pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southcentral Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0054852**
Facility Type	**Industrial**	APS ID	**584672**
Major / Minor	**Minor**	Authorization ID	**1314884**

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

Applicant and Facility Information

Applicant Name	**Western Berks Landfill Acquisition Co. LLC (client , per appl)**	Facility Name	**Western Berks Community Landfill & Recycling Ctr/ Birdsboro**
Applicant Address	1000 New Ford Mill Road Morrisville, PA 19067	Facility Address	455 Poplar Neck Road Birdsboro, PA 19508-8300
Applicant Contact	Scott Perin, Area Director Ops, Greater Mid-Atlantic Area	Facility Contact	Scott Perin
Applicant Phone	(215) 428-4390	Facility Phone	(215) 428-4390/ Sperin@wm.com
Client ID	248695	Site ID	451623
SIC Code	4953 (NAICS Code 562)	Municipality	Cumru Township
SIC Description	Trans. & Utilities - Refuse Systems	County	Berks
Date Application Received	May 5, 2020, additions on May 21, 2020 & August 2, 2021	EPA Waived?	No
Date Application Accepted	May 28, 2020	If No, Reason	TMDL

Purpose of Application: to renew and transfer existing permit & evaluate TDS Waste Load Allocation per permittee request

Summary of Review

The previous permit was issued October 21, 2015 and amended July 1, 2017. The previous permit was administratively extended past the 'expiration date' of October 31, 2020. The previous owners/operators, Advanced Disposal, submitted a timely renewal application. Western Berks Landfill Acquisition Co LLC was taken over by Waste Management and the landfill's operations were assumed by Waste Management during October 2020. The renewal permit will still be issued to the Western Berks Landfill Acquisition Co LLC, a subsidiary of Waste Management. During phone conversations with DEP, Waste Management staff a) verified that the renewal application did not need changing except for the contact persons, and b) no leachate from the hazardous waste cells were being introduced into the treatment plant. The leachate from the hazardous waste area was still collected and disposed off-site.

Waste Management also requested that DEP re-evaluate the TDS permit limits and allow them less stringent TDS concentration limits because the treatment plant's effluent is not able to consistently achieve the current TDS effluent limits and an increase in TDS load would not cause the in-stream concentration to exceed 133% of background, a Delaware River Basin Commission stream standard. There were no TDS permit limit exceedances according to the submitted DMRs, i.e between January 1, 2019 and November 30, 2020: The maximum reported Monthly Average TDS concentration was 7085 mg/l compared to the Monthly Average TDS permit limit of 7700 mg/l. The Daily Maximum reported on the DMRs for the same period was 8940 mg/l compared to the Daily Maximum permit limit of 15,400 mg/l. However, the previous operator was believed to have been inappropriately diluting the discharge with hose water to achieve the TDS permit limits at outfall 001, according to Waste Management. The new operators ceased the practice of using hose water for dilution. Since November 2020, Waste Management has been trucking landfill leachate off-site for disposal rather than violating their NPDES permit limits for TDS. Any new treatment to reduce TDS concentrations would be cost-prohibitive they contend, whereas the facility's discharge does not cause an in-stream exceedance of TDS criteria or TDS Standards.

Approve	Deny	Signatures	Date
x		*Bonnie Boylan* Bonnie Boylan / Environmental Engineering Specialist	November 23, 2021
x		*Maria D. Bebenek for* Daniel W. Martin, P.E. / Environmental Engineer Manager	November 30, 2021
x		*Maria D. Bebenek* Maria D. Bebenek, P.E. / Environmental Program Manager	November 30, 2021

001, continuous discharge - landfill leachate, landfill gas condensate, building sumps and drains, sanitary wastewater

002-004, and 007-011, intermittent discharges – stormwater only

Design flow:

Effluent limits in the previous NDPES permit were based on a design flow of 0.047 MGD. The same design flow is carried forward in the draft renewal permit.

DMRs from 1/1/2019-11/30/2020 indicate:

- an average flow of 0.023 MGD;
- a Maximum Monthly Average (MMA) flow of 0.038 MGD;
- an average of Daily Maximum flows reported on each monthly DMR of 0.036 MGD.

DMRs since 12/1/2020 indicate 0 flow.

Outstanding Violations

None per eFacts/WMS for Clean Water.

Delaware River Basin Commission

The facility discharges to a stream within the Delaware River watershed and is thus subject to the Delaware River Basin Commission's (DRBC) requirements. A copy of the draft permit and Fact Sheet will therefore be sent to the DRBC for their review in accordance with State regulations and an interagency agreement. Any comments from DRBC will be considered.

Public Participation

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

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	001	Design Flow (MGD)	.047
Latitude	40º 17' 47" per appl.& last permit	Longitude	-75º 54' 42" per appl/last permit
Quad Name		Quad Code	
Wastewater Description:	IW Process Effluent with ELG		
Receiving Waters	Schuylkill River (WWF, MF)	Stream Code	0833
NHD Com ID	25993164 per eMapPA	RMI	72.3 per last permit
Drainage Area	923	Yield (cfs/mi^2)	0.29
Q_{7-10} Flow (cfs)	268 (or 173.2 MGD)	Q_{7-10} Basis	Online PA Stream Stats
Elevation (ft)	Approx.. 175'	Slope (ft/ft)	
Watershed No.	3-C	Chapter 93 Class.	WWF, MF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	Polychlorinated Biphenyls (PCBs)		
Source(s) of Impairment	Source Unknown		
TMDL Status	Final	Name	Schuylkill River PCB TMDL
Background/Ambient Data		Data Source –	
pH (SU)			
Temperature (°F)			
Hardness (mg/L)			
Other:			
Nearest Downstream Public Water Supply Intake		Pottstown (capacity 12 gpd)	
PWS Waters	Schuylkill river	Flow at Intake (cfs)	320 cfs Q7-10
PWS RMI	57, approx	Distance from Outfall (mi)	15.3 miles

Changes Since Last Permit Issuance:

The previous permit used 258.1 cfs as Q7-10 based on gage flow, LFY, and Drainage Areas (gage 01471510

Other Comments:

Upstream gage* = 01471510 at Reading. Q_{7-10} = 244 cfs; D.A. = 880 sq.mi.; LFY = 0.28 cfs/mi^2.

[If use this data to estimate Q_{7-10} at outfall 001: 0.28 gage LFY x D.A. at 001 923 mi^2 = 258.4 cfs, slightly less than more recent estimate shown in above table.]

Downstream gage* = 01472000 at Pottstown. Q_{7-10} = 258 cfs; D.A. = 1147 mi^2; LFY = 0.22.

*Source: Selected Streamflow Statistics for Stream Gage Locations in and near Pennsylvania, USGS, Stuckey and Roland, 2011 (minimum of 9 years of data)

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	002	Design Flow (MGD)	0
Latitude	40º 18' 31" per application/last permit	Longitude	-75º 55' 09" appl/last permit
Quad Name		Quad Code	
Wastewater Description:	Stormwater		
Receiving Waters	Schuylkill River (WWF, MF)	Stream Code	
NHD Com ID		RMI	
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	3-C	Chapter 93 Class.	WWF, MF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	Polychlorinated Biphenyls (PCBs)		
Source(s) of Impairment	Source Unknown		
TMDL Status	Final	Name	Schuylkill River PCB TMDL

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:

Discharge, Receiving Waters and Water Supply Information

Outfall No.	003	Design Flow (MGD)	0
Latitude	40º 18' 22" per appl./last permit	Longitude	-75º 55' 11" appl/last permit
Quad Name		Quad Code	
Wastewater Description:	Stormwater		
Receiving Waters	Schuylkill River (WWF, MF)	Stream Code	
NHD Com ID		RMI	
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	3-C	Chapter 93 Class.	WWF, MF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	POLYCHLORINATED BIPHENYLS (PCBS)		
Source(s) of Impairment	SOURCE UNKNOWN		
TMDL Status	Final	Name	Schuylkill River PCB TMDL

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:

Discharge, Receiving Waters and Water Supply Information

Outfall No.	004	Design Flow (MGD)	0
Latitude	40º 18' 14" per appl./last permit	Longitude	-75º 55' 8" appl/last permit
Quad Name		Quad Code	
Wastewater Description:	Stormwater		
Receiving Waters	Schuylkill River (WWF, MF)	Stream Code	
NHD Com ID		RMI	
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	3-C	Chapter 93 Class.	WWF, MF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	POLYCHLORINATED BIPHENYLS (PCBS)		
Source(s) of Impairment	SOURCE UNKNOWN		
TMDL Status	Final	Name	Schuylkill River PCB TMDL

