloroethane	0	0		0	10,000	10,000	10,089
1,1,2-Trichloroethane	0	0		0	N/A	N/A	N/A
Trichloroethylene	0	0		0	N/A	N/A	N/A
Vinyl Chloride	0	0		0	N/A	N/A	N/A
2-Chlorophenol	0	0		0	30	30.0	30.3
2,4-Dichlorophenol	0	0		0	10	10.0	10.1
2,4-Dimethylphenol	0	0		0	100	100.0	101
2,4-Dinitrophenol	0	0		0	10	10.0	10.1
2-Nitrophenol	0	0		0	N/A	N/A	N/A
4-Nitrophenol	0	0		0	N/A	N/A	N/A
p-Chloro-m-Cresol	0	0		0	N/A	N/A	N/A
Pentachlorophenol	0	0		0	N/A	N/A	N/A
Phenol	0	0		0	4,000	4,000	4,036
2,4,6-Trichlorophenol	0	0		0	N/A	N/A	N/A
Acenaphthene	0	0		0	70	70.0	70.6
Anthracene	0	0		0	300	300	303
Benzidine	0	0		0	N/A	N/A	N/A
Benzo(a)Anthracene	0	0		0	N/A	N/A	N/A
Benzo(a)Pyrene	0	0		0	N/A	N/A	N/A
3,4-Benzofluoranthene	0	0		0	N/A	N/A	N/A
Benzo(k)Fluoranthene	0	0		0	N/A	N/A	N/A
Bis(2-Chloroethyl)Ether	0	0		0	N/A	N/A	N/A
Bis(2-Chloroisopropyl)Ether	0	0		0	200	200	202
Bis(2-Ethylhexyl)Phthalate	0	0		0	N/A	N/A	N/A
4-Bromophenyl Phenyl Ether	0	0		0	N/A	N/A	N/A
Butyl Benzyl Phthalate	0	0		0	0.1	0.1	0.1
2-Chloronaphthalene	0	0		0	800	800	807
Chrysene	0	0		0	N/A	N/A	N/A
Dibenzo(a,h)Anthracene	0	0		0	N/A	N/A	N/A
1,2-Dichlorobenzene	0	0		0	1,000	1,000	1,009
1,3-Dichlorobenzene	0	0		0	7	7.0	7.06
1,4-Dichlorobenzene	0	0		0	300	300	303
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A
Diethyl Phthalate	0	0		0	600	600	605
Dimethyl Phthalate	0	0		0	2,000	2,000	2,018
Di-n-Butyl Phthalate	0	0		0	20	20.0	20.2
2,4-Dinitrotoluene	0	0		0	N/A	N/A	N/A
2,6-Dinitrotoluene	0	0		0	N/A	N/A	N/A
1,2-Diphenylhydrazine	0	0		0	N/A	N/A	N/A
Fluoranthene	0	0		0	20	20.0	20.2
Fluorene	0	0		0	50	50.0	50.4

Hexachlorobenzene	0	0		0	N/A	N/A	N/A	
Hexachlorobutadiene	0	0		0	N/A	N/A	N/A	
Hexachlorocyclopentadiene	0	0		0	4	4.0	4.04	
Hexachloroethane	0	0		0	N/A	N/A	N/A	
Indeno(1,2,3-cd)Fyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	34	34.0	34.3	
Naphthalene	0	0		0	N/A	N/A	N/A	
Nitrobenzene	0	0		0	10	10.0	10.1	
n-Nitrosodimethylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	N/A	N/A	N/A	
Phenanthrene	0	0		0	N/A	N/A	N/A	
Pyrene	0	0		0	20	20.0	20.2	
1,2,4-Trichlorobenzene	0	0		0	0.07	0.07	0.071	
Aldrin	0	0		0	N/A	N/A	N/A	
alpha-BHC	0	0		0	N/A	N/A	N/A	
beta-BHC	0	0		0	N/A	N/A	N/A	
gamma-BHC	0	0		0	4.2	4.2	4.24	
Chlordane	0	0		0	N/A	N/A	N/A	
4,4-DDT	0	0		0	N/A	N/A	N/A	
4,4-DDE	0	0		0	N/A	N/A	N/A	
4,4-DDD	0	0		0	N/A	N/A	N/A	
Dieldrin	0	0		0	N/A	N/A	N/A	
alpha-Endosulfan	0	0		0	20	20.0	20.2	
beta-Endosulfan	0	0		0	20	20.0	20.2	
Endosulfan Sulfate	0	0		0	20	20.0	20.2	
Endrin	0	0		0	0.03	0.03	0.03	
Endrin Aldehyde	0	0		0	1	1.0	1.01	
Heptachlor	0	0		0	N/A	N/A	N/A	
Heptachlor Epoxide	0	0		0	N/A	N/A	N/A	
Toxaphene	0	0		0	N/A	N/A	N/A	

