pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0026352**
Facility Type	**Municipal**	APS ID	**799850**
Major / Minor	**Major**	Authorization ID	**1251085**

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Riverview Sanitary Authority**	Facility Name	**Riverview Sanitary Authority STP**
Applicant Address	3100 University Boulevard	Facility Address	3100 University Boulevard
	Moon Township, PA 15108-2530		Moon Twp, PA 15108-2530
Applicant Contact	Terrance McConnell	Facility Contact	
Applicant Phone	(412) 264-3075	Facility Phone	
Client ID	163170	Site ID	254059
Ch 94 Load Status	Not Overloaded	Municipality	Coraopolis Borough
Connection Status		County	Allegheny
Date Application Received	November 1, 2018	EPA Waived?	No
Date Application Accepted	November 5, 2018	If No, Reason	Major Facility

Purpose of Application: Renewal application to discharge treated sewage

Summary of Review

This review is in response to a renewal application received on November 1, 2018. The Riverview Sanitary Authority collects sewage from Coraopolis Borough, Moon Township and Robinson Township and treats it with extended aeration, settling, and chlorination before discharging to the Ohio River through outfall 001. Sludge is aerobically digested and de-watered in a belt filter press before being landfilled at Republic Landfill in Imperial, PA.

Public Participation

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

Approve	Deny	Signatures	Date
X		*James Vanek* James Vanek, P.E. / Environmental Engineer	September 27, 2021
X		*Christopher Kriley* Christopher Kriley, P.E. / Clean Water Program Manager	September 28, 2021

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	4.34
Latitude	40º 31' 46.10"	Longitude	-80º 10' 44.13"
Quad Name		Quad Code	
Wastewater Description:	Sewage Effluent		
Receiving Waters	Ohio River (WWF)	Stream Code	32317
NHD Com ID	134396149	RMI	
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	20-G	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	DIOXIN, PATHOGENS, POLYCHLORINATED BIPHENYLS (PCBS)		
Source(s) of Impairment	SOURCE UNKNOWN		
TMDL Status	Final	Name	Ohio River

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

Nearest Downstream Public Water Supply Intake			
PWS Waters		Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	

Changes Since Last Permit Issuance:

Other Comments:

Treatment Facility Summary

Treatment Facility Name: Riverview Sanitary Authority STP

WQM Permit No.	Issuance Date
0272418	

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Activated Sludge I	Gas Chlorine	2.154

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
4.34	2842	Not Overloaded	Belt Filter Press	Landfill

Changes Since Last Permit Issuance:

Other Comments:

Compliance History

DMR Data for Outfall 001 (from March 1, 2020 to February 28, 2021)

Parameter	FEB-21	JAN-21	DEC-20	NOV-20	OCT-20	SEP-20	AUG-20	JUL-20	JUN-20	MAY-20	APR-20	MAR-20
Flow (MGD) Average Monthly	2.195	2.055	2.143	1.700	1.574	1.370	1.400	1.344	1.435	1.899	2.739	3.048
Flow (MGD) Daily Maximum	5.410	5.058	4.627	2.636	3.841	2.008	3.355	1.977	2.166	3.240	5.601	6.746
pH (S.U.) Minimum	6.87	6.31	6.51	6.62	6.57	6.21	6.31	6.42	6.74	6.78	6.84	6.73
pH (S.U.) Maximum	7.25	7.03	7.08	7.19	6.96	6.98	6.98	7.00	7.00	7.52	7.22	7.13
DO (mg/L) Minimum	6.02	6.06	6.51	5.11	5.17	5.22	5.03	5.22	5.83	5.40	6.12	5.42
TRC (mg/L) Average Monthly	0.20	0.30	0.30	0.30	0.30	0.30	0.40	0.30	0.30	0.20	0.20	0.20
TRC (mg/L) Instantaneous Maximum	0.48	0.48	0.51	0.52	0.54	0.49	0.54	0.49	0.44	0.48	0.34	0.49
CBOD5 (lbs/day) Average Monthly	74.0	41.0	54.0	48.0	39.0	34.0	33.0	33.0	37.0	46.0	68.0	81.0
CBOD5 (lbs/day) Weekly Average	75.0	41.0	54.0	43.0	39.0	37.0	32.0	33.0	36.0	46.0	69.0	81.0
CBOD5 (mg/L) Average Monthly	4.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
CBOD5 (mg/L) Weekly Average	4.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
BOD5 (mg/L) Raw Sewage Influent Average Monthly	94.0	106.0	63.0	92.0	95.0	82.0	81.0	101.0	77.0	91.0	75.0	77.0
TSS (lbs/day) Average Monthly	113.0	83.0	83.0	45.0	55.0	84.0	76.0	103.0	73.0	75.0	118.0	179.0
TSS (lbs/day) Weekly Average	114.0	84.0	83.0	44.0	56.0	81.0	76.0	96.0	68.0	76.0	124.0	191.0
TSS (mg/L) Average Monthly	6.0	5.0	5.0	3.0	4.0	7.0	7.0	9.0	6.0	5.0	5.0	7.0

TSS (mg/L) Raw Sewage Influent Average Monthly	84.0	114.0	74.0	85.0	96.0	86.0	78.0	136.0	96.0	121.0	115.0	236.0
TSS (mg/L) Weekly Average	6.0	6.0	5.0	3.0	5.0	7.0	7.0	8.0	9.0	5.0	5.0	8.0
Fecal Coliform (CFU/100 ml) Geometric Mean	3.08	1.49	2.96	3.17	1.53	1.15	1.00	5.62	1.43	1.39	7.15	7.92
Fecal Coliform (CFU/100 ml) Instantaneous Maximum	45.0	4.00	82.0	155.0	6.00	2.00	1.00	2420.0	5.00	7.00	579.0	461.0
Total Nitrogen (mg/L) Daily Maximum			17.2			21.6			15.6			12.2
Ammonia (mg/L) Average Monthly	6.00	3.00	1.00	2.00	3.00	1.00	1.00	1.00	0.39	1.00	0.55	1.00
Total Phosphorus (mg/L) Daily Maximum			1.07			0.920			0.580			0.230

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 4.34
Latitude 40º 31' 40.00" **Longitude** -80º 10' 49.00"
Wastewater Description: Sewage Effluent

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
$CBOD_5$	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)

Water Quality-Based Limitations

Effluent data from the NPDES renewal application was entered into the Department's Toxics Management Spreadsheet. The results of the toxics modelling is attached to this report. The model does not recommend any water quality based effluent limits for any toxic parameters.

Water quality modeling for $CBOD_5$ and NH_3N was not performed. Experience has shown that the dilution ratio of stream flow (4800 cfs) to discharge flow (6.71 cfs) of 777 will result in secondary limits for $CBOD_5$ and NH_3N.

The TRC Spreadsheet was used to evaluate the need for water quality based effluent limits for total residual chlorine. The output is attached to this report. WQBEL's for TRC are not necessary.

Best Professional Judgment (BPJ) Limitations

Dissolved oxygen will be limited at 4.0 mg/l as an instantaneous minimum.

Anti-Backsliding

Anti-backsliding was not utilized in this permit review.