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:

Discharge, Receiving Waters and Water Supply Information

Outfall No.	007	Design Flow (MGD)	0
Latitude	40º 17' 59" per appl./last permit	Longitude	-75º 54' 53" appl/last permit
Quad Name		Quad Code	
Wastewater Description:	Stormwater		
Receiving Waters	Schuylkill River (WWF, MF)	Stream Code	
NHD Com ID		RMI	
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	3-C	Chapter 93 Class.	WWF, MF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	POLYCHLORINATED BIPHENYLS (PCBS)		
Source(s) of Impairment	SOURCE UNKNOWN		
TMDL Status	Final	Name	Schuylkill River PCB TMDL

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:

Discharge, Receiving Waters and Water Supply Information

Outfall No.	008	Design Flow (MGD)	0
Latitude	40º 17' 50" per appl./last permit	Longitude	-75º 54' 40" appl/last permit
Quad Name		Quad Code	
Wastewater Description:	Stormwater		
Receiving Waters	Schuylkill River (WWF, MF)	Stream Code	
NHD Com ID		RMI	
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	3-C	Chapter 93 Class.	WWF, MF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	POLYCHLORINATED BIPHENYLS (PCBS)		
Source(s) of Impairment	SOURCE UNKNOWN		
TMDL Status	Final	Name	Schuylkill River PCB TMDL

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:

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	009	Design Flow (MGD)	0
Latitude	40º 17' 53" per appl./last permit	Longitude	-75º 54' 35" appl/last permit
Quad Name		Quad Code	
Wastewater Description:	Stormwater		
Receiving Waters	Schuylkill River (WWF, MF)	Stream Code	
NHD Com ID		RMI	
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	3-C	Chapter 93 Class.	WWF, MF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	POLYCHLORINATED BIPHENYLS (PCBS)		
Source(s) of Impairment	SOURCE UNKNOWN		
TMDL Status	Final	Name	Schuylkill River PCB TMDL
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:

Discharge, Receiving Waters and Water Supply Information

Outfall No.	010	Design Flow (MGD)	0
Latitude	40º 18' 18" per appl/ last permit	Longitude	-75º 54' 58" appl/last permit
Quad Name		Quad Code	
Wastewater Description:	Stormwater		
Receiving Waters	Schuylkill River (WWF, MF)	Stream Code	
NHD Com ID		RMI	
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	3-C	Chapter 93 Class.	WWF, MF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	POLYCHLORINATED BIPHENYLS (PCBS)		
Source(s) of Impairment	SOURCE UNKNOWN		
TMDL Status	Final	Name	Schuylkill River PCB TMDL

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:

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	011	Design Flow (MGD)	0
Latitude	40º 18' 16" per appl./last permit	Longitude	-75º 54' 42" appl/last permit
Quad Name		Quad Code	
Wastewater Description:	Stormwater		
Receiving Waters	Schuylkill River (WWF, MF)	Stream Code	
NHD Com ID		RMI	
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	3-C	Chapter 93 Class.	WWF, MF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	POLYCHLORINATED BIPHENYLS (PCBS)		
Source(s) of Impairment	SOURCE UNKNOWN		
TMDL Status	Final	Name	Schuylkill River PCB TMDL
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: WBLF Acquisition Co.

WQM Permit No.	Issuance Date
0692202	10/19/2006 (transferred)
0672210	6/19/2006

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Industrial	Biological (Industrial Waste)	Activated Sludge	No Disinfection	

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.09		Not Overloaded	Dewatering	Landfill

Per application:

1 940,000-gallon storage tank
1 chemical feed system
1 Stage-1 Aeration Tank
1 Stage-1 Clarifier, with RAS to Stage-1 Aeration Tank
1 Stage-2 Aeration Tank
1 Stage-2 Clarifier, with RAS to Stage-2 Aeration Tank
1 Chlorine Contact Tank
1 321,000-gallon storage tank which can be used as post-treatment or directed back to head of treatment plant
1 Aerated Sludge Holding Tank, with decant conveyed to one of the aeration tanks
1 Filter Press, with decant to the 940,000 gallon storage tank

Off-site disposal of sludge after filter press

Chemicals used: soda ash, aluminum chlorohydrate (coagulation), sodium hypochlorite

PREVIOUS PERMIT'S LIMITS, OUTFALL 001:

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day)		Concentrations (mg/L)				Minimum Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Grab
Total Residual Chlorine	XXX	XXX	XXX	0.5	XXX	1.64	1/day	Grab
Fecal Coliform (CFU/100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/week	Grab
Fecal Coliform (CFU/100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2,000 Geo Mean	XXX	10,000	1/week	Grab
$CBOD_5$	9.8	19.6	XXX	25.0	50.0	75	1/week	24-Hr Composite
Total Suspended Solids	10.6	23.5	XXX	27.0	60.0	75	1/week	24-Hr Composite
Total Dissolved Solids	2568	5137	XXX	7,700	15,400	19,250	1/week	24-Hr Composite
Ammonia-Nitrogen	1.9	3.9	XXX	4.9	10.0	12.2	1/week	24-Hr Composite
Phenol	0.006	0.010	XXX	0.015	0.026	0.037	1/month	24-Hr Composite
a-Terpineol	0.006	0.013	XXX	0.016	0.033	0.04	1/month	24-Hr Composite
Benzoic Acid	0.028	0.047	XXX	0.071	0.120	0.177	1/month	24-Hr Composite
p-Cresol	0.005	0.010	XXX	0.014	0.025	0.035	1/month	24-Hr Composite
Total Zinc	0.043	0.078	XXX	0.11	0.20	0.275	2/month	24-Hr Composite
Polychlorinated Biphenyls-Dry weather (pg/l)	XXX	XXX	XXX	XXX	Report	XXX	See Part C. Conditions	24-Hr Composite
Polychlorinated Biphenyls-Wet weather (pg/l)	XXX	XXX	XXX	XXX	Report	XXX	See Part C. Conditions	24-Hr Composite

PREVIOUS PERMIT's LIMITS, Stormwater-Only OUTFALLS 002-004, 007-011 (Representative Outfalls designated as 002, 009, 011):

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day)		Concentrations (mg/L)				Minimum Measurement Frequency	Required Sample Type
	Average Monthly		Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
pH (S.U.)	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
$CBOD_5$	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Chemical Oxygen Demand	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Suspended Solids	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Dissolved Solids	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Oil and Grease	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Organic Carbon	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Nitrate-Nitrite as N	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Ammonia-Nitrogen	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Arsenic	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Barium	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Cadmium	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Chromium	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Cyanide	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Iron	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Lead	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Magnesium	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Mercury	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Selenium	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Silver	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab

Compliance History

DMR Data for Outfall 001 (from October 1, 2020 to September 30, 2021)…No discharge reported since November 2020…trucking off-site instead

Parameter	SEP-21	AUG-21	JUL-21	JUN-21	MAY-21	APR-21	MAR-21	FEB-21	JAN-21	DEC-20	NOV-20	OCT-20
Flow (MGD) Average Monthly											0.006219	0.010883
Flow (MGD) Daily Maximum											0.03831	0.03135
pH (S.U.) Minimum											7.62	7.54
pH (S.U.) Instantaneous Maximum											8.28	8.28
TRC (mg/L) Average Monthly											0.358	0.378
TRC (mg/L) Instantaneous Maximum											0.50	0.49
CBOD5 (lbs/day) Average Monthly											0.57	0.41
CBOD5 (lbs/day) Daily Maximum											0.92	0.54
CBOD5 (mg/L) Average Monthly											4.5	2.7
CBOD5 (mg/L) Daily Maximum											6.0	4.0
TSS (lbs/day) Average Monthly											1.38	1.71
TSS (lbs/day) Daily Maximum											1.53	2.19
TSS (mg/L) Average Monthly											13.0	10.7
TSS (mg/L) Daily Maximum											16.0	11.0
Total Dissolved Solids (lbs/day) Average Monthly											609.3	885.6
Total Dissolved Solids (lbs/day) Daily Maximum											763.5	1207.9