CRL      CCT (min):       PMF:       Analysis Hardness (mg/l):       Analysis pH:

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	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	N/A	N/A	N/A	
Total Arsenic	0	0		0	N/A	N/A	N/A	
Total Barium	0	0		0	N/A	N/A	N/A	
Total Boron	0	0		0	N/A	N/A	N/A	
Total Cadmium	0	0		0	N/A	N/A	N/A	

Total Chromium (III)	0	0		0	N/A	N/A	N/A
Hexavalent Chromium	0	0		0	N/A	N/A	N/A
Total Cobalt	0	0		0	N/A	N/A	N/A
Total Copper	0	0		0	N/A	N/A	N/A
Free Cyanide	0	0		0	N/A	N/A	N/A
Dissolved Iron	0	0		0	N/A	N/A	N/A
Total Iron	0	0		0	N/A	N/A	N/A
Total Lead	0	0		0	N/A	N/A	N/A
Total Manganese	0	0		0	N/A	N/A	N/A
Total Mercury	0	0		0	N/A	N/A	N/A
Total Nickel	0	0		0	N/A	N/A	N/A
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A
Total Selenium	0	0		0	N/A	N/A	N/A
Total Silver	0	0		0	N/A	N/A	N/A
Total Thallium	0	0		0	N/A	N/A	N/A
Total Zinc	0	0		0	N/A	N/A	N/A
Acrolein	0	0		0	N/A	N/A	N/A
Acrylonitrile	0	0		0	0.06	0.06	0.067
Benzene	0	0		0	0.58	0.58	0.65
Bromoform	0	0		0	7	7.0	7.87
Carbon Tetrachloride	0	0		0	0.4	0.4	0.45
Chlorobenzene	0	0		0	N/A	N/A	N/A
Chlorodibromomethane	0	0		0	0.8	0.8	0.9
2-Chloroethyl Vinyl Ether	0	0		0	N/A	N/A	N/A
Chloroform	0	0		0	N/A	N/A	N/A
Dichlorobromomethane	0	0		0	0.95	0.95	1.07
1,2-Dichloroethane	0	0		0	9.9	9.9	11.1
1,1-Dichloroethylene	0	0		0	N/A	N/A	N/A
1,2-Dichloropropane	0	0		0	0.9	0.9	1.01
1,3-Dichloropropylene	0	0		0	0.27	0.27	0.3
Ethylbenzene	0	0		0	N/A	N/A	N/A
Methyl Bromide	0	0		0	N/A	N/A	N/A
Methyl Chloride	0	0		0	N/A	N/A	N/A
Methylene Chloride	0	0		0	20	20.0	22.5
1,1,2,2-Tetrachloroethane	0	0		0	0.2	0.2	0.22
Tetrachloroethylene	0	0		0	10	10.0	11.2
Toluene	0	0		0	N/A	N/A	N/A
1,2-trans-Dichloroethylene	0	0		0	N/A	N/A	N/A
1,1,1-Trichloroethane	0	0		0	N/A	N/A	N/A
1,1,2-Trichloroethane	0	0		0	0.55	0.55	0.62
Trichloroethylene	0	0		0	0.6	0.6	0.67
Vinyl Chloride	0	0		0	0.02	0.02	0.022
2-Chlorophenol	0	0		0	N/A	N/A	N/A
2,4-Dichlorophenol	0	0		0	N/A	N/A	N/A
2,4-Dimethylphenol	0	0		0	N/A	N/A	N/A