Mass Loadings

Mass loading limits are applicable for publicly owned treatment works. Current policy requires average monthly mass loading limits be established for CBOD5 and TSS, and average weekly mass loading limits be established for CBOD5 and TSS.

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).

Total Nitrogen and Total Phosphorus

Nutrient monitoring is required 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 and Total Phosphorus in new and reissued permits. A frequency of 1/quarter is recommended for dischargers greater than 1.0 MGD.

Influent Monitoring

For POTWs with design flows greater than 2,000 GPD influent BOD_5 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.

Mercury

The Ohio River Sanitation Commission (ORSANCO) has requested that all publicly owned treatment works (POTWs) with design flows greater than or equal to 0.1 mgd that discharge directly to the Ohio River monitor for Mercury using a method that will detect down to a level of 12 nanograms/liter (ng/l) which is the limit at the end of pipe. This is lower than the most stringent water quality criteria in Chapter 93 of our Rules and Regulations for Mercury (50 ng/l for Human Health). ORSANCO's reasoning for requiring this limit at the end of pipe is that in October of 2015, mixing zones will not be permitted for bio-accumulative pollutants including Mercury. If reasonable potential exists to violate this limit, then effluent monitoring for Mercury may be imposed in the NPDES permit, along with a compliance schedule and pollution reduction plan.

Prior to development of the draft NPDES permit, the Department required the permittee to submit twelve (12) effluent results. Riverview provided 12 samples for mercury. The average of the samples is 5.4 nanograms/liter which is less than 50 % of the 12 nanogram/liter end of pipe standard from ORSANCO. Reasonable potential does not exist so monitoring for mercury will not be required.

Fecal Coliform

The following Fecal Coliform limits were imposed in the previous NPDES permits based on past ORSANCO Bacteria discharge requirements:

Period	Avg. Monthly	Instantaneous Maximum
May 1 to Oct 31	200/100 ml, Geometric Mean	400/100 ml
Nov 1 to Apr 30	2,000/100 ml, Geometric Mean	10,000/100 ml

Changes were made to ORSANCO's Bacteria discharge requirements to include an E. coli bacteria limit of 130/100 ml as a 90 day geometric mean for the period April through October, and not to exceed 240/100 ml in more than 25% of the samples. The following correlation analysis was made to show that extending the warmer period Fecal Coliform limits to include the month of April will be adequate to meet the above E. coli limit. ORSANCO has not objected to the use of this analysis:

The equations below are taken from the Ohio Environmental Protection Agency:

Current Warmer Period Avg. Monthly limit for Fecal Coliform (FC) = 200/100 ml

Using the equation for NE area of Ohio, E. coli = 0.667 x (FC)^1.034 = 159.73/100 ml

Using the equation for rest of Ohio, E. Coli = 0.403 x (FC)^1.028 = 93.49/100 ml

Average of two values = (159.73 + 93.49)/2 = 126.61/100 ml < 130/100 ml

In summary, the discharge meets the ORSANCO E. coli effluent standard of 130/100 ml by maintaining an effluent Fecal Coliform Avg. Monthly limit of 200/100 ml from April through October, which becomes the new recreational season period. Using the same equations for a maximum Fecal Coliform count of 400/100 ml at 10% of the time exceedance is more restrictive than the 25% exceedance at 240/100 ml E. coli.

E. Coli

Sewage discharges will include monitoring, at a minimum, for E. Coli, in new and reissued permits, with a monitoring frequency of 1/month for design flows >= 1 MGD, 1/quarter for design flows >= 0.05 and < 1 MGD, 1/year for design flows of 0.002 – 0.05 MGD.

Industrial Contributors

There are no industrial contributors to the authority's collection system. There is a commercial truck wash that sends its wastewater to the sewage plant. The authority regulates that truck wash with its own permit.

Whole Effluent Toxicity (WET)

For Outfall 001, ☐ **Acute** ☒ **Chronic** WET Testing was completed:

☒ For the permit renewal application (4 tests).
☐ Quarterly throughout the permit term.
☐ Quarterly throughout the permit term and a TIE/TRE was conducted.
☐ Other:

The dilution series used for the tests was: 100%, 60%, 30%, 2%, and 1%. The Target Instream Waste Concentration (TIWC) to be used for analysis of the results is: 0.6%.

Summary of Four Most Recent Test Results

TST Data Analysis

(NOTE – In lieu of recording information below, the application manager may attach the DEP WET Analysis Spreadsheet).

Test Date	*Ceriodaphnia* Results (Pass/Fail)		*Pimephales* Results (Pass/Fail)	
	Survival	Reproduction	Survival	Growth
8/28/2018	Pass	Pass	Pass	Pass
9/11/2018	Pass	Pass	Pass	Pass
10/13/2018	Pass	Pass	Pass	Pass
11/27/2018	Pass	Pass	Pass	Pass

***** *A "passing" result is that in which the replicate data for the TIWC is not statistically significant from the control condition. This is exhibited when the calculated t value ("T-Test Result") is greater than the critical t value. A "failing" result is exhibited when the calculated t value ("T-Test Result") is less than the critical t value.*

Is there reasonable potential for an excursion above water quality standards based on the results of these tests? (*NOTE – In general, reasonable potential is determined anytime there is at least one test failure in the previous four tests).*

☐ **YES** ☒ **NO**

Evaluation of Test Type, IWC and Dilution Series for Renewed Permit

Acute Partial Mix Factor (PMFa): **0.075** Chronic Partial Mix Factor (PMFc): **0.52**

1. Determine IWC – Acute (IWCa):

$(Q_d \times 1.547) / ((Q_{7\text{-}10} \times PMFa) + (Q_d \times 1.547))$

[(4.34 MGD x 1.547) / ((4800 cfs x 0.075) + (4.34 MGD x 1.547))] x 100 = **1.83%**

Is IWCa < 1%? ☐ **YES** ☒ **NO**

If the discharge is to the tidal portion of the Delaware River, indicate how the type of test was determined:

Type of Test for Permit Renewal: **Chronic**

2. Determine Target IWCc (If Chronic Tests Required)

$(Q_d \times 1.547) / (Q_{7\text{-}10} \times PMFc) + (Q_d \times 1.547)$

[(4.34 MGD x 1.547) / ((4800 cfs x 0.52) + (4.34 MGD x 1.547))] x 100 = **0.3%**

3. Determine Dilution Series

Dilution Series = 100%, 60%, 30%, 2%, and 1%.