Total Dissolved Solids (mg/L) Average Monthly											5450.0	5466.7
Total Dissolved Solids (mg/L) Daily Maximum											5900.0	6060.0
Fecal Coliform (CFU/100 ml) Geometric Mean											< 1	< 1
Fecal Coliform (CFU/100 ml) Instantaneous Maximum											< 1	< 1
Ammonia (lbs/day) Average Monthly											0.149	0.0203
Ammonia (lbs/day) Daily Maximum											0.28	0.0299
Ammonia (mg/L) Average Monthly											1.875	0.123
Ammonia (mg/L) Daily Maximum											3.63	0.15
Total Zinc (lbs/day) Average Monthly											0.005	0.0038
Total Zinc (lbs/day) Daily Maximum											0.0063	0.0043
Total Zinc (mg/L) Average Monthly											0.045	0.027
Total Zinc (mg/L) Daily Maximum											0.049	0.030
Phenol (lbs/day) Average Monthly											< 0.0008	< 0.0007
Phenol (lbs/day) Daily Maximum											< 0.0008	< 0.0007
Phenol (mg/L) Average Monthly											< 0.005	< 0.005
Phenol (mg/L) Daily Maximum											< 0.005	< 0.005
a-Terpineol (lbs/day) Average Monthly											< 0.0008	< 0.0007
a-Terpineol (lbs/day) Daily Maximum											< 0.0008	< 0.0007
a-Terpineol (mg/L) Average Monthly											< 0.005	< 0.005

a-Terpineol (mg/L) Daily Maximum											< 0.005	< 0.005
Benzoic Acid (lbs/day) Average Monthly											< 0.0015	< 0.0014
Benzoic Acid (lbs/day) Daily Maximum											< 0.0015	< 0.0014
Benzoic Acid (mg/L) Average Monthly											< 0.010	< 0.010
Benzoic Acid (mg/L) Daily Maximum											< 0.010	< 0.010
p-Cresol (lbs/day) Average Monthly											< 0.0008	< 0.0007
p-Cresol (lbs/day) Daily Maximum											< 0.0008	< 0.0007
p-Cresol (mg/L) Average Monthly											< 0.005	< 0.005
p-Cresol (mg/L) Daily Maximum											< 0.005	< 0.005
PCBs (Dry Weather) (pg/L) Daily Maximum										GG		
PCBs (Wet Weather) (pg/L) Daily Maximum										GG		

DMR Data for Outfall 002 (from October 1, 2020 to September 30, 2021)

Parameter	SEP-21	AUG-21	JUL-21	JUN-21	MAY-21	APR-21	MAR-21	FEB-21	JAN-21	DEC-20	NOV-20	OCT-20
pH (S.U.) Daily Maximum				7.80						7.97		
CBOD5 (mg/L) Daily Maximum				2.0						< 2		
COD (mg/L) Daily Maximum				< 10						< 10		
TSS (mg/L) Daily Maximum				3						< 2		
Total Dissolved Solids (mg/L) Daily Maximum				200						258		
Oil and Grease (mg/L) Daily Maximum				< 5						< 5		
Nitrate-Nitrite (mg/L) Daily Maximum				2.37						4.24		

Ammonia (mg/L) Daily Maximum				< 0.10						< 0.1		
Total Arsenic (mg/L) Daily Maximum				< 1.0						< 0.001		
Total Barium (mg/L) Daily Maximum				0.03						0.032		
Total Cadmium (mg/L) Daily Maximum				< 0.002						< 0.002		
Total Chromium (mg/L) Daily Maximum				< 0.01						< 0.010		
Total Cyanide (mg/L) Daily Maximum				< 0.020						< 0.020		
Total Iron (mg/L) Daily Maximum				0.11						< 0.05		
Total Lead (mg/L) Daily Maximum				< 0.001						< 0.001		
Total Magnesium (mg/L) Daily Maximum				12.7						14.4		
Total Mercury (mg/L) Daily Maximum				< 0.0002						< 0.0002		
Total Selenium (mg/L) Daily Maximum				< 0.001						< 0.001		
Total Silver (mg/L) Daily Maximum				< 0.005						< 0.005		
TOC (mg/L) Daily Maximum				2.0						2.9		

DMR Data for Outfall 009 (from October 1, 2020 to September 30, 2021)

Parameter	SEP-21	AUG-21	JUL-21	JUN-21	MAY-21	APR-21	MAR-21	FEB-21	JAN-21	DEC-20	NOV-20	OCT-20
pH (S.U.) Daily Maximum				7.78						7.97		
CBOD5 (mg/L) Daily Maximum				2.0						2		
COD (mg/L) Daily Maximum				< 10.0						< 10		
TSS (mg/L) Daily Maximum				4						< 2		
Total Dissolved Solids (mg/L) Daily Maximum				204						252		

Oil and Grease (mg/L) Daily Maximum				< 5						< 5		
Nitrate-Nitrite (mg/L) Daily Maximum				2.32						3.87		
Ammonia (mg/L) Daily Maximum				< 0.10						< 0.1		
Total Arsenic (mg/L) Daily Maximum				< 0.001						< 0.001		
Total Barium (mg/L) Daily Maximum				0.03						0.032		
Total Cadmium (mg/L) Daily Maximum				< 0.002						< 0.002		
Total Chromium (mg/L) Daily Maximum				< 0.01						< 0.01		
Total Cyanide (mg/L) Daily Maximum				< 0.020						< 0.020		
Total Iron (mg/L) Daily Maximum				0.10						< 0.05		
Total Lead (mg/L) Daily Maximum				< 0.001						< 0.001		
Total Magnesium (mg/L) Daily Maximum				13.4						14.1		
Total Mercury (mg/L) Daily Maximum				< 0.00002						< 0.0002		
Total Selenium (mg/L) Daily Maximum				< 0.001						< 0.001		
Total Silver (mg/L) Daily Maximum				< 0.005						< 0.005		
TOC (mg/L) Daily Maximum				2.2						2.7		

DMR Data for Outfall 011 (from October 1, 2020 to September 30, 2021)

Parameter	SEP-21	AUG-21	JUL-21	JUN-21	MAY-21	APR-21	MAR-21	FEB-21	JAN-21	DEC-20	NOV-20	OCT-20
pH (S.U.) Daily Maximum				8.1						7.97		
CBOD5 (mg/L) Daily Maximum				3						2		
COD (mg/L) Daily Maximum				< 10						< 10		

TSS (mg/L) Daily Maximum				6						< 2		
Total Dissolved Solids (mg/L) Daily Maximum				294						264		
Oil and Grease (mg/L) Daily Maximum				< 5						< 5		
Nitrate-Nitrite (mg/L) Daily Maximum				4.73						3.92		
Ammonia (mg/L) Daily Maximum				< 0.10						< 0.1		
Total Arsenic (mg/L) Daily Maximum				0.0012						< 0.001		
Total Barium (mg/L) Daily Maximum				0.01						0.031		
Total Cadmium (mg/L) Daily Maximum				< 0.002						< 0.002		
Total Chromium (mg/L) Daily Maximum				< 0.01						< 0.010		
Total Cyanide (mg/L) Daily Maximum				< 0.020						< 0.020		
Total Iron (mg/L) Daily Maximum				0.14						< 0.05		
Total Lead (mg/L) Daily Maximum				< 0.001						< 0.001		
Total Magnesium (mg/L) Daily Maximum				16.7						14.0		
Total Mercury (mg/L) Daily Maximum				< 0.0002						< 0.0002		
Total Selenium (mg/L) Daily Maximum				< 0.001						< 0.001		
Total Silver (mg/L) Daily Maximum				< 0.005						< 0.005		
TOC (mg/L) Daily Maximum				2.3						2.6		

Compliance History

September 21, 2020 – DEP Inspection, while Landfill was still being operated by Advanced Disposal. No violations were cited. No discharge at outfall 001 was occurring. No influent flow meter (not a requirement but recommended).

May 6, 2015 - Administrative File Review. Violation Noted for failure to submit completed monitoring reports. Corrected.

March 18, 2015 Inspection – No Violations noted.

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November 2020 – Waste Management notified DEP that October and November DMR data might not be representative of effluent following their acquisition of landfill and initial review. As of November 2020, they ceased direct discharge at outfall 001 and began trucking wastewater off-site for disposal. New operators later requested during a phone conference that DEP re-evaluate the TDS limits at 001 because they believed the current treatment plant would not be able to consistently achieve the permit limits but did not want to continue trucking wastewater off-site indefinitely or incur expense for new treatment.