2,4-Dinitrophenol	0	0		0	N/A	N/A	N/A
2-Nitrophenol	0	0		0	N/A	N/A	N/A
4-Nitrophenol	0	0		0	N/A	N/A	N/A
p-Chloro-m-Cresol	0	0		0	N/A	N/A	N/A
Pentachlorophenol	0	0		0	0.030	0.03	0.034
Phenol	0	0		0	N/A	N/A	N/A
2,4,6-Trichlorophenol	0	0		0	1.5	1.5	1.69
Acenaphthene	0	0		0	N/A	N/A	N/A
Anthracene	0	0		0	N/A	N/A	N/A
Benzdine	0	0		0	0.0001	0.0001	0.0001
Benzo(a)Anthracene	0	0		0	0.001	0.001	0.001
Benzo(a)Pyrene	0	0		0	0.0001	0.0001	0.0001
3,4-Benzofluoranthene	0	0		0	0.001	0.001	0.001
Benzo(k)Fluoranthene	0	0		0	0.01	0.01	0.011
Bis(2-Chloroethyl)Ether	0	0		0	0.03	0.03	0.034
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A
Bis(2-Ethylhexyl)Phthalate	0	0		0	0.32	0.32	0.36
4-Bromophenyl Phenyl Ether	0	0		0	N/A	N/A	N/A
Butyl Benzyl Phthalate	0	0		0	N/A	N/A	N/A
2-Chloronaphthalene	0	0		0	N/A	N/A	N/A
Chrysene	0	0		0	0.12	0.12	0.13
Dibenzo(a,h)Anthracene	0	0		0	0.0001	0.0001	0.0001
1,2-Dichlorobenzene	0	0		0	N/A	N/A	N/A
1,3-Dichlorobenzene	0	0		0	N/A	N/A	N/A
1,4-Dichlorobenzene	0	0		0	N/A	N/A	N/A
3,3-Dichlorobenzidine	0	0		0	0.05	0.05	0.056
Diethyl Phthalate	0	0		0	N/A	N/A	N/A
Dimethyl Phthalate	0	0		0	N/A	N/A	N/A
Di-n-Butyl Phthalate	0	0		0	N/A	N/A	N/A
2,4-Dinitrotoluene	0	0		0	0.05	0.05	0.056
2,6-Dinitrotoluene	0	0		0	0.05	0.05	0.056
1,2-Diphenylhydrazine	0	0		0	0.03	0.03	0.034
Fluoranthene	0	0		0	N/A	N/A	N/A
Fluorene	0	0		0	N/A	N/A	N/A
Hexachlorobenzene	0	0		0	0.00008	0.00008	0.00009
Hexachlorobutadiene	0	0		0	0.01	0.01	0.011
Hexachlorocyclopentadiene	0	0		0	N/A	N/A	N/A
Hexachloroethane	0	0		0	0.1	0.1	0.11
Indeno(1,2,3-cd)Pyrene	0	0		0	0.001	0.001	0.001
Isophorone	0	0		0	N/A	N/A	N/A
Naphthalene	0	0		0	N/A	N/A	N/A
Nitrobenzene	0	0		0	N/A	N/A	N/A
n-Nitrosodimethylamine	0	0		0	0.0007	0.0007	0.0008
n-Nitrosodi-n-Propylamine	0	0		0	0.005	0.005	0.006
n-Nitrosodiphenylamine	0	0		0	3.3	3.3	3.71

Phenanthrene	0	0		0	N/A	N/A	N/A	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	N/A	N/A	N/A	
Aldrin	0	0		0	0.0000008	8.00E-07	8.99E-07	
alpha-BHC	0	0		0	0.0004	0.0004	0.0004	
beta-BHC	0	0		0	0.008	0.008	0.009	
gamma-BHC	0	0		0	N/A	N/A	N/A	
Chlordane	0	0		0	0.0003	0.0003	0.0003	
4,4-DDT	0	0		0	0.00003	0.00003	0.00003	
4,4-DDE	0	0		0	0.00002	0.00002	0.00002	
4,4-DDD	0	0		0	0.0001	0.0001	0.0001	
Dieldrin	0	0		0	0.000001	0.000001	0.000001	
alpha-Endosulfan	0	0		0	N/A	N/A	N/A	
beta-Endosulfan	0	0		0	N/A	N/A	N/A	
Endosulfan Sulfate	0	0		0	N/A	N/A	N/A	
Endrin	0	0		0	N/A	N/A	N/A	
Endrin Aldehyde	0	0		0	N/A	N/A	N/A	
Heptachlor	0	0		0	0.000008	0.000008	0.000007	
Heptachlor Epoxide	0	0		0	0.00003	0.00003	0.00003	
Toxaphene	0	0		0	0.0007	0.0007	0.0008	

Recommended WQBELs & Monitoring Requirements

No. Samples/Month: **4**

Pollutants	Mass Limits		Concentration Limits				Governing WQBEL	WQBEL Basis	Comments
	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units			
Total Aluminum	Report	Report	Report	Report	Report	µg/L	750	AFC	Discharge Conc > 10% WQBEL (no RP)
Total Antimony	0.024	0.037	5.65	8.81	14.1	µg/L	5.65	THH	Discharge Conc ≥ 50% WQBEL (RP)
Total Arsenic	0.042	0.066	10.1	15.7	25.2	µg/L	10.1	THH	Discharge Conc ≥ 50% WQBEL (RP)
Total Boron	6.73	10.5	1,614	2,519	4,036	µg/L	1,614	CFC	Discharge Conc ≥ 50% WQBEL (RP)
Total Cadmium	0.002	0.003	0.52	0.82	1.31	µg/L	0.52	CFC	Discharge Conc ≥ 50% WQBEL (RP)
Total Chromium (III)	Report	Report	Report	Report	Report	µg/L	179	CFC	Discharge Conc > 10% WQBEL (no RP)
Total Cobalt	Report	Report	Report	Report	Report	µg/L	19.2	CFC	Discharge Conc > 10% WQBEL (no RP)
Dissolved Iron	1.26	1.97	303	472	757	µg/L	303	THH	Discharge Conc ≥ 50% WQBEL (RP)
Total Iron	Report	Report	Report	Report	Report	µg/L	1,513	CFC	Discharge Conc > 10% WQBEL (no RP)
Total Manganese	Report	Report	Report	Report	Report	µg/L	1,009	THH	Discharge Conc > 10% WQBEL (no RP)
Total Nickel	Report	Report	Report	Report	Report	µg/L	111	CFC	Discharge Conc > 10% WQBEL (no RP)
Total Thallium	0.001	0.002	0.24	0.38	0.61	µg/L	0.24	THH	Discharge Conc ≥ 50% WQBEL (RP)