WET Limits

Has reasonable potential been determined? ☐ YES ☒ NO

Will WET limits be established in the permit? ☐ YES ☒ NO

Proposed Effluent Limitations and Monitoring Requirements

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

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

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Recorded
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	4.0 Inst Min	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.5	XXX	1.6	1/day	Grab
CBOD5	905.4	1358.1	XXX	25	37.5	50	2/week	24-Hr Composite
BOD5 Raw Sewage Influent	Report	Report	XXX	Report	Report	XXX	2/week	24-Hr Composite
TSS Raw Sewage Influent	Report	Report	XXX	Report	Report	XXX	2/week	24-Hr Composite
TSS	1086.5	1629.8	XXX	30	45	60	2/week	24-Hr Composite
Fecal Coliform (No./100 ml) Nov 1 - Mar 31	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/week	Grab
Fecal Coliform (No./100 ml) Apr 1 - Oct 31	XXX	XXX	XXX	200 Geo Mean	XXX	400	2/week	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/month	Grab
Total Nitrogen	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/quarter	24-Hr Composite

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

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Ammonia	XXX	XXX	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Total Phosphorus	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/quarter	24-Hr Composite

Compliance Sampling Location: at outfall 001

Other Comments:

Toxics Modeling Output

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Toxics Management Spreadsheet
Version 1.2, February 2021

Model Results

Riverview Sanitary Authority, NPDES Permit No. PA0026352, Outfall 001

Instructions | Results | RETURN TO INPUTS | SAVE AS PDF | PRINT | ◉ All ○ Inputs ○ Results ○ Limits

☐ *Hydrodynamics*

☑ *Wasteload Allocations*

☑ *AFC* CCT (min): 15 PMF: 0.075 Analysis Hardness (mg/l): 102.2 Analysis pH: 7.00

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	750	750	40,976	
Total Antimony	0	0		0	1,100	1,100	60,098	
Total Arsenic	0	0		0	340	340	18,576	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	1,147,326	
Total Boron	0	0		0	8,100	8,100	442,540	
Total Cadmium	0	0		0	2.057	2.18	119	Chem Translator of 0.943 applied
Total Chromium (III)	0	0		0	579.993	1,835	100,277	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	890	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	5,190	
Total Copper	0	0		0	13.717	14.3	781	Chem Translator of 0.96 applied
Free Cyanide	0	0		0	22	22.0	1,202	
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	66.127	83.9	4,586	Chem Translator of 0.788 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	90.0	Chem Translator of 0.85 applied
Total Nickel	0	0		0	476.922	478	26,109	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	3.339	3.93	215	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	3,551	
Total Zinc	0	0		0	119.358	122	6,668	Chem Translator of 0.978 applied
Acrolein	0	0		0	3	3.0	164	
Acrylonitrile	0	0		0	650	650	35,512	
Benzene	0	0		0	640	640	34,966	
Bromoform	0	0		0	1,800	1,800	98,342	

Carbon Tetrachloride	0	0		0	2,800	2,800	152,977	
Chlorobenzene	0	0		0	1,200	1,200	65,561	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	18,000	18,000	983,422	
Chloroform	0	0		0	1,900	1,900	103,806	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	15,000	15,000	819,519	
1,1-Dichloroethylene	0	0		0	7,500	7,500	409,759	
1,2-Dichloropropane	0	0		0	11,000	11,000	600,980	
1,3-Dichloropropylene	0	0		0	310	310	16,937	
Ethylbenzene	0	0		0	2,900	2,900	158,440	
Methyl Bromide	0	0		0	550	550	30,049	
Methyl Chloride	0	0		0	28,000	28,000	1,529,768	
Methylene Chloride	0	0		0	12,000	12,000	655,615	
1,1,2,2-Tetrachloroethane	0	0		0	1,000	1,000	54,635	
Tetrachloroethylene	0	0		0	700	700	38,244	
Toluene	0	0		0	1,700	1,700	92,879	
1,2-trans-Dichloroethylene	0	0		0	6,800	6,800	371,515	
1,1,1-Trichloroethane	0	0		0	3,000	3,000	163,904	
1,1,2-Trichloroethane	0	0		0	3,400	3,400	185,758	
Trichloroethylene	0	0		0	2,300	2,300	125,660	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	560	560	30,595	
2,4-Dichlorophenol	0	0		0	1,700	1,700	92,879	
2,4-Dimethylphenol	0	0		0	660	660	36,059	
4,6-Dinitro-o-Cresol	0	0		0	80	80.0	4,371	
2,4-Dinitrophenol	0	0		0	660	660	36,059	
2-Nitrophenol	0	0		0	8,000	8,000	437,077	
4-Nitrophenol	0	0		0	2,300	2,300	125,660	
p-Chloro-m-Cresol	0	0		0	160	160	8,742	
Pentachlorophenol	0	0		0	8.723	8.72	477	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	460	460	25,132	
Acenaphthene	0	0		0	83	83.0	4,535	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	300	300	16,390	
Benzo(a)Anthracene	0	0		0	0.5	0.5	27.3	
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	1,639,037	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	4,500	4,500	245,856	
4-Bromophenyl Phenyl Ether	0	0		0	270	270	14,751	
Butyl Benzyl Phthalate	0	0		0	140	140	7,649	
2-Chloronaphthalene	0	0		0	N/A	N/A	N/A	
Chrysene	0	0		0	N/A	N/A	N/A	
Dibenzo(a,h)Anthrancene	0	0		0	N/A	N/A	N/A	
1,2-Dichlorobenzene	0	0		0	820	820	44,800	

1,3-Dichlorobenzene	0	0		0	350	350	19,122	
1,4-Dichlorobenzene	0	0		0	730	730	39,883	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	4,000	4,000	218,538	
Dimethyl Phthalate	0	0		0	2,500	2,500	136,586	
Di-n-Butyl Phthalate	0	0		0	110	110	6,010	
2,4-Dinitrotoluene	0	0		0	1,600	1,600	87,415	
2,6-Dinitrotoluene	0	0		0	990	990	54,088	
1,2-Diphenylhydrazine	0	0		0	15	15.0	820	
Fluoranthene	0	0		0	200	200	10,927	
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	546	
Hexachlorocyclopentadiene	0	0		0	5	5.0	273	
Hexachloroethane	0	0		0	60	60.0	3,278	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	10,000	10,000	546,346	
Naphthalene	0	0		0	140	140	7,649	
Nitrobenzene	0	0		0	4,000	4,000	218,538	
n-Nitrosodimethylamine	0	0		0	17,000	17,000	928,788	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	300	300	16,390	
Phenanthrene	0	0		0	5	5.0	273	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	130	130	7,102	
Aldrin	0	0		0	3	3.0	164	
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	51.9	
Chlordane	0	0		0	2.4	2.4	131	
4,4-DDT	0	0		0	1.1	1.1	60.1	
4,4-DDE	0	0		0	1.1	1.1	60.1	
4,4-DDD	0	0		0	1.1	1.1	60.1	
Dieldrin	0	0		0	0.24	0.24	13.1	
alpha-Endosulfan	0	0		0	0.22	0.22	12.0	
beta-Endosulfan	0	0		0	0.22	0.22	12.0	
Endrin	0	0		0	0.086	0.086	4.7	
Endrin Aldehyde	0	0		0	N/A	N/A	N/A	
Heptachlor	0	0		0	0.52	0.52	28.4	
Heptachlor Epoxide	0	0		0	0.5	0.5	27.3	

☑ *CFC* CCT (min): 720 PMF: 0.520 Analysis Hardness (mg/l): 100.32 Analysis pH: 7.00

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
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	81,970	