Effluent Non-Compliance in DEP's eDMR System:

Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Sampling Frequency	Corrective Action	External Comments
07/01/2019	07/31/2019	Fecal Coliform	Instantaneous Maximum	140000	> 1000	CFU/100 ml	Final Effluent (001)	1/week	See attached comments	suspected lab error; see attached comparative results table
07/01/2019	07/31/2019	Fecal Coliform	Geometric Mean	742.7	> 200	CFU/100 ml	Final Effluent (001)	1/week	See attached comments	suspected lab error; see attached comparative results table
05/01/2019	05/31/2019	Fecal Coliform	Instantaneous Maximum	5100	> 1000	CFU/100 ml	Final Effluent (001)	1/week	See attached comments	
09/01/2016	09/30/2016	Total Dissolved Solids	Average Monthly	6352.5	> 5000	mg/L	Final Effluent (001)	1/week		
09/01/2016	09/30/2016	Zinc, Total	Average Monthly	.14	> .11	mg/L	Final Effluent (001)	2/month		
6/01/2016	06/30/2016	Total Dissolved Solids	Average Monthly	5125	> 5000	mg/L	Final Effluent (001)	1/week		

+There were no PCB sample results reported during 2015, 2017, 2018, 2019, and 2020 even though there were discharges at outfall 001 during those reporting periods.

Development of Effluent Limits for Outfall 001

Technology-Based Effluent Limitations (TBELs)

Federal Effluent Limitation Guidelines (ELGs) for Landfills were promulgated in 2000. The federal ELGs are intended to be met by treatment without dilution from other wastestreams. The below ELG limits for Non-Hazardous Waste Landfills are considered Best Practicable Control Technology Currently Available (BPT), Best Conventional Pollutant Control Technology (BCT), and Best Available Technology Economically Achievable (BAT):

Pollutant	Limit (mg/l)	SBC	Federal ELGs
pH	6.0 – 9.0 S.U.	Min – Max	40 CFR Part 445 Subpart B
BOD_5	37	Average Monthly	40 CFR Part 445 Subpart B
	140	Maximum Daily	
Total Suspended Solids	27	Average Monthly	40 CFR Part 445 Subpart B
	88	Maximum Daily	
Ammonia	4.9	Average Monthly	40 CFR Part 445 Subpart B
	10	Maximum Daily	
a-Terpineol	0.016	Average Monthly	40 CFR Part 445 Subpart B
	0.033	Maximum Daily	
Benzoic Acid	0.071	Average Monthly	40 CFR Part 445 Subpart B
	0.12	Maximum Daily	
p-Cresol	0.014	Average Monthly	40 CFR Part 445 Subpart B
	0.025	Maximum Daily	
Phenol	0.015	Average Monthly	40 CFR Part 445 Subpart B
	0.026	Maximum Daily	
Zinc	0.11	Average Monthly	40 CFR Part 445 Subpart B
	0.20	Maximum Daily	

There are also ELGs for Hazardous Waste Landfills, 40 CFR Part 445 Subpart A, which would be applicable if in the future the permittee conveyed wastewater from sections of the site classified for Hazardous Waste. At this time, the permittee has relayed to the DEP that any such plans have not materialized. Wastewater from the Hazardous Waste area is segregated and disposed of off-site.

TBELs that are not ELGs:

The following technology-based limitations have been considered or applied, subject to water quality analysis and BPJ where applicable:

Parameter	Limit (mg/l unless stated otherwise)	SBC	Federal Regulation	State Regulation	DRBC Regulation
pH	6.0 – 9.0 S.U.	Min – Max	133.102(c)	95.2(1)	
Total Residual Chlorine	0.5	Average Monthly	-	92a.48(b)(2)	
Oil and Grease	15	Average Monthly		95.2(2)(ii)	
	30	Instant. Maximum		95.2(2)(ii)	
Dissolved Iron	7.0	Daily Maximum		95.2(4)	
Total Phosphorus	2.0, when phosphorus in discharge contributes to or threatens to impair uses in flowing surface water	Average Monthly		96.5(c)	
$CBOD_5$	25	Average Monthly	133.102(a)(4)(i)	92a.47(a)(1)	

Total Suspended Solids	30	Average Monthly	133.102(b)(1)	92a.47(a)(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 Dissolved Solids	2000 for new discharges or for expanding facilities with increased mass loading over 5000 lbs/day since Aug 2010 unless variance granted by DEP	Average Monthly		95.10	
Total Dissolved Solids	1000 mg/l or a concentration that will not cause an in-stream exceedance of the lesser of 500 mg/l or 133% over background	Average Monthly			18 CFR Part 410
Total Suspended Solids	100	Average Monthly			18 CFR Part 410, 3.10.4.D.
Ammonia	20	Average Monthly			18 CFR Part 410, 4.30.5.D.

Unlike the ELG TBELs which are not discretionary, the above TBELs only need to be imposed when there is a Reasonable Potential that the discharge will exceed them. The more stringent TBEL is imposed when there are more than one.

pH, Oil and Grease, and TRC:

The TBELs in the above table have been included in the draft permit for **pH and Total Residual Chlorine** (TRC). The permit application included a maximum concentration of 2.0 mg/l for Oil and Grease in the effluent. No reasonable potential to exceed the TBEL of 15 mg/l is indicated. No permit limit has been imposed for Oil and Grease, the same as the previous permit.

Dissolved Iron:

No limit or monitoring requirement is believed necessary because the maximum concentration reported in the permit application for the discharge at outfall 001 was 0.8 mg/l, well below the TBEL of 7.0 mg/l.

Total Phosphorus:

Pa Code Chapter 96.5(c) stipulates that this TBEL is only to be imposed for waterways that are impaired due to high concentrations of phosphorus. The Schuylkill River at this location and downstream has not been assessed as impaired due to phosphorus or other nutrients. This TBEL is therefore not applicable.

$CBOD_5$:

The TBELs in the above table have been included in the draft permit for $CBOD_5$, given that sanitary wastewater is included in the discharge. It is not necessary to have both a BOD_5 and $CBOD_5$ limit, so the more stringent one has been imposed: $CBOD_5$ of 25 mg/l rather than the ELG of 37 mg/l for BOD_5, the same as in the previous permit.

Fecal Coliform:

The limits from the above table have been imposed, the same as in the previous permit.

Total Dissolved Solids:

The TDS requirements of Title 25 of PA Code Chapter 95.10 do not impose specific limits on existing dischargers who are not increasing their TDS mass loads by more than 5000 lbs/day as an annual average. Existing dischargers increasing their TDS mass load by more than 5000 lbs/day would be subject to these Chapter 95.10 requirements: 1) a 2000 mg/l TDS Monthly Average permit limit or 2) requesting a variance from the 2000 mg/l limit after "a watershed analysis conducted by the Dept determines that a variance will not result in a reduction of available assimilative capacity for TDS to less than 25% of the total available assimilative capacity at the next downstream point of water quality standards compliance. Available assimilative capacity will be calculated using design flow conditions under Section 96.4(g) relating to TMDLs and WQBELs. [95.10(f)(1)]" Title 25 PA Code Chapter 96.4(g): Use Q7-10 for TMDLs and WQBELs for fish criteria and THH criteria, and Qh (Harmonic flow) for Carcinogen criteria. The State criteria for TDS is a THH criterion.

The permittee is not increasing their mass load by more than 5000 lbs/day. The mass loading allowed by the previous permit was 2568 lbs/day as a Monthly Average. Allowing a mass load of 4704 lbs/day (see the discussion in the WBEL section of this Fact Sheet) represents an increase of 2136 lbs/day.

DRBC also has TDS requirements: an effluent limit of 1000 mg/l as a Monthly Average (a TBEL) unless a higher concentration would not cause an in-stream TDS concentration exceeding the lesser of 500 mg/l or 133% above background (a WQBEL). For this facility, WQBELs apply for TDS. See the discussion in the WQBEL section of the Fact Sheet.

Total Suspended Solids:

The Monthly Average ELG is more stringent than the regulatory standard and has been imposed in the permit. The TSS limits in the draft permit are the same as in the previous permit.

Ammonia:

The ELGs are the more stringent TBELs for Ammonia and have been imposed, the same as in the previous permit.

TBELs: Best Professional Judgement (BPJ) Limitations

TBELs based on BPJ should be developed for pollutants of concern when there are no applicable ELGs. In this case, there are ELGs for landfills.

Water Quality-Based Effluent Limitations (WQBELs)

Total Maximum Daily Load (TMDL): Schuylkill River PCB TMDL

The Schuylkill River was determined to be impaired for fish consumption due to Polychlorinated Biphenyls. The Schuylkill River PCB TMDL was approved in 2007 to address the impairment. The TMDL set a target concentration of 44 picograms per liter (pg/l) for each point source, required sampling of direct discharges to the Schuylkill River as Phase I, and required PCB Pollutant Minimization Plans (PMP) to be developed and implemented as Phase II if the Phase I data showed significant PCB concentrations in the discharge.