**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)	N/A	N/A	PWS Not Applicable
Chloride (PWS)	N/A	N/A	PWS Not Applicable
Bromide	N/A	N/A	No WQS
Sulfate (PWS)	N/A	N/A	PWS Not Applicable
Total Barium	2,421	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Hexavalent Chromium	N/A	N/A	Discharge Conc < TQL
Total Copper	19.9	µg/L	Discharge Conc ≤ 10% WQBEL
Free Cyanide	4.04	µg/L	Discharge Conc < TQL
Total Cyanide	N/A	N/A	No WQS
Total Lead	9.82	µg/L	Discharge Conc < TQL
Total Mercury	0.05	µg/L	Discharge Conc < TQL
Total Phenols (Phenolics) (PWS)		µg/L	PWS Not Applicable
Total Selenium	5.03	µg/L	Discharge Conc < TQL
Total Silver	17.2	µg/L	Discharge Conc < TQL
Total Zinc	252	µg/L	Discharge Conc ≤ 10% WQBEL
Total Molybdenum	N/A	N/A	No WQS
Acrolein	3.0	µg/L	Discharge Conc < TQL
Acrylonitrile	0.067	µg/L	Discharge Conc < TQL
Benzene	0.65	µg/L	Discharge Conc < TQL
Bromoform	7.87	µg/L	Discharge Conc ≤ 25% WQBEL
Carbon Tetrachloride	0.45	µg/L	Discharge Conc < TQL
Chlorobenzene	101	µg/L	Discharge Conc < TQL
Chlorodibromomethane	0.9	µg/L	Discharge Conc < TQL
Chloroethane	N/A	N/A	No WQS
2-Chloroethyl Vinyl Ether	3,531	µg/L	Discharge Conc < TQL
Chloroform	5.75	µg/L	Discharge Conc ≤ 25% WQBEL
Dichlorobromomethane	1.07	µg/L	Discharge Conc < TQL
1,1-Dichloroethane	N/A	N/A	No WQS
1,2-Dichloroethane	11.1	µg/L	Discharge Conc < TQL
1,1-Dichloroethylene	33.3	µg/L	Discharge Conc < TQL
1,2-Dichloropropane	1.01	µg/L	Discharge Conc < TQL
1,3-Dichloropropylene	0.3	µg/L	Discharge Conc < TQL
1,4-Dioxane	N/A	N/A	No WQS
Ethylbenzene	68.6	µg/L	Discharge Conc < TQL
Methyl Bromide	101	µg/L	Discharge Conc ≤ 25% WQBEL
Methyl Chloride	5,549	µg/L	Discharge Conc < TQL
Methylene Chloride	22.5	µg/L	Discharge Conc < TQL
1,1,2,2-Tetrachloroethane	0.22	µg/L	Discharge Conc < TQL