Total Arsenic	0	0		0	150	150	55,889	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	1,527,624	
Total Boron	0	0		0	1,600	1,600	596,146	
Total Cadmium	0	0		0	0.247	0.27	101	Chem Translator of 0.909 applied
Total Chromium (III)	0	0		0	74.310	86.4	32,194	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	3,873	Chem Translator of 0.962 applied
Total Cobalt	0	0		0	19	19.0	7,079	
Total Copper	0	0		0	8.980	9.35	3,485	Chem Translator of 0.96 applied
Free Cyanide	0	0		0	5.2	5.2	1,937	
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	1,500	1,500	1,073,219	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	2.525	3.19	1,190	Chem Translator of 0.791 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	338	Chem Translator of 0.85 applied
Total Nickel	0	0		0	52.148	52.3	19,488	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	1,859	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	4,844	
Total Zinc	0	0		0	118.461	120	44,764	Chem Translator of 0.986 applied
Acrolein	0	0		0	3	3.0	1,118	
Acrylonitrile	0	0		0	130	130	48,437	
Benzene	0	0		0	130	130	48,437	
Bromoform	0	0		0	370	370	137,859	
Carbon Tetrachloride	0	0		0	560	560	208,651	
Chlorobenzene	0	0		0	240	240	89,422	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	3,500	3,500	1,304,069	
Chloroform	0	0		0	390	390	145,311	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	3,100	3,100	1,155,033	
1,1-Dichloroethylene	0	0		0	1,500	1,500	558,887	
1,2-Dichloropropane	0	0		0	2,200	2,200	819,701	
1,3-Dichloropropylene	0	0		0	61	61.0	22,728	
Ethylbenzene	0	0		0	580	580	216,103	
Methyl Bromide	0	0		0	110	110	40,985	
Methyl Chloride	0	0		0	5,500	5,500	2,049,252	
Methylene Chloride	0	0		0	2,400	2,400	894,219	
1,1,2,2-Tetrachloroethane	0	0		0	210	210	78,244	
Tetrachloroethylene	0	0		0	140	140	52,163	
Toluene	0	0		0	330	330	122,955	
1,2-trans-Dichloroethylene	0	0		0	1,400	1,400	521,628	
1,1,1-Trichloroethane	0	0		0	610	610	227,281	
1,1,2-Trichloroethane	0	0		0	680	680	253,362	
Trichloroethylene	0	0		0	450	450	167,666	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	110	110	40,985	

2,4-Dichlorophenol	0	0		0	340	340	126,681	
2,4-Dimethylphenol	0	0		0	130	130	48,437	
4,6-Dinitro-o-Cresol	0	0		0	16	16.0	5,961	
2,4-Dinitrophenol	0	0		0	130	130	48,437	
2-Nitrophenol	0	0		0	1,600	1,600	596,146	
4-Nitrophenol	0	0		0	470	470	175,118	
p-Chloro-m-Cresol	0	0		0	30	30.0	11,178	
Pentachlorophenol	0	0		0	6.693	6.69	2,494	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	91	91.0	33,906	
Acenaphthene	0	0		0	17	17.0	6,334	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	59	59.0	21,983	
Benzo(a)Anthracene	0	0		0	0.1	0.1	37.3	
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	2,235,548	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	910	910	339,058	
4-Bromophenyl Phenyl Ether	0	0		0	54	54.0	20,120	
Butyl Benzyl Phthalate	0	0		0	35	35.0	13,041	
2-Chloronaphthalene	0	0		0	N/A	N/A	N/A	
Chrysene	0	0		0	N/A	N/A	N/A	
Dibenzo(a,h)Anthrancene	0	0		0	N/A	N/A	N/A	
1,2-Dichlorobenzene	0	0		0	160	160	59,615	
1,3-Dichlorobenzene	0	0		0	69	69.0	25,709	
1,4-Dichlorobenzene	0	0		0	150	150	55,889	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	800	800	298,073	
Dimethyl Phthalate	0	0		0	500	500	186,296	
Di-n-Butyl Phthalate	0	0		0	21	21.0	7,824	
2,4-Dinitrotoluene	0	0		0	320	320	119,229	
2,6-Dinitrotoluene	0	0		0	200	200	74,518	
1,2-Diphenylhydrazine	0	0		0	3	3.0	1,118	
Fluoranthene	0	0		0	40	40.0	14,904	
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	745	
Hexachlorocyclopentadiene	0	0		0	1	1.0	373	
Hexachloroethane	0	0		0	12	12.0	4,471	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	2,100	2,100	782,442	
Naphthalene	0	0		0	43	43.0	16,021	
Nitrobenzene	0	0		0	810	810	301,799	
n-Nitrosodimethylamine	0	0		0	3,400	3,400	1,266,810	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	

n-Nitrosodiphenylamine	0	0		0	59	59.0	21,983	
Phenanthrene	0	0		0	1	1.0	373	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	26	26.0	9,687	
Aldrin	0	0		0	0.1	0.1	37.3	
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	1.6	
4,4-DDT	0	0		0	0.001	0.001	0.37	
4,4-DDE	0	0		0	0.001	0.001	0.37	
4,4-DDD	0	0		0	0.001	0.001	0.37	
Dieldrin	0	0		0	0.056	0.056	20.9	
alpha-Endosulfan	0	0		0	0.056	0.056	20.9	
beta-Endosulfan	0	0		0	0.056	0.056	20.9	
Endrin	0	0		0	0.036	0.036	13.4	
Endrin Aldehyde	0	0		0	N/A	N/A	N/A	
Heptachlor	0	0		0	0.0038	0.004	1.42	
Heptachlor Epoxide	0	0		0	0.0038	0.004	1.42	

☑ *THH* CCT (min): 720 PMF: 0.520 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	500,000	500,000	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	2,087	
Total Arsenic	0	0		0	10	10.0	3,726	
Total Barium	0	0		0	2,400	2,400	894,219	
Total Boron	0	0		0	3,100	3,100	1,155,033	
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	140	140	52,163	
Dissolved Iron	0	0		0	300	300	111,777	
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	372,591	
Total Mercury	0	0		0	0.050	0.05	18.6	
Total Nickel	0	0		0	610	610	227,281	
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	89.4	

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Total Zinc	0	0		0	N/A	N/A	N/A	
Acrolein	0	0		0	6	6.0	2,236	
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	130	130	48,437	
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	12,296	
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	530	530	197,473	
Methyl Bromide	0	0		0	47	47.0	17,512	
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	1,300	1,300	484,369	
1,2-trans-Dichloroethylene	0	0		0	140	140	52,163	
1,1,1-Trichloroethane	0	0		0	N/A	N/A	N/A	
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	81	81.0	30,180	
2,4-Dichlorophenol	0	0		0	77	77.0	28,690	
2,4-Dimethylphenol	0	0		0	380	380	141,585	
4,6-Dinitro-o-Cresol	0	0		0	13	13.0	4,844	
2,4-Dinitrophenol	0	0		0	69	69.0	25,709	
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	10,400	10,400	3,874,949	
2,4,6-Trichlorophenol	0	0		0	N/A	N/A	N/A	
Acenaphthene	0	0		0	670	670	249,636	
Anthracene	0	0		0	8,300	8,300	3,092,508	
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	1,400	1,400	521,628	