PCB sampling conducted at outfall 001 and submitted to the DEP indicate an average concentration of 1307 pg/l, well over 44 pg/l. Thus a PCB Pollution Management Plan (PMP) is needed. The requirement to develop, submit to DEP for approval, and implement such a plan has been added to the permit's Part C conditions.

OTHER WQBELs:

CBOD5 and Ammonia:

The discharge includes sanitary wastewater and the Form 50 Leachate analyses indicated high levels of Ammonia. DEP's WQM 7.0 model was used, with a design flow of 0.047 MGD and the Q_{7-10} stream low flow. Because the river's designated use is Cold Water Fishes, a stream temperature of 20^{o}C was used. Because this model does not account for mixing but the discharge is to a wide river where initial mixing would not extend across the entire width, the Low Flow Yield (LFY) input value was multiplied by 1/3, consistent with the permits for other dischargers to the Schuylkill River. The model results are attached. The model did not indicate that limits more stringent than the TBELs were necessary to protect the water quality. The model defaulted to the TBELs for both CBOD5 and Ammonia. These limits are the same as in the previous permit.

The DEP's WQM model applies the Implementation Guidance for Section 93.7 Ammonia Criteria, 391-2000-013, 11/97.

Total Residual Chlorine (TRC):

To determine if a WQBEL for TRC is needed, the DEP's TRC model was used. Model inputs included a design discharge flow of 0.047 MGD and a stream low-flow of 268 cfs, the Q_{7-10}. The model defaulted to the TBEL of 0.5 mg/l as a monthly average, indicating that the TBEL is sufficiently protective of the receiving water's uses. These limits are the same as in the previous permit. The model results are attached. Calculations and a description of the TRC model can be found in DEP's Technical Guidance 391-2000-015.

Toxics:

Federal regulations (40 CFR 122.44) require NPDES permits to contain effluent limits for toxic pollutants in a discharge whenever there is a reasonable potential for those pollutants to cause an in-stream exceedance of surface water quality criteria downstream of the discharge.

DEP uses a model to calculate WQBELs and to evaluate "Reasonable Potential". DEP has recently replaced its PENTOX model, an Access-based software, with an Excel version titled Toxics Management Spreadsheet (TMS). The logic and calculations were transferred. Calculations used in the model are based on DEP's Water Quality Toxics Management Strategy document [361-0100-003] and Determining Water-Quality Based Effluent Limits document [391-2000-003]. The model is described in Technical Reference Guidance for PENTOX [391-2000-011]. The model simulation pages are attached. The model performs all calculations, compares each resultant WQBEL based on each criterion, and then determines the most stringent WQBEL which is shown on the result pages.

DEP's SOP for Establishing WQBELs and Permit Conditions for Toxic Pollutants in NPDES Permits for Existing Dischargers outlines how Reasonable Potential Analysis is performed and when limits or monitoring requirements are imposed in permits. For example, when the discharge concentration is more than 50% of the calculated WQBEL, a limit would generally be imposed. For a conservative pollutant, a discharge concentration more than 10% of the WQBEL generally triggers a monitoring requirement in the permit. For a non-conservative pollutant, a discharge concentration that is more than 25% of the WQBEL generally triggers a monitoring requirement in the permit.

In this case, the values in the discharge concentration column represent the greater of a) the daily maximum concentrations reported on eDMRs between January 2019 and October 2021 or b) the maximum concentrations reported in the renewal application.

The application allows site-specific data to be submitted but the permittee did not submit any such data, except for an upstream Hardness of 138 mg/l which was apparently the result of a single sample collected on March 17, 2020. The default value of 100 mg/l was instead used in the model for Stream Hardness, a conservative assumption. (Note that no limits for metals were recommended using 100 mg/l as the upstream Hardness. The input value for Hardness only affects recommended limits for some metals. An input value of 138 mg/l for stream Hardness would not have changed the results: no limits for metals would similarly have been recommended.) Other inputs used in the model were as follows:

-Consistent with other permits for discharges to the Schuylkill River in Berks County, an estimated width:depth ratio of 100 was used as a model input to improve the accuracy of the results.

-The Low Flow Yield (LFY) and Drainage Area (DA) model inputs are from USGS PA Stream Stats. (See page 4 of the Fact Sheet)

-The model calculates the Q_{7-10} flow from the LFY and DA inputs, or uses an inputted value for Q_{7-10}, and then estimates the Q_{1-10} flow, the Q_{30-10} flow, and the harmonic flow from the Q_{7-10} flow and applies the appropriate river flow in its calculations. The Technical Support Document for Water Quality-Based Toxics Control (TSD) (EPA, 1991) and the Pennsylvania Water Quality Standards (PA WQS) recommend the flow conditions for use in calculating WQBELs using steady-state modeling: WQBELs intended to protect aquatic life uses should be based on the lowest seven-day average flow rate expected to occur once every ten years (Q_{7-10}) for chronic criteria and the lowest one-day average flow rate expected to occur once every ten years (Q_{1-10}) for acute criteria. For a CRL criteria (carcinogen), the WQBEL is calculated based on the harmonic flow of the receiving water and lifetime exposure of the parameter.

-elevations and River Mile Indexes were taken from eMapPA

-Default values were used for discharge Hardness (100 mg/l), discharge pH (7 s.u.), and fate coefficients.

The following limitations were recommended by the water quality model (output files attached):

Parameter	Limit (ug/l)	SBC	Model
Acrylamide	948	Average Monthly	Toxics Management Spreadsheet Vsn 1.3 (formerly known as PENTOX)
Aldrin	0.011	Average Monthly	Toxics Management Spreadsheet Vsn 1.3 (formerly known as PENTOX)
Chlordane	4.06	Average Monthly	Toxics Management Spreadsheet Vsn 1.3 (formerly known as PENTOX)
4,4-DDT	0.41	Average Monthly	Toxics Management Spreadsheet Vsn 1.3 (formerly known as PENTOX)
4,4-DDE	0.27	Average Monthly	Toxics Management Spreadsheet Vsn 1.3 (formerly known as PENTOX)
Dieldrin	0.014	Average Monthly	Toxics Management Spreadsheet Vsn 1.3 (formerly known as PENTOX)
Heptachlor	0.081	Average Monthly	Toxics Management Spreadsheet Vsn 1.3 (formerly known as PENTOX)
Heptachlor Epoxide	0.41	Average Monthly	Toxics Management Spreadsheet Vsn 1.3 (formerly known as PENTOX)
Toxaphene	0.74	Average Monthly	Toxics Management Spreadsheet Vsn 1.3 (formerly known as PENTOX)

For each of the above parameters, the model recommended a limit based on the fact that the Quantitation Level used (also called the lab reporting level) was not as sensitive as DEP's recommended Target Quantitation Level (TQL). Because all of the 9 influent samples and all of the 3 effluent samples reported in the permit application as well as the reported results on the Waste program's Form 50 for Leachate analysis (3rd Quarter 2020 through 3rd Quarter 2021) resulted in "non-detect" and because these parameters have not been identified as parameters of concern at municipal landfills, such as in the federal ELGs, no limits have been added to the permit at this time. The permittee is advised to read and follow application instructions in future, including using DEP's TQLs.

To identify any other parameters of concern at the landfill, the reported *influent* concentrations were entered into a second TMS/model simulation: the greater of the maximum concentrations from the permit application or the maximum concentrations reported on the 5 most recent Form 50 results were input. If the *influent* concentrations and loads could cause an in-stream exceedance of water quality criteria, those parameters would be considered for inclusion in the permit-- due to the possibility of the treatment facility's effectiveness decreasing or being inconsistent or a plant failure-- regardless of the model's recommendations following the Reasonable Potential evaluation of the *effluent* concentrations and loads. The second simulation using detected parameter concentrations for the *influent* reported in the permit application, did not result in any other parameters recommended for WQBELs or monitoring requirements.