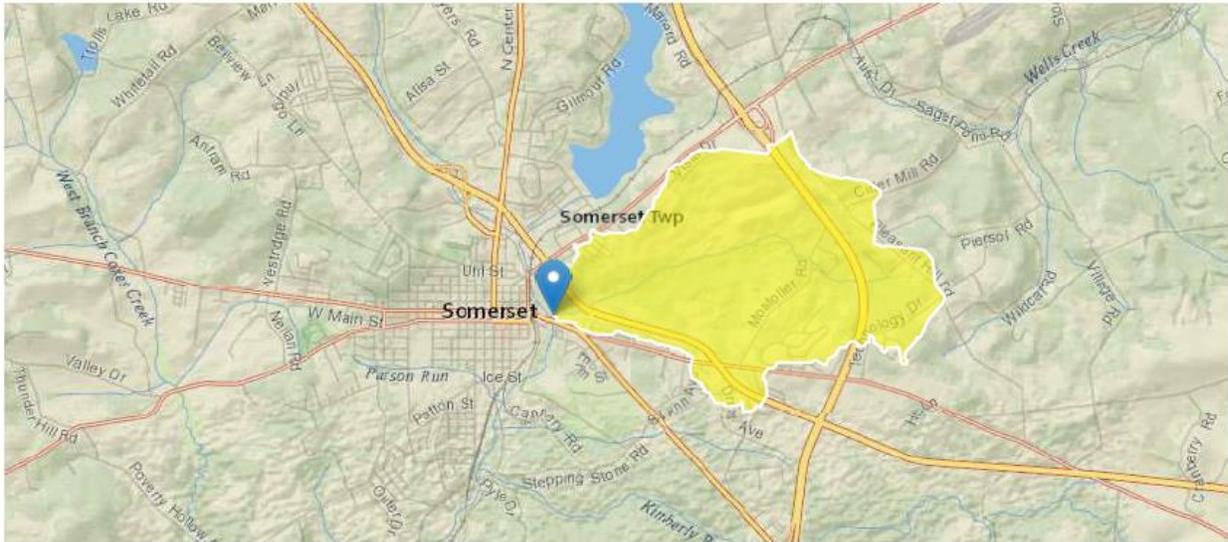
Tetrachloroethylene	11.2	µg/L	Discharge Conc < TQL
Toluene	57.5	µg/L	Discharge Conc < TQL
1,2-trans-Dichloroethylene	101	µg/L	Discharge Conc < TQL
1,1,1-Trichloroethane	815	µg/L	Discharge Conc < TQL
1,1,2-Trichloroethane	0.62	µg/L	Discharge Conc < TQL
Trichloroethylene	0.67	µg/L	Discharge Conc < TQL
Vinyl Chloride	0.022	µg/L	Discharge Conc < TQL
2-Chlorophenol	30.3	µg/L	Discharge Conc < TQL
2,4-Dichlorophenol	10.1	µg/L	Discharge Conc < TQL
2,4-Dimethylphenol	101	µg/L	Discharge Conc < TQL
2,4-Dinitrophenol	10.1	µg/L	Discharge Conc < TQL
2-Nitrophenol	1,614	µg/L	Discharge Conc < TQL
4-Nitrophenol	474	µg/L	Discharge Conc < TQL
p-Chloro-m-Cresol	160	µg/L	Discharge Conc ≤ 25% WQBEL
Pentachlorophenol	0.034	µg/L	Discharge Conc < TQL
Phenol	4,036	µg/L	Discharge Conc < TQL
2,4,6-Trichlorophenol	1.69	µg/L	Discharge Conc < TQL
Acenaphthene	17.2	µg/L	Discharge Conc < TQL
Acenaphthylene	N/A	N/A	No WQS
Anthracene	303	µg/L	Discharge Conc < TQL
Benzidine	0.0001	µg/L	Discharge Conc < TQL
Benzo(a)Anthracene	0.001	µg/L	Discharge Conc < TQL
Benzo(a)Pyrene	0.0001	µg/L	Discharge Conc < TQL
3,4-Benzofluoranthene	0.001	µg/L	Discharge Conc < TQL
Benzo(ghi)Perylene	N/A	N/A	No WQS
Benzo(k)Fluoranthene	0.011	µg/L	Discharge Conc < TQL
Bis(2-Chloroethoxy)Methane	N/A	N/A	No WQS
Bis(2-Chloroethyl)Ether	0.034	µg/L	Discharge Conc < TQL
Bis(2-Chloroisopropyl)Ether	202	µg/L	Discharge Conc < TQL
Bis(2-Ethylhexyl)Phthalate	0.36	µg/L	Discharge Conc < TQL
4-Bromophenyl Phenyl Ether	54.5	µg/L	Discharge Conc < TQL
Butyl Benzyl Phthalate	0.1	µg/L	Discharge Conc < TQL
2-Chloronaphthalene	807	µg/L	Discharge Conc < TQL
4-Chlorophenyl Phenyl Ether	N/A	N/A	No WQS
Chrysene	0.13	µg/L	Discharge Conc < TQL
Dibenzo(a,h)Anthracene	0.0001	µg/L	Discharge Conc < TQL
1,2-Dichlorobenzene	161	µg/L	Discharge Conc < TQL
1,3-Dichlorobenzene	7.06	µg/L	Discharge Conc < TQL
1,4-Dichlorobenzene	151	µg/L	Discharge Conc < TQL
3,3-Dichlorobenzidine	0.056	µg/L	Discharge Conc < TQL
Diethyl Phthalate	605	µg/L	Discharge Conc < TQL
Dimethyl Phthalate	504	µg/L	Discharge Conc < TQL
Di-n-Butyl Phthalate	20.2	µg/L	Discharge Conc < TQL
2,4-Dinitrotoluene	0.056	µg/L	Discharge Conc < TQL
2,6-Dinitrotoluene	0.056	µg/L	Discharge Conc < TQL