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	150	150	55,889	
2-Chloronaphthalene	0	0		0	1,000	1,000	372,591	
Chrysene	0	0		0	N/A	N/A	N/A	
Dibenzo(a,h)Anthrancene	0	0		0	N/A	N/A	N/A	
1,2-Dichlorobenzene	0	0		0	420	420	156,488	
1,3-Dichlorobenzene	0	0		0	420	420	156,488	
1,4-Dichlorobenzene	0	0		0	420	420	156,488	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	17,000	17,000	6,334,052	
Dimethyl Phthalate	0	0		0	270,000	270,000	########	
Di-n-Butyl Phthalate	0	0		0	2,000	2,000	745,183	
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	130	130	48,437	
Fluorene	0	0		0	1,100	1,100	409,850	
Hexachlorobenzene	0	0		0	N/A	N/A	N/A	
Hexachlorobutadiene	0	0		0	N/A	N/A	N/A	
Hexachlorocyclopentadiene	0	0		0	40	40.0	14,904	
Hexachloroethane	0	0		0	N/A	N/A	N/A	
Indeno(1,2,3-cd)Pyrene	0	0		0	0.0038	0.004	1.42	
Isophorone	0	0		0	35	35.0	13,041	
Naphthalene	0	0		0	N/A	N/A	N/A	
Nitrobenzene	0	0		0	17	17.0	6,334	
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	830	830	309,251	
1,2,4-Trichlorobenzene	0	0		0	35	35.0	13,041	
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	0.098	0.098	36.5	
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	62	62.0	23,101	
beta-Endosulfan	0	0		0	62	62.0	23,101	
Endrin	0	0		0	0.059	0.059	22.0	
Endrin Aldehyde	0	0		0	0.29	0.29	108	
Heptachlor	0	0		0	N/A	N/A	N/A	
Heptachlor Epoxide	0	0		0	N/A	N/A	N/A	

☑ CRL CCT (min): 720 PMF: 0.708 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
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	0.051	0.051	65.9	
Benzene	0	0		0	1.2	1.2	1,551	
Bromoform	0	0		0	4.3	4.3	5,558	
Carbon Tetrachloride	0	0		0	0.23	0.23	297	
Chlorobenzene	0	0		0	N/A	N/A	N/A	
Chlorodibromomethane	0	0		0	0.4	0.4	517	
2-Chloroethyl Vinyl Ether	0	0		0	N/A	N/A	N/A	
Chloroform	0	0		0	5.7	5.7	7,368	
Dichlorobromomethane	0	0		0	0.55	0.55	711	
1,2-Dichloroethane	0	0		0	0.38	0.38	491	
1,1-Dichloroethylene	0	0		0	N/A	N/A	N/A	
1,2-Dichloropropane	0	0		0	N/A	N/A	N/A	
1,3-Dichloropropylene	0	0		0	0.34	0.34	439	
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	4.6	4.6	5,946	

1,1,2,2-Tetrachloroethane	0	0		0	0.17	0.17	220	
Tetrachloroethylene	0	0		0	0.69	0.69	892	
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	0.59	0.59	763	
Trichloroethylene	0	0		0	2.5	2.5	3,232	
Vinyl Chloride	0	0		0	0.025	0.025	32.3	
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	
4,6-Dinitro-o-Cresol	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	0.270	0.27	349	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	1.4	1.4	1,810	
Acenaphthene	0	0		0	N/A	N/A	N/A	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	0.000086	0.00009	0.11	
Benzo(a)Anthracene	0	0		0	0.0038	0.004	4.91	
Benzo(a)Pyrene	0	0		0	0.0038	0.004	4.91	
3,4-Benzofluoranthene	0	0		0	0.0038	0.004	4.91	
Benzo(k)Fluoranthene	0	0		0	0.0038	0.004	4.91	
Bis(2-Chloroethyl)Ether	0	0		0	0.03	0.03	38.8	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	1.2	1.2	1,551	
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	0.0038	0.004	4.91	
Dibenzo(a,h)Anthrancene	0	0		0	0.0038	0.004	4.91	
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	0.021	0.021	27.1	
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	64.6	
2,6-Dinitrotoluene	0	0		0	0.05	0.05	64.6	
1,2-Diphenylhydrazine	0	0		0	0.036	0.036	46.5	
Fluoranthene	0	0		0	N/A	N/A	N/A	
Fluorene	0	0		0	N/A	N/A	N/A	
Hexachlorobenzene	0	0		0	0.00028	0.0003	0.36	

Hexachlorobutadiene	0	0		0	0.44	0.44	569	
Hexachlorocyclopentadiene	0	0		0	N/A	N/A	N/A	
Hexachloroethane	0	0		0	1.4	1.4	1,810	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
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	0.00069	0.0007	0.89	
n-Nitrosodi-n-Propylamine	0	0		0	0.005	0.005	6.46	
n-Nitrosodiphenylamine	0	0		0	3.3	3.3	4,266	
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	0.000049	0.00005	0.063	
alpha-BHC	0	0		0	0.0026	0.003	3.36	
beta-BHC	0	0		0	0.0091	0.009	11.8	
gamma-BHC	0	0		0	N/A	N/A	N/A	
Chlordane	0	0		0	0.0008	0.0008	1.03	
4,4-DDT	0	0		0	0.00022	0.0002	0.28	
4,4-DDE	0	0		0	0.00022	0.0002	0.28	
4,4-DDD	0	0		0	0.00031	0.0003	0.4	
Dieldrin	0	0		0	0.000052	0.00005	0.067	
alpha-Endosulfan	0	0		0	N/A	N/A	N/A	
beta-Endosulfan	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	0.000079	0.00008	0.1	
Heptachlor Epoxide	0	0		0	0.000039	0.00004	0.05	

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

No. Samples/Month: 4

	Mass Limits		*Concentration Limits*						
Pollutants	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units	Governing WQBEL	WQBEL Basis	Comments

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

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

Pollutants	Governing WQBEL	Units	Comments
Total Dissolved Solids (PWS)	N/A	N/A	PWS Not Applicable
Bromide	N/A	N/A	No WQS