Total Dissolved Solids:

Using a design flow of 0.047 MGD for outfall 001 and an average monthly TDS concentration of 12,000 mg/l*, and the same mass balance equation used by DRBC for their TDS determinations for "reviewable projects" (typically discharges greater than 50,000 gpd), this discharge alone would not cause an in-stream TDS concentration exceeding the lesser of 500 mg/l or 133% above background:

$$CsQs + CdQd + CdQd \leq CtQt, \text{ where…}$$

Cs = ambient TDS concentration in Schuylkill River, 202.5 mg/l per 10 years of most recent data at upstream WQN 113
Qs = Q7-10 of Schuylkill River = 268 cfs = 173.2 MGD
Cd = discharge concentration at outfall 001 = 12,000 mg/l as a monthly average*
Qd = discharge design flow at outfall 001 = 0.047 MGD
Ct = 269.3 mg/l (must be the lesser of 500 mg/l or 133% of Cs: 202.5 mg/l * 133% = 269.3 mg/l, < 500 mg/l, MCL)
Qt = Qs + Qd = 173.2 + 0.047 = 173.25 MGD

(202.5 mg/l * 173.2 MGD) + (12,000 mg/l * 0.047 MGD) $\leq$ 269.3 mg/l * 173.25 MGD
35,637 $\leq$ 46,656.2

OR, solving for Ct:

(202.5 mg/l * 173.2 MGD) + (12,000 mg/l * 0.047 MGD) $\leq$ Ct * 173.25 MGD
Ct = 206 mg/l, an increase of only 1.6% above ambient

*A study conducted in June 2021 and forwarded to the DEP as an application addendum indicated a concentration of 18,000 mg/l in the gas well liquid portion of the total discharge, 1400 gpd as the estimated flow for the gas well liquid, and a maximum concentration of 10,900 mg/l for the "regular" site leachate from the 9 samples collected during the study:

C1Q1 + C2Q2 = CtQt
(18,000 mg/l)(0.0014 MGD) + (10,900 mg/l)(0.047 MGD) = Ct (0.0014 MGD+ 0.047 MGD)
Ct = 11,105 mg/l

The consultant proposed using the mean of 10,000 mg/l + 3 standard deviations for concentration. Thus replacing 10,900 mg/l with 11,552 mg/l yields:

(18,000 mg/l)(0.0014 MGD) + (11,552 mg/l)(0.047 MGD) = Ct (0.0014 MGD+ 0.047 MGD)
Ct = 11,738 mg/l, rounded up to 12,000 mg/l

Note: the influent TDS concentration in the permit application was reported as 6050 mg/l as a Daily Maximum based on 9 samples.

A TMS simulation was run with 12,000 mg/l as the discharge concentration, 0.047 MGD as the design flow, and the downstream water intake location and pumping capacity. The model indicated there was no threat to the downstream drinking water intake. See attached.

TDS Baseline, relevant to Chapter 95.10:
The Maximum daily discharge load of TDS authorized by DEP as of August 20, 2010, was 5137 lbs/day according to the 2007 NPDES permit. The Monthly Average TDS mass loading allowed by the 2007 NPDES permit was 2568 lbs/day.

Given that there are multiple dischargers on the same segment of the Schuylkill River with TDS in their discharges, DEP believed it prudent to estimate the cumulative TDS load on the river segment to ensure there would be no adverse impact to the downstream PADWIS when the multiple dischargers' loads were considered together. The TMS simulation is attached. Even with conservative assumptions as shortcuts (i.e. using the largest permit concentration limit in the dischargers' permits and the location of the last TDS significant discharger closest to the PADWIS location rather than each specific discharge location), the simulation indicates that increasing the cumulative TDS mass load by 4704 lbs/day would not cause the instream concentration at the PADWIS intake to exceed 500 mg/l.

Water Quality Network (WQN) monitoring station upstream of this discharge:
WQN113 @ Bern….Background TDS of 202.5 mgl as an average, from Nov 2010 to Nov. 2020. RMI = 96.0

RMI 92.5 (approximate)	PA0024074 Shoemakersville STP, outfall 001
RMI 92.3 (approximate)	PA0011169 Materion Brush, outfall 001
RMI 89 (approximate)	PA0070149 Leesport STP, outfall 001
RMI 86.7 (approximate)	PA0034304 Cambridge Lee, outfalls 001 & 002
RMI 86.4 (approximate)	PA0088323 Ontelaunee Power, outfall 001
RMI 80.3 (approximate)	PA0028720 Reading Regional Airport, outfall 001
RMI 78.24 (approximate)	PA0014672 Exide Trust, outfalls 101 & 201
RMI 78.2 (approximate)	PA0013129 Carpenter Tech, outfall 901
RMI 75.0 (approximate)	PA0011371 Black & Decker GWCU
RMI 72.8 (approximate)	PA0026549 Reading Fritz Island WWTP, outfall 001
RMI 72.3 (approximate)	PA0054852 Western Berks LF, outfall 001
RMI 71.4 (approximate)	PA0085065 Process Recovery LF, outfall 001
RMI 71.3 (approximate)	PA0010782 Titus Generating Station, outfall 004
RMI 67 (approximate)	PA0051900 Robeson Twp. STP, outfall 001
RMI 65.6 (approximate)	PA0026972 Exeter WWTP/PA American, outfalls 001 & 002
RMI 63.5 (approximate)	PA0021709 Birdsboro STP/Power Station IW, to Hay Creek≤0.3 miles to Schuylk..River)
RMI 58.8 (approximate)	PA0070351 Amity Twp STP, outfall 001
RMI 56.6 (approximate)	PA0052647 Pottstown Boro Water Treatment Plant, outfalls 001 & 002

WQN111@Pottstown / PADWIS … RMI = 57.0
Avg TDS from Jan 2019 through June 2021 = 212 mg/l.

Cumulative TDS allowed load from all dischargers shown above at present time = 434,612 lbs/day as an estimate, based on permit limits and design flows (38.2 MGD cumulative) or DMRs when permit required TDS monitoring but no limit.

434,612 + increase for Western Berks of 4704 = 439,316 lbs/day which is less than the mass load allowable on the TMS simulation result pages: 550,430 lbs/day, as a Monthly Average, even with conservation assumptions/shortcuts used.

Mass Load Limits:

Mass load limits at outfall 001 have been carried forward from the previous permit and were developed from DEP's Technical Guidance for Development and Specification of Effluent Limitations [document 362-0400-001] and DEP's SOP Establishing Effluent Limitations for Individual Industrial Permits.

Monitoring Frequencies and Sample Types:

The monitoring frequencies and sample types for outfall 001 have been carried forward from the previous permit and were developed from DEP's Technical Guidance for Development and Specification of Effluent Limitations (362-0400-001) and DEP's SOP for New and Reissuance Individual Industrial Wastewater NPDES Permits.

Nutrient Monitoring:

Because the receiving water has not been assessed as impaired for nutrients, no limits for Total Nitrogen (TN) or Total Phosphorus (TP) have been included. DEP's SOP Establishing Effluent Limitations for Individual Industrial Permits recommends a monitoring requirement, as a minimum, for industrial facilities that discharge TN in excess of 75 lbs/day or Total Phosphorus TP in excess of 25 lbs/day.

The average monthly load reported in their application for TKN+NO3+NO2 was 5.1 lbs/day at outfall 001. Alternatively, the combined average concentration for TKN+NO3+NO2 as reported in the application was 36 mg/l: 36 mg/l x 0.047 MGD x 8.34 c.f. = 14.1 lbs/day, well under 75 lbs/day. No monitoring requirement has been added for TN.

The average monthly load reported in their application for TP was 0.1 lbs/day at outfall 001. Alternatively, the average concentration for TP reported in the application was 1.1 mg/l: 1.1 mg/l x 0.047 MGD x 8.34 c.f. = 0.43 lbs/day, well under 25 lbs/day. No monitoring requirement has been added for TP.

The discharge is located outside of the Chesapeake Bay watershed and is therefore not subject to the Chesapeake Bay TMDL requirements for nutrient reduction.

E. Coli Monitoring:

The annual monitoring requirement for **E. Coli** has been added from the previous permit as a result of regulatory changes published in the July 11, 2020 PA Bulletin and consistent with DEP's Standard Operating Procedures (SOPs). This parameter has been added due to the fact that sanitary sewage is part of the discharge.

Anti-Backsliding:

The Total Dissolved Solids (TDS) concentration and mass load limits at outfall 001 are less stringent than in the previous permit. For both the previous permit and this renewal permit, the permit limits for TDS are WQBELs. The State water quality criteria for TDS has not changed, 500 mg/l as a Threshold Human Health (THH) criteria. The DRBC standard has not changed: TDS in the discharge shall not cause an instream exceedance of the lesser of 500 mg/l or 133% over background. New information, however, is now available. More recent monitoring of TDS at the upstream WQN station was used to determine ambient TDS in the River. More recent stream flow data and drainage areas were also used, based on USGS available data.

The permit limits for TDS have been developed to prevent the discharge(s) from causing an in-stream exceedance of water quality criteria.