Di-n-Octyl Phthalate	N/A	N/A	No WQS
1,2-Diphenylhydrazine	0.034	µg/L	Discharge Conc < TQL
Fluoranthene	20.2	µg/L	Discharge Conc < TQL
Fluorene	50.4	µg/L	Discharge Conc < TQL
Hexachlorobenzene	0.00009	µg/L	Discharge Conc < TQL
Hexachlorobutadiene	0.011	µg/L	Discharge Conc < TQL
Hexachlorocyclopentadiene	1.01	µg/L	Discharge Conc < TQL
Hexachloroethane	0.11	µg/L	Discharge Conc < TQL
Indeno(1,2,3-cd)Pyrene	0.001	µg/L	Discharge Conc < TQL
Isophorone	34.3	µg/L	Discharge Conc < TQL
Naphthalene	43.4	µg/L	Discharge Conc < TQL
Nitrobenzene	10.1	µg/L	Discharge Conc < TQL
n-Nitrosodimethylamine	0.0008	µg/L	Discharge Conc < TQL
n-Nitrosodi-n-Propylamine	0.006	µg/L	Discharge Conc < TQL
n-Nitrosodiphenylamine	3.71	µg/L	Discharge Conc < TQL
Phenanthrene	1.01	µg/L	Discharge Conc < TQL
Pyrene	20.2	µg/L	Discharge Conc < TQL
1,2,4-Trichlorobenzene	0.071	µg/L	Discharge Conc < TQL
Aldrin	8.99E-07	µg/L	Discharge Conc < TQL
alpha-BHC	0.0004	µg/L	Discharge Conc < TQL
beta-BHC	0.009	µg/L	Discharge Conc < TQL
gamma-BHC	0.95	µg/L	Discharge Conc < TQL
delta BHC	N/A	N/A	No WQS
Chlordane	0.0003	µg/L	Discharge Conc < TQL
4,4-DDT	0.00003	µg/L	Discharge Conc < TQL
4,4-DDE	0.00002	µg/L	Discharge Conc < TQL
4,4-DDD	0.0001	µg/L	Discharge Conc < TQL
Dieldrin	0.000001	µg/L	Discharge Conc < TQL
alpha-Endosulfan	0.057	µg/L	Discharge Conc < TQL
beta-Endosulfan	0.057	µg/L	Discharge Conc < TQL
Endosulfan Sulfate	20.2	µg/L	Discharge Conc < TQL
Endrin	0.03	µg/L	Discharge Conc < TQL
Endrin Aldehyde	1.01	µg/L	Discharge Conc < TQL
Heptachlor	0.000007	µg/L	Discharge Conc < TQL
Heptachlor Epoxide	0.00003	µg/L	Discharge Conc < TQL
Toxaphene	0.0002	µg/L	Discharge Conc < TQL

Appendix E – StreamStats Report –

StreamStats Report

Region ID: PA  
 Workspace ID: PA20220330165219262000  
 Clicked Point (Latitude, Longitude): 40.00817, -79.07148  
 Time: 2022-03-30 12:52:42 -0400



Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	2.67	square miles
ELEV	Mean Basin Elevation	2246	feet

Low-Flow Statistics Parameters [99.9 Percent (2.67 square miles) Low Flow Region 4]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	2.67	square miles	2.26	1400
ELEV	Mean Basin Elevation	2246	feet	1050	2580

Low-Flow Statistics Flow Report [99.9 Percent (2.67 square miles) Low Flow Region 4]

PIl: Prediction Interval-Lower, PIu: Prediction Interval-Upper, ASEp: Average Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	0.145	ft <sup>3</sup> /s	43	43
30 Day 2 Year Low Flow	0.277	ft <sup>3</sup> /s	38	38
7 Day 10 Year Low Flow	0.0392	ft <sup>3</sup> /s	66	66

Statistic	Value	Unit	SE	ASEp
30 Day 10 Year Low Flow	0.0827	ft <sup>3</sup> /s	54	54
90 Day 10 Year Low Flow	0.186	ft <sup>3</sup> /s	41	41

*Low-Flow Statistics Citations*

**Stuckey, M.H.,2006, Low-flow, base-flow, and mean-flow regression equations for Pennsylvania streams: U.S. Geological Survey Scientific Investigations Report 2006-5130, 84 p. (<http://pubs.usgs.gov/sir/2006/5130/>)**

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Application Version: 4.8.1

StreamStats Services Version: 1.2.22

NSS Services Version: 2.1.2

Appendix F – eDMRs for Ammonia-Nitrogen 2022-2023 –



National Pollutant Discharge Elimination System (NPDES)  
Electronic Discharge Monitoring Report (eDMR)

3/21/2024 11:27:28 AM

Region: All  
County: All  
Municipality: All  
Permit #: PA0030406  
Monitoring Period Date Range: 9/1/2022 To 1/2/2024  
Client: All  
Parameter: Ammonia-Nitrogen (00610)