Sulfate (PWS)	N/A	N/A	PWS Not Applicable
Total Aluminum	26,264	µg/L	Discharge Conc ≤ 10% WQBEL
Total Antimony	2,087	µg/L	Discharge Conc ≤ 10% WQBEL
Total Arsenic	3,726	µg/L	Discharge Conc ≤ 10% WQBEL
Total Barium	735,390	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Boron	283,650	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cadmium	76.4	µg/L	Discharge Conc < TQL
Total Chromium (III)	32,194	µg/L	Discharge Conc ≤ 10% WQBEL
Hexavalent Chromium	571	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cobalt	3,327	µg/L	Discharge Conc ≤ 10% WQBEL
Total Copper	500	µg/L	Discharge Conc ≤ 10% WQBEL
Free Cyanide	770	µg/L	Discharge Conc ≤ 25% WQBEL
Total Cyanide	N/A	N/A	No WQS
Dissolved Iron	111,777	µg/L	Discharge Conc ≤ 10% WQBEL
Total Iron	1,073,219	µg/L	Discharge Conc ≤ 10% WQBEL
Total Lead	1,190	µg/L	Discharge Conc < TQL
Total Manganese	372,591	µg/L	Discharge Conc ≤ 10% WQBEL
Total Mercury	18.6	µg/L	Discharge Conc < TQL
Total Nickel	16,735	µg/L	Discharge Conc ≤ 10% WQBEL
Total Phenols (Phenolics) (PWS)		µg/L	PWS Not Applicable
Total Selenium	1,859	µg/L	Discharge Conc < TQL
Total Silver	138	µg/L	Discharge Conc < TQL
Total Thallium	89.4	µg/L	Discharge Conc < TQL
Total Zinc	4,274	µg/L	Discharge Conc ≤ 10% WQBEL
Total Molybdenum	N/A	N/A	No WQS
Acrolein	105	µg/L	Discharge Conc < TQL
Acrylonitrile	65.9	µg/L	Discharge Conc < TQL
Benzene	1,551	µg/L	Discharge Conc < TQL
Bromoform	5,558	µg/L	Discharge Conc < TQL
Carbon Tetrachloride	297	µg/L	Discharge Conc < TQL
Chlorobenzene	42,022	µg/L	Discharge Conc < TQL
Chlorodibromomethane	517	µg/L	Discharge Conc ≤ 25% WQBEL
Chloroethane	N/A	N/A	No WQS
2-Chloroethyl Vinyl Ether	630,334	µg/L	Discharge Conc < TQL
Chloroform	7,368	µg/L	Discharge Conc ≤ 25% WQBEL
Dichlorobromomethane	711	µg/L	Discharge Conc ≤ 25% WQBEL
1,1-Dichloroethane	N/A	N/A	No WQS
1,2-Dichloroethane	491	µg/L	Discharge Conc < TQL
1,1-Dichloroethylene	12,296	µg/L	Discharge Conc < TQL
1,2-Dichloropropane	385,204	µg/L	Discharge Conc < TQL
1,3-Dichloropropylene	439	µg/L	Discharge Conc < TQL
1,4-Dioxane	N/A	N/A	No WQS
Ethylbenzene	101,554	µg/L	Discharge Conc < TQL
Methyl Bromide	17,512	µg/L	Discharge Conc < TQL
Methyl Chloride	980,520	µg/L	Discharge Conc < TQL
Methylene Chloride	5,946	µg/L	Discharge Conc < TQL

1,1,2,2-Tetrachloroethane	220	µg/L	Discharge Conc < TQL
Tetrachloroethylene	892	µg/L	Discharge Conc < TQL
Toluene	59,532	µg/L	Discharge Conc < TQL
1,2-trans-Dichloroethylene	52,163	µg/L	Discharge Conc < TQL
1,1,1-Trichloroethane	105,056	µg/L	Discharge Conc < TQL
1,1,2-Trichloroethane	763	µg/L	Discharge Conc < TQL
Trichloroethylene	3,232	µg/L	Discharge Conc < TQL
Vinyl Chloride	32.3	µg/L	Discharge Conc < TQL
2-Chlorophenol	19,610	µg/L	Discharge Conc < TQL
2,4-Dichlorophenol	28,690	µg/L	Discharge Conc < TQL
2,4-Dimethylphenol	23,112	µg/L	Discharge Conc < TQL
4,6-Dinitro-o-Cresol	2,801	µg/L	Discharge Conc < TQL
2,4-Dinitrophenol	23,112	µg/L	Discharge Conc < TQL
2-Nitrophenol	280,148	µg/L	Discharge Conc < TQL
4-Nitrophenol	80,543	µg/L	Discharge Conc < TQL
p-Chloro-m-Cresol	5,603	µg/L	Discharge Conc < TQL
Pentachlorophenol	305	µg/L	Discharge Conc < TQL
Phenol	3,874,949	µg/L	Discharge Conc < TQL
2,4,6-Trichlorophenol	1,810	µg/L	Discharge Conc < TQL
Acenaphthene	2,907	µg/L	Discharge Conc < TQL
Acenaphthylene	N/A	N/A	No WQS
Anthracene	3,092,508	µg/L	Discharge Conc < TQL
Benzidine	0.11	µg/L	Discharge Conc < TQL
Benzo(a)Anthracene	4.91	µg/L	Discharge Conc < TQL
Benzo(a)Pyrene	4.91	µg/L	Discharge Conc < TQL
3,4-Benzofluoranthene	4.91	µg/L	Discharge Conc < TQL
Benzo(ghi)Perylene	N/A	N/A	No WQS
Benzo(k)Fluoranthene	4.91	µg/L	Discharge Conc < TQL
Bis(2-Chloroethoxy)Methane	N/A	N/A	No WQS
Bis(2-Chloroethyl)Ether	38.8	µg/L	Discharge Conc < TQL
Bis(2-Chloroisopropyl)Ether	521,628	µg/L	Discharge Conc < TQL
Bis(2-Ethylhexyl)Phthalate	1,551	µg/L	Discharge Conc < TQL
4-Bromophenyl Phenyl Ether	9,455	µg/L	Discharge Conc < TQL
Butyl Benzyl Phthalate	4,903	µg/L	Discharge Conc < TQL
2-Chloronaphthalene	372,591	µg/L	Discharge Conc < TQL
4-Chlorophenyl Phenyl Ether	N/A	N/A	No WQS
Chrysene	4.91	µg/L	Discharge Conc < TQL
Dibenzo(a,h)Anthrancene	4.91	µg/L	Discharge Conc < TQL
1,2-Dichlorobenzene	28,715	µg/L	Discharge Conc < TQL
1,3-Dichlorobenzene	12,256	µg/L	Discharge Conc < TQL
1,4-Dichlorobenzene	25,564	µg/L	Discharge Conc < TQL
3,3-Dichlorobenzidine	27.1	µg/L	Discharge Conc < TQL
Diethyl Phthalate	140,074	µg/L	Discharge Conc < TQL
Dimethyl Phthalate	87,546	µg/L	Discharge Conc < TQL
Di-n-Butyl Phthalate	3,852	µg/L	Discharge Conc ≤ 25% WQBEL
2,4-Dinitrotoluene	64.6	µg/L	Discharge Conc < TQL
2,6-Dinitrotoluene	64.6	µg/L	Discharge Conc < TQL