The receiving water is not impaired for TDS based on upstream monitoring at WQN 0113 and downstream monitoring at WQN 0111 (known as USGS gage 01472000). Average TDS at WQN 0113 over 10 years, from November 2010 through December 2020, was 202.5 mg/l. (See attached.) Average TDS at downstream WQN 011 between January 2019 and June 2021 (28 samples) was 212 mg/l. (See attached.) At both locations, the concentrations were below the State criteria of 500 mg/l.

The receiving water will still be able to meet its designated uses, supporting Warm Water Fishes and Migratory Fishes and Recreational uses, and satisfy the State's antidegradation policy [Title 25 PA Code Chapter 93.4]. The receiving water is impaired for Fish Consumption due to the presence of PCBs, a separate issue. A TMDL exists for the receiving water but it is for PCBs, not for TDS.

Section 402(o)(1) of the Clean Water Act (CWA) prohibits the relaxation of effluent limitations based on state standards, such as water quality standards or treatment standards, unless the change is consistent with CWA section 303(d)(4). Section 303(d)(4) may be applied independently of section 402(o). CWA section 303(d)(4) has two parts: paragraph (A), which applies to nonattainment waters, and paragraph (B), which applies to attainment waters. Because the Schuylkill River is not impaired for TDS, Section 303(d)(4)(B) applies. Under CWA section 303(d)(4)(B), a limitation based on a Waste Load Allocation or other water quality standard may only be relaxed where the action is consistent with the State's antidegradation policy. [Source: EPA Permit Writers Manual, Chapter 7, September 2010]

Because the less stringent TDS limits will not result in the discharge violating State Standards or the State designated or existing uses or the State's antidegradation policy, backsliding is considered permissible in accordance with Section 303(d)(4) of the Clean Water Act and EPA guidance.

Chemical Additives:

Chemical Additive requirements, standard to most industrial NPDES permits using or potentially using chemical additives in the future, have been included. The permit application did not indicate the current use of any "chemical additives" as defined by DEP's SOP on Chemical Additives. The Part C Conditions have the standard language for Chemical Additives in case there is a change in operations during the permit term: chemical additives meeting DEP's definition need to be evaluated by DEP, added to DEP's Approved Chemical Additive List before they can be used, and not used in quantities that would cause their concentration in the discharge to exceed calculated WQBELs. DEP is using an EPA-approved methodology for calculating safe effect levels of chemical additives based on eco-toxicity and then using those safe effect levels to develop WQBELs from which maximum usage rates are calculated. The safe effect levels of all DEP-approved Chemical Additives are posted online at a link from the DEP website: www.dep.pa.gov >Search 'Chemical Additives' > click on 'Approved Chemical Additive List'.

Development of Effluent Limits for Stormwater Outfalls 002-004 and 007-011

State and federal regulations require that stormwater discharges from industrial activities, including SIC code 4953, be covered by a NPDES permit.

The permit application described the stormwater discharges thus: runoff from closed landfill areas, borrow areas, storage and maintenance areas; runoff almost entirely from impervious areas.

There is no stormwater contacting an open face of a landfill, so the federal ELGs for stormwater at landfills do not apply. The ELGs for Landfills, 40 CFR 445, excludes "non-contaminated stormwater" from its definition of "landfill wastewater" and describes "non-contaminated storm water" thus:

> Storm water which does not come in direct contact with landfill wastes, the waste handling and treatment areas, or landfill wastewater that is defined in paragraph (f) of this section. Non-contaminated storm water includes storm water which flows off the cap, cover, intermediate cover, daily cover, and/or final cover of the landfill.

The monitoring requirements in the draft permit include those found in the DEP's general permit for stormwater PAG-03, Appendix C for Landfills, which was public noticed and put into effect September 2016 . DEP's PAG-03 permit is modeled after the EPA's general stormwater permit. Semi-annual monitoring at representative stormwater outfalls will thus be required for **pH, TSS, COD, Ammonia, and Total Iron**. Because this site is also a Hazardous Waste Treatment, Storage, or Disposal facility, the monitoring requirements found in DEP's PAG-03 Appendix A are also included, the same as the previous permit: **pH, TSS, COD, Ammonia, Total Arsenic, Total Cadmium, Total Cyanide, Total Lead, Total Mercury, Total Selenium, Total Silver.**

Upon review of the sampling data at representative stormwater outfalls 002, 009, and 011, (1) there is no indication that any other parameter needs to be monitored; and (2) the monitoring requirement for the following parameters, included in the previous permit, have been omitted in the draft renewal permit: Total Barium, CBOD5, Total Chromium, Total Magnesium, Nitrate-Nitrite, Oil and Grease, TDS, and TOC. See below table.

Besides monitoring, the PAG-03 requires that Best Management Practices (BMPs) be employed, a PPC Plan be kept updated and followed, semiannual inspections of each stormwater outfall be conducted, and a stormwater annual report be submitted to the DEP. These requirements are included in the Part C conditions of this individual permit. The "sector-specific BMPs" from the PAG-03 for landfills are as follows and have been included in the draft permit:

A. The permittee shall implement a preventive maintenance program and shall maintain all elements of leachate collection and treatment systems, to prevent commingling of leachate with stormwater, and the integrity and effectiveness of any intermediate or final cover (including repairing the cover as necessary), to minimize the effects of settlement, sinking, and erosion.

B. Provide temporary stabilization (e.g., temporary seeding, mulching, and placing geotextiles on the inactive portions of stockpiles) for the following in order to minimize discharges of pollutants in stormwater: materials stockpiled for daily, intermediate, and final cover; inactive areas of the landfill; landfills with final covers but where vegetation has yet to establish itself; and land application sites where waste application has been completed but final vegetation has not yet been established.

Sampling results, summarized:

Parameter	Outfall 002	Outfall 002	Outfall 009	Outfall 009	Outfall 011	Outfall 011
	Max conc. per application (mg/l)	Max. conc. per DMRs from 1/1/2019-10/1/2021 (mg/l)	Max conc. per application (mg/l)	Max. conc. per DMRs from 1/1/2019-10/1/2021 (mg/l)	Max conc. per application (mg/l)	Max. conc. per DMRs from 1/1/2019-10/1/2021 (mg/l)
Ammonia	0.27	<0.10	3.0	<0.10	0.1	<0.10
Arsenic, Total	0.1	<1.0	0.0016	0.0023	0.001	0.0012
Barium, Total	0.08	0.08	0.11	0.081	0.05	0.05
Cadmium, Total	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
CBOD5	5	5	26	7	5	5
COD	88	88	220	46	25	<10
Chromium, Total	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cyanide, Total	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Iron, Total	2.35	1.22	2.20	3.55	0.33	0.33
Lead, Total	0.015	0.0097	0.0070	0.0186	0.0048	0.0048
Magnesium, Total	19.4	16.5	35.2	16.1	15.0	16.7
Mercury, Total	<0.0002	<0.0002	0.20	<0.0002	<0.0002	<0.0002
Nitrate-Nitrite	5.65	5.65	5.64	5.64	5.36	5.36
Oil and Grease	<5	<5	<5	<5	<5	<5
pH	8.20	8.09	8.35	8.15	-	8.27
Selenium, Total	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Silver, Total	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
TDS	328	280	622	276	274	294
TOC	18.9	5	64.8	4.7	4.4	4.4
TSS	102	102	65	35	22	22
BOD5	2	-	2	-	2	-
Total Nitrogen	1	-	3	-	6.1	-
Total Phosphorus	0.03	-	0.1	-	0.02	-

The permit application represented that outfall 002 monitoring is representative of the stormwater discharging from outfalls 003, 004, 007, and 008. The permit application represented that outfall 009 monitoring is representative of the stormwater discharging from outfall 010 as well. Consistent with the previous permit and regulations, monitoring will only be required at representative outfalls 002, 009, and 011—not at all stormwater outfalls.

Technology-Based Effluent Limitations (TBELs), including Best Professional Judgment (BPJ) Limitations

No limits have been imposed.

Water Quality-Based Effluent Limitations (WQBELs)

No limits have been imposed.

Anti-Backsliding

Not applicable (there are no limits for stormwater-only outfalls in the renewal permit or in the previous permit)

OTHER

Class A Wild Trout Fisheries

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

303(d) Listed Streams

The discharge is located on a river segment that is designated on the federal 303(d) list as impaired. Section 303(d) of the Clean Water Act requires the assessment of streams and other surface waters and the reporting to EPA of impaired waters. Total Maximum Daily Loads are prepared to address impaired waterways. In this case, the impairment is due to the presence of elevated PCB concentrations found in fish tissues in the Schuylkill River. The Schuylkill River PCB TMDL was completed and approved by EPA in April 2007. Implementation of the TMDL has already been discussed under the TMDL section of this factsheet. The draft permit requirements are in conformance with the TMDL.