Permit #:	PA0030406	Facility Address:	SCI LAUREL HIGHLANDS STP PO BOX 631 5706 GLADES PIKE SOMERSET, PA 15501-0631
Client ID / Name:	132681 - PA DEPT OF CORR LAUREL HIGHLANDS STATE CORR INST	County:	Somerset
Primary Facility ID / Name:	245300 - SCI LAUREL HIGHLANDS STP	Municipality:	Somerset Twp
Major Facility:	No	Latitude / Longitude:	40.105833 / -79.040556
Region:	SWRO		

Monitoring Period Begin Date	Monitoring Period End Date	DMR Received Date	Outfall	Discharge	Monitoring Location	Parameter Name	Parameter Code	DMR Value	Permit Limit	Units	Statistical Base Code
09/01/2022	09/30/2022	10/21/2022	001	Yes	Final Effluent	Ammonia-Nitrogen	00610	1.9	2.0	mg/L	Average Monthly
					Final Effluent	Ammonia-Nitrogen	00610	3.1	8.3	lbs/day	Average Monthly
					Final Effluent	Ammonia-Nitrogen	00610	10.8	12.5	lbs/day	Weekly Average
					Final Effluent	Ammonia-Nitrogen	00610	6.5	3.0	mg/L	Weekly Average
10/01/2022	10/31/2022	11/12/2022	001	Yes	Final Effluent	Ammonia-Nitrogen	00610	0.2	2.0	mg/L	Average Monthly
					Final Effluent	Ammonia-Nitrogen	00610	0.3	8.3	lbs/day	Average Monthly
					Final Effluent	Ammonia-Nitrogen	00610	0.3	12.5	lbs/day	Weekly Average
					Final Effluent	Ammonia-Nitrogen	00610	0.2	3.0	mg/L	Weekly Average
11/01/2022	11/30/2022	12/28/2022	001	Yes	Final Effluent	Ammonia-Nitrogen	00610	0.4	12.5	lbs/day	Average Monthly
					Final Effluent	Ammonia-Nitrogen	00610	0.2	3.0	mg/L	Average Monthly
					Final Effluent	Ammonia-Nitrogen	00610	0.2	4.5	mg/L	Weekly Average
					Final Effluent	Ammonia-Nitrogen	00610	0.4	18.8	lbs/day	Weekly Average
12/01/2022	12/31/2022	01/25/2023	001	Yes	Final Effluent	Ammonia-Nitrogen	00610	0.3	3.0	mg/L	Average Monthly

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National Pollutant Discharge Elimination System (NPDES)  
Electronic Discharge Monitoring Report (eDMR)

3/21/2024 11:27:28 AM

12/01/2022	12/31/2022	01/25/2023	001	Yes	Final Effluent	Ammonia-Nitrogen	00610	0.5	12.5	lbs/day	Average Monthly
					Final Effluent	Ammonia-Nitrogen	00610	0.8	18.8	lbs/day	Weekly Average
					Final Effluent	Ammonia-Nitrogen	00610	0.5	4.5	mg/L	Weekly Average
01/01/2023	01/31/2023	02/18/2023	001	Yes	Final Effluent	Ammonia-Nitrogen	00610	0.2	3.0	mg/L	Average Monthly
					Final Effluent	Ammonia-Nitrogen	00610	0.4	12.5	lbs/day	Average Monthly
					Final Effluent	Ammonia-Nitrogen	00610	0.5	18.8	lbs/day	Weekly Average
					Final Effluent	Ammonia-Nitrogen	00610	0.2	4.5	mg/L	Weekly Average
02/01/2023	02/28/2023	03/16/2023	001	Yes	Final Effluent	Ammonia-Nitrogen	00610	0.4	12.5	lbs/day	Average Monthly
					Final Effluent	Ammonia-Nitrogen	00610	0.2	3.0	mg/L	Average Monthly
					Final Effluent	Ammonia-Nitrogen	00610	0.2	4.5	mg/L	Weekly Average
					Final Effluent	Ammonia-Nitrogen	00610	0.4	18.8	lbs/day	Weekly Average
03/01/2023	03/31/2023	04/07/2023	001	Yes	Final Effluent	Ammonia-Nitrogen	00610	0.5	12.5	lbs/day	Average Monthly
					Final Effluent	Ammonia-Nitrogen	00610	0.2	3.0	mg/L	Average Monthly
					Final Effluent	Ammonia-Nitrogen	00610	0.7	18.8	lbs/day	Weekly Average
					Final Effluent	Ammonia-Nitrogen	00610	0.3	4.5	mg/L	Weekly Average
04/01/2023	04/30/2023	05/25/2023	001	Yes	Final Effluent	Ammonia-Nitrogen	00610	0.2	3.0	mg/L	Average Monthly
					Final Effluent	Ammonia-Nitrogen	00610	0.3	12.5	lbs/day	Average Monthly
					Final Effluent	Ammonia-Nitrogen	00610	0.2	4.5	mg/L	Weekly Average
					Final Effluent	Ammonia-Nitrogen	00610	0.3	18.8	lbs/day	Weekly Average
05/01/2023	05/31/2023	06/17/2023	001	Yes	Final Effluent	Ammonia-Nitrogen	00610	0.2	2.0	mg/L	Average Monthly
					Final Effluent	Ammonia-Nitrogen	00610	0.4	8.3	lbs/day	Average Monthly
					Final Effluent	Ammonia-Nitrogen	00610	0.5	12.5	lbs/day	Weekly Average
					Final Effluent	Ammonia-Nitrogen	00610	0.2	3.0	mg/L	Weekly Average
06/01/2023	06/30/2023	07/19/2023	001	Yes	Final Effluent	Ammonia-Nitrogen	00610	0.6	2.0	mg/L	Average Monthly
					Final Effluent	Ammonia-Nitrogen	00610	1.3	8.3	lbs/day	Average Monthly
					Final Effluent	Ammonia-Nitrogen	00610	1.8	3.0	mg/L	Weekly Average
					Final Effluent	Ammonia-Nitrogen	00610	4.3	12.5	lbs/day	Weekly Average