Di-n-Octyl Phthalate	N/A	N/A	No WQS
1,2-Diphenylhydrazine	46.5	µg/L	Discharge Conc < TQL
Fluoranthene	7,004	µg/L	Discharge Conc < TQL
Fluorene	409,850	µg/L	Discharge Conc < TQL
Hexachlorobenzene	0.36	µg/L	Discharge Conc < TQL
Hexachlorobutadiene	350	µg/L	Discharge Conc < TQL
Hexachlorocyclopentadiene	175	µg/L	Discharge Conc < TQL
Hexachloroethane	1,810	µg/L	Discharge Conc < TQL
Indeno(1,2,3-cd)Pyrene	1.42	µg/L	Discharge Conc < TQL
Isophorone	13,041	µg/L	Discharge Conc < TQL
Naphthalene	4,903	µg/L	Discharge Conc < TQL
Nitrobenzene	6,334	µg/L	Discharge Conc < TQL
n-Nitrosodimethylamine	0.89	µg/L	Discharge Conc < TQL
n-Nitrosodi-n-Propylamine	6.46	µg/L	Discharge Conc < TQL
n-Nitrosodiphenylamine	4,266	µg/L	Discharge Conc < TQL
Phenanthrene	175	µg/L	Discharge Conc < TQL
Pyrene	309,251	µg/L	Discharge Conc < TQL
1,2,4-Trichlorobenzene	4,552	µg/L	Discharge Conc < TQL
Aldrin	0.063	µg/L	Discharge Conc < TQL
alpha-BHC	3.36	µg/L	Discharge Conc < TQL
beta-BHC	11.8	µg/L	Discharge Conc < TQL
gamma-BHC	33.3	µg/L	Discharge Conc < TQL
delta BHC	N/A	N/A	No WQS
Chlordane	1.03	µg/L	Discharge Conc < TQL
4,4-DDT	0.28	µg/L	Discharge Conc < TQL
4,4-DDE	0.28	µg/L	Discharge Conc < TQL
4,4-DDD	0.37	µg/L	Discharge Conc < TQL
Dieldrin	0.067	µg/L	Discharge Conc < TQL
alpha-Endosulfan	7.7	µg/L	Discharge Conc < TQL
beta-Endosulfan	7.7	µg/L	Discharge Conc < TQL
Endosulfan Sulfate	N/A	N/A	No WQS
Endrin	3.01	µg/L	Discharge Conc < TQL
Endrin Aldehyde	108	µg/L	Discharge Conc < TQL
Heptachlor	0.1	µg/L	Discharge Conc < TQL
Heptachlor Epoxide	0.05	µg/L	Discharge Conc < TQL

Toxics Model Input

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.2, February 2021

Discharge Information

Instructions | Discharge | Stream

Facility: **Riverview Sanitary Authority** NPDES Permit No.: **PA0026352** Outfall No.: **001**

Evaluation Type: **Major Sewage / Industrial Waste** Wastewater Description: **treated sewage**

Discharge Characteristics									
Design Flow (MGD)*	Hardness (mg/l)*	pH (SU)*	Partial Mix Factors (PMFs)				Complete Mix Times (min)	
			AFC	CFC	THH	CRL	Q_{7-10}	Q_h
4.34	220	7						

					0 if left blank		*0.5 if left blank*		*0 if left blank*			*1 if left blank*	
	Discharge Pollutant	Units	Max Discharge Conc		Trib Conc	Stream Conc	Daily CV	Hourly CV	Stream CV	Fate Coeff	FOS	Criteria Mod	Chem Transl
Group 1	Total Dissolved Solids (PWS)	mg/L		701									
	Chloride (PWS)	mg/L											
	Bromide	mg/L		0.224									
	Sulfate (PWS)	mg/L		82.2									
	Fluoride (PWS)	mg/L											
Group 2	Total Aluminum	µg/L		64									
	Total Antimony	µg/L		0.49									
	Total Arsenic	µg/L		1.4									
	Total Barium	µg/L		38									
	Total Beryllium	µg/L	<	0.3									
	Total Boron	µg/L		238									
	Total Cadmium	µg/L	<	0.16									
	Total Chromium (III)	µg/L		0.7									
	Hexavalent Chromium	µg/L	<	5									
	Total Cobalt	µg/L		0.7									
	Total Copper	µg/L		16									
	Free Cyanide	µg/L		7									
	Total Cyanide	µg/L		9									
	Dissolved Iron	µg/L		29									
	Total Iron	µg/L		92									
	Total Lead	µg/L	<	0.33									
	Total Manganese	µg/L		51									
	Total Mercury	µg/L	<	0.04									
	Total Nickel	µg/L		3									
	Total Phenols (Phenolics) (PWS)	µg/L		3									
	Total Selenium	µg/L	<	0.66									
	Total Silver	µg/L	<	0.33									
	Total Thallium	µg/L	<	0.16									
	Total Zinc	µg/L		35									
	Total Molybdenum	µg/L		2									
	Acrolein	µg/L	<	1.9									
	Acrylamide	µg/L	<										
	Acrylonitrile	µg/L	<	1.2									
	Benzene	µg/L	<	0.23									
	Bromoform	µg/L	<	0.4									

Group 3	Carbon Tetrachloride	µg/L	<	0.31										
	Chlorobenzene	µg/L	<	0.19										
	Chlorodibromomethane	µg/L		0.58										
	Chloroethane	µg/L	<	0.33										
	2-Chloroethyl Vinyl Ether	µg/L	<	0.38										
	Chloroform	µg/L		5.1										
	Dichlorobromomethane	µg/L		2.7										
	1,1-Dichloroethane	µg/L	<	0.28										
	1,2-Dichloroethane	µg/L	<	0.32										
	1,1-Dichloroethylene	µg/L	<	0.29										
	1,2-Dichloropropane	µg/L	<	0.24										
	1,3-Dichloropropylene	µg/L	<	0.47										
	1,4-Dioxane	µg/L	<	58.9										
	Ethylbenzene	µg/L	<	0.34										
	Methyl Bromide	µg/L	<	0.39										
	Methyl Chloride	µg/L	<	0.31										
	Methylene Chloride	µg/L	<	0.45										
	1,1,2,2-Tetrachloroethane	µg/L	<	0.33										
	Tetrachloroethylene	µg/L	<	0.35										
	Toluene	µg/L	<	0.23										
	1,2-trans-Dichloroethylene	µg/L	<	0.26										
	1,1,1-Trichloroethane	µg/L	<	0.22										
	1,1,2-Trichloroethane	µg/L	<	0.33										
	Trichloroethylene	µg/L	<	0.33										
	Vinyl Chloride	µg/L	<	0.3										
Group 4	2-Chlorophenol	µg/L	<	0.31										
	2,4-Dichlorophenol	µg/L	<	0.3										
	2,4-Dimethylphenol	µg/L	<	0.2										
	4,6-Dinitro-o-Cresol	µg/L	<	0.31										
	2,4-Dinitrophenol	µg/L	<	2.4										
	2-Nitrophenol	µg/L	<	0.42										
	4-Nitrophenol	µg/L	<	0.99										
	p-Chloro-m-Cresol	µg/L	<	0.18										
	Pentachlorophenol	µg/L	<	1.1										
	Phenol	µg/L	<	0.22										
	2,4,6-Trichlorophenol	µg/L	<	0.54										
Group 5	Acenaphthene	µg/L	<	0.14										
	Acenaphthylene	µg/L	<	0.18										
	Anthracene	µg/L	<	0.14										
	Benzidine	µg/L	<	2.9										
	Benzo(a)Anthracene	µg/L	<	0.16										
	Benzo(a)Pyrene	µg/L	<	0.21										
	3,4-Benzofluoranthene	µg/L	<	0.12										
	Benzo(ghi)Perylene	µg/L	<	0.21										
	Benzo(k)Fluoranthene	µg/L	<	0.18										
	Bis(2-Chloroethoxy)Methane	µg/L	<	0.2										
	Bis(2-Chloroethyl)Ether	µg/L	<	0.18										
	Bis(2-Chloroisopropyl)Ether	µg/L	<	0.26										
	Bis(2-Ethylhexyl)Phthalate	µg/L	<	0.21										
	4-Bromophenyl Phenyl Ether	µg/L	<	0.16										
	Butyl Benzyl Phthalate	µg/L	<	0.11										
	2-Chloronaphthalene	µg/L	<	0.17										
	4-Chlorophenyl Phenyl Ether	µg/L	<	0.13										
	Chrysene	µg/L	<	0.14										
	Dibenzo(a,h)Anthrancene	µg/L	<	0.2										
	1,2-Dichlorobenzene	µg/L	<	0.38										
	1,3-Dichlorobenzene	µg/L	<	0.25										
	1,4-Dichlorobenzene	µg/L	<	0.27										
	3,3-Dichlorobenzidine	µg/L	<	0.45										
	Diethyl Phthalate	µg/L	<	0.17										
	Dimethyl Phthalate	µg/L	<	0.13										
	Di-n-Butyl Phthalate	µg/L		0.3										
	2,4-Dinitrotoluene	µg/L	<	0.12										

	2,6-Dinitrotoluene	µg/L	<	0.2									
	Di-n-Octyl Phthalate	µg/L	<	0.94									
	1,2-Diphenylhydrazine	µg/L	<	0.25									
	Fluoranthene	µg/L	<	0.16									
	Fluorene	µg/L	<	0.19									
	Hexachlorobenzene	µg/L	<	0.22									
	Hexachlorobutadiene	µg/L	<	0.18									
	Hexachlorocyclopentadiene	µg/L	<	0.16									
	Hexachloroethane	µg/L	<	0.28									
	Indeno(1,2,3-cd)Pyrene	µg/L	<	0.11									
	Isophorone	µg/L	<	0.14									
	Naphthalene	µg/L	<	0.17									
	Nitrobenzene	µg/L	<	0.26									
	n-Nitrosodimethylamine	µg/L	<	0.6									
	n-Nitrosodi-n-Propylamine	µg/L	<	0.23									
	n-Nitrosodiphenylamine	µg/L	<	0.17									
	Phenanthrene	µg/L	<	0.12									
	Pyrene	µg/L	<	0.15									
	1,2,4-Trichlorobenzene	µg/L	<	0.15									
Group 6	Aldrin	µg/L	<	0.0048									
	alpha-BHC	µg/L	<	0.002									
	beta-BHC	µg/L	<	0.0078									
	gamma-BHC	µg/L	<	0.0029									
	delta BHC	µg/L	<	0.0029									
	Chlordane	µg/L	<	0.034									
	4,4-DDT	µg/L	<	0.0059									
	4,4-DDE	µg/L	<	0.0069									
	4,4-DDD	µg/L	<	0.0069									
	Dieldrin	µg/L	<	0.0029									
	alpha-Endosulfan	µg/L	<	0.0029									
	beta-Endosulfan	µg/L	<	0.0059									
	Endosulfan Sulfate	µg/L	<	0.0039									
	Endrin	µg/L	<	0.0078									
	Endrin Aldehyde	µg/L	<	0.0098									
	Heptachlor	µg/L	<	0.0029									
	Heptachlor Epoxide	µg/L	<	0.0039									
	PCB-1016	µg/L	<										
	PCB-1221	µg/L	<										
	PCB-1232	µg/L	<										
	PCB-1242	µg/L	<										
	PCB-1248	µg/L	<										
	PCB-1254	µg/L	<										
	PCB-1260	µg/L	<										
	PCBs, Total	µg/L	<										
	Toxaphene	µg/L	<										
	2,3,7,8-TCDD	ng/L	<										
Group 7	Gross Alpha	pCi/L											
	Total Beta	pCi/L	<										
	Radium 226/228	pCi/L	<										
	Total Strontium	µg/L	<										
	Total Uranium	µg/L	<										
	Osmotic Pressure	mOs/kg											

TRC Modeling Output

TRC_CALC

1A	B	C	D	E	F	G
2	**TRC EVALUATION**				**Enter Facility Name in E3**	
3	**Input appropriate values in B4:B8 and E4:E7**				**Riverview Sanitary Authority**	
4	4800	**= Q stream (cfs)**		0.5	**= CV Daily**	
5	4.34	**= Q discharge (MGD)**		0.5	**= CV Hourly**	
6	4	**= no. samples**		0.075	**= AFC_Partial Mix Factor**	
7		**= Chlorine Demand of Stream**		0.52	**= CFC_Partial Mix Factor**	
8		**= Chlorine Demand of Discharge**			**= AFC_Criteria Compliance Time (min)**	
9	0.5	**= BAT/BPJ Value**			**= CFC_Criteria Compliance Time (min)**	
		= % Factor of Safety (FOS)			**=Decay Coefficient (K)**	
10	**Source**	Reference	**AFC Calculations**		Reference	**CFC Calculations**
11	**TRC**	**1.3.2.iii**	**WLA afc =**	1.038	**1.3.2.iii**	**WLA cfc =** 4.100
12	**PENTOXSD TRG**	**5.1a**	**LTAMULT afc =**	0.373	**5.1c**	**LTAMULT cfc =** 0.581
13	**PENTOXSD TRG**	**5.1b**	**LTA_afc=**	0.387	**5.1d**	**LTA_cfc =** 2.384
14						
15	**Source**		**Effluent Limit Calculations**			
16	**PENTOXSD TRG**	**5.1f**	**AML MULT =**	1.720		
17	**PENTOXSD TRG**	**5.1g**	**AVG MON LIMIT (mg/l) =**	0.500	**BAT/BPJ**	
18			**INST MAX LIMIT (mg/l) =**	1.170		

WLA afc	**(.019/e(-k*AFC_tc)) + [(AFC_Yc*Qs*.019/Qd*e(-k*AFC_tc))…**
	…+ Xd + (AFC_Yc*Qs*Xs/Qd)]*(1-FOS/100)
LTAMULT afc	EXP((0.5*LN(cvh^2+1))-2.326*LN(cvh^2+1)^0.5)
LTA_afc	wla_afc*LTAMULT_afc
WLA_cfc	**(.011/e(-k*CFC_tc) + [(CFC_Yc*Qs*.011/Qd*e(-k*CFC_tc))…**
	…+ Xd + (CFC_Yc*Qs*Xs/Qd)]*(1-FOS/100)
LTAMULT_cfc	EXP((0.5*LN(cvd^2/no_samples+1))-2.326*LN(cvd^2/no_samples+1)^0.5)
LTA_cfc	wla_cfc*LTAMULT_cfc
AML MULT	EXP(2.326*LN((cvd^2/no_samples+1)^0.5)-0.5*LN(cvd^2/no_samples+1))
AVG MON LIMIT	MIN(BAT_BPJ,MIN(LTA_afc,LTA_cfc)*AML_MULT)
INST MAX LIMIT	**1.5*((av_mon_limit/AML_MULT)/LTAMULT_afc)**