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National Pollutant Discharge Elimination System (NPDES)  
Electronic Discharge Monitoring Report (eDMR)

3/21/2024 11:27:28 AM

Start Date	End Date	Reporting Date	Permit ID	Compliance	Effluent Type	Pollutant	Code	Concentration	Limit	Unit	Average Type
07/01/2023	07/31/2023	08/15/2023	001	Yes	Final Effluent	Ammonia-Nitrogen	00610	0.2	2.0	mg/L	Average Monthly
					Final Effluent	Ammonia-Nitrogen	00610	0.4	8.3	lbs/day	Average Monthly
					Final Effluent	Ammonia-Nitrogen	00610	0.2	3.0	mg/L	Weekly Average
					Final Effluent	Ammonia-Nitrogen	00610	0.4	12.5	lbs/day	Weekly Average
08/01/2023	08/31/2023	09/17/2023	001	Yes	Final Effluent	Ammonia-Nitrogen	00610	0.2	2.0	mg/L	Average Monthly
					Final Effluent	Ammonia-Nitrogen	00610	0.4	8.3	lbs/day	Average Monthly
					Final Effluent	Ammonia-Nitrogen	00610	0.2	3.0	mg/L	Weekly Average
					Final Effluent	Ammonia-Nitrogen	00610	0.5	12.5	lbs/day	Weekly Average
09/01/2023	09/30/2023	10/21/2023	001	Yes	Final Effluent	Ammonia-Nitrogen	00610	0.3	2.0	mg/L	Average Monthly
					Final Effluent	Ammonia-Nitrogen	00610	0.5	8.3	lbs/day	Average Monthly
					Final Effluent	Ammonia-Nitrogen	00610	0.9	12.5	lbs/day	Weekly Average
					Final Effluent	Ammonia-Nitrogen	00610	0.5	3.0	mg/L	Weekly Average
10/01/2023	10/31/2023	11/25/2023	001	Yes	Final Effluent	Ammonia-Nitrogen	00610	0.2	2.0	mg/L	Average Monthly
					Final Effluent	Ammonia-Nitrogen	00610	0.4	8.3	lbs/day	Average Monthly
					Final Effluent	Ammonia-Nitrogen	00610	0.4	12.5	lbs/day	Weekly Average
					Final Effluent	Ammonia-Nitrogen	00610	0.2	3.0	mg/L	Weekly Average
11/01/2023	11/30/2023	12/21/2023	001	Yes	Final Effluent	Ammonia-Nitrogen	00610	0.4	3.0	mg/L	Average Monthly
					Final Effluent	Ammonia-Nitrogen	00610	0.8	12.5	lbs/day	Average Monthly
					Final Effluent	Ammonia-Nitrogen	00610	16	18.8	lbs/day	Weekly Average
					Final Effluent	Ammonia-Nitrogen	00610	0.5	4.5	mg/L	Weekly Average
12/01/2023	12/31/2023	01/25/2024	001	Yes	Final Effluent	Ammonia-Nitrogen	00610	0.3	3.0	mg/L	Average Monthly
					Final Effluent	Ammonia-Nitrogen	00610	0.5	12.5	lbs/day	Average Monthly
					Final Effluent	Ammonia-Nitrogen	00610	1.0	18.8	lbs/day	Weekly Average
					Final Effluent	Ammonia-Nitrogen	00610	0.5	4.5	mg/L	Weekly Average