Antidegradation (Chapter 93.4)

The effluent limits for this discharge have been developed to ensure that existing stream uses and the level of water quality necessary to protect the existing uses are maintained and protected. No High Quality (HQ) or Exceptional Value (EV) waters are impacted by this discharge.

Proposed Effluent Limitations and Monitoring Requirements

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

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

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day unless otherwise specified)		Concentrations (mg/L unless otherwise specified)				Minimum Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Instant. Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Grab
TRC	XXX	XXX	XXX	0.5	XXX	1.64	1/day	Grab
CBOD5	9.8	19.6	XXX	25.0	50.0	75	1/week	24-Hr Composite
TSS	10.6	23.5	XXX	27.0	60.0	75	1/week	24-Hr Composite
Total Dissolved Solids	4704	9408	XXX	12,000.0	24,000.0	30,000	1/week	24-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10,000	1/week	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/week	Grab
E. Coli (No./100 mL)	XXX	XXX	XXX	XXX	XXX	Report	1/year	Grab
Ammonia	1.9	3.9	XXX	4.9	10.0	12.2	1/week	24-Hr Composite
Total Zinc	0.043	0.078	XXX	0.11	0.20	0.275	2/month	24-Hr Composite
Phenol	0.006	0.010	XXX	0.015	0.026	0.037	1/month	24-Hr Composite
a-Terpineol	0.006	0.013	XXX	0.016	0.033	0.04	1/month	24-Hr Composite
Benzoic Acid	0.028	0.047	XXX	0.071	0.120	0.177	1/month	24-Hr Composite

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

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day unless otherwise specified)		Concentrations (mg/L unless otherwise specified)				Minimum Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Instant. Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
p-Cresol	0.005	0.010	XXX	0.014	0.025	0.035	1/month	24-Hr Composite
PCBs (Dry Weather) (pg/L)	XXX	XXX	XXX	XXX	Report	XXX	1/year	24-Hr Composite
PCBs (Wet Weather) (pg/L)	XXX	XXX	XXX	XXX	Report	XXX	1/year	24-Hr Composite

Compliance Sampling Location: after treatment facility

Proposed Effluent Limitations and Monitoring Requirements

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

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

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
pH (S.U.)	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
COD	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
TSS	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Ammonia	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Arsenic	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Cadmium	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Cyanide	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Iron	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Lead	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Mercury	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Selenium	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Silver	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab

Compliance Sampling Location: at outfall 002

Proposed Effluent Limitations and Monitoring Requirements

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

Outfall 009, Effective Period: Permit Effective Date through Permit Expiration Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
pH (S.U.)	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
COD	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
TSS	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Ammonia	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Arsenic	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Cadmium	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Cyanide	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Iron	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Lead	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Mercury	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Selenium	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Silver	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab

Compliance Sampling Location: at outfall 009

Proposed Effluent Limitations and Monitoring Requirements

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

Outfall 011, Effective Period: Permit Effective Date through Permit Expiration Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
pH (S.U.)	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
COD	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
TSS	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Ammonia	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Arsenic	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Cadmium	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Cyanide	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Iron	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Lead	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Mercury	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Selenium	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Silver	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab

Compliance Sampling Location: at outfall 011

	Tools and References Used to Develop Permit
☒	*WQM for Windows Model (see Attachment)*
☒	*Toxics Management Spreadsheet (see Attachment)*
☒	*TRC Model Spreadsheet (see Attachment)*
☒	*Temperature Model Spreadsheet (see Attachment)*
☒	*Water Quality Toxics Management Strategy, 361-0100-003, 4/06.*
☒	*Technical Guidance for the Development and Specification of Effluent Limitations, 362-0400-001, 10/97.*
☐	*Policy for Permitting Surface Water Diversions, 362-2000-003, 3/98.*
☐	*Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 362-2000-008, 11/96.*
☐	*Technology-Based Control Requirements for Water Treatment Plant Wastes, 362-2183-003, 10/97.*
☐	*Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 362-2183-004, 12/97.*
☐	*Pennsylvania CSO Policy, 385-2000-011, 9/08.*
☐	*Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.*
☐	*Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 391-2000-002, 4/97.*
☒	*Determining Water Quality-Based Effluent Limits, 391-2000-003, 12/97.*
☒	*Implementation Guidance Design Conditions, 391-2000-006, 9/97.*
☒	*Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 391-2000-007, 6/2004.*
☐	*Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 391-2000-008, 10/1997.*
☐	*Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 391-2000-010, 3/99.*
☒	*Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 391-2000-011, 5/2004.*
☒	*Implementation Guidance for Section 93.7 Ammonia Criteria, 391-2000-013, 11/97.*
☐	*Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 391-2000-014, 4/2008.*
☒	*Implementation Guidance Total Residual Chlorine (TRC) Regulation, 391-2000-015, 11/1994.*
☒	*Implementation Guidance for Temperature Criteria, 391-2000-017, 4/09.*
☐	*Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 391-2000-018, 10/97.*
☐	*Implementation Guidance for Application of Section 93.5(e) for Potable Water Supply Protection Total Dissolved Solids, Nitrite-Nitrate, Non-Priority Pollutant Phenolics and Fluorides, 391-2000-019, 10/97.*
☐	*Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 391-2000-021, 3/99.*
☐	*Implementation Guidance for the Determination and Use of Background/Ambient Water Quality in the Determination of Wasteload Allocations and NPDES Effluent Limitations for Toxic Substances, 391-2000-022, 3/1999.*
☒	*Design Stream Flows, 391-2000-023, 9/98.*
☐	*Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics, 391-2000-024, 10/98.*
☐	*Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 391-3200-013, 6/97.*
☐	*Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.*
☒	*DEP SOP: Establishing Effluent Limitations for Individual Industrial Permits, October 1, 2020*
☒	*DEP SOP: Establishing WQBELs & Permit Conditions for Toxic Pollutants in NPDES Permits, March 22, 2021*
☒	*DEP SOP: New and Reissuance Individual Industrial NPDES Permits, October 11, 2013*
☒	*DEP SOP: Chemical Additives*

StreamStats Output Report-Schuylkill R @ Western Berks LF					
State/Reg	PA				
Workspac	PA20211108211756385000				
Latitude	40.29617				
Longitude	-75.9114				
Time	â€Ž11â€Ž/â€Ž8â€Ž/â€Ž2021â€Ž â€Ž4â€Ž:â€Ž18â€Ž:â€				
Basin Characteristics					
Paramete	Paramete	Value	Unit		
DRNAREA	Area that	923	square miles		
BSLOPD	Mean basi	6.5396	degrees		
ROCKDEP	Depth to r	4.4	feet		
URBAN	Percentag	6.4703	percent		
PRECIP	Mean Ann	47	inches		
STRDEN	Stream De	1.3	miles per square mile		
CARBON	Percentag	19.64	percent		
Low-Flow	1.9 Percent Low Flow Region 1				
Paramete	Paramete	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage A	923	square mi	4.78	1150
BSLOPD	Mean Basi	6.5396	degrees	1.7	6.4
ROCKDEP	Depth to R	4.4	feet	4.13	5.21
URBAN	Percent U	6.4703	percent	0	89
Low-Flow	98.1 Percent Low Flow Region 2				
Paramete	Paramete	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage A	923	square mi	4.93	1280
PRECIP	Mean Ann	47	inches	35	50.4
STRDEN	Stream De	1.3	miles per	0.51	3.1
ROCKDEP	Depth to R	4.4	feet	3.32	5.65
CARBON	Percent C	19.64	percent	0	99
Low-Flow	1.9 Percent Low Flow Region 1				
Statistic	Value	Unit			
7 Day 2 Ye	238	ft^3/s			
30 Day 2 Y	288	ft^3/s			
7 Day 10 Y	147	ft^3/s			
30 Day 10	175	ft^3/s			
90 Day 10	223	ft^3/s			
Low-Flow	98.1 Percent Low Flow Region 2				
Statistic	Value	Unit	SE	ASEp	
7 Day 2 Ye	414	ft^3/s	38	38	
30 Day 2 Y	484	ft^3/s	33	33	
7 Day 10 Y	268	ft^3/s	51	51	
30 Day 10	316	ft^3/s	46	46	
90 Day 10	384	ft^3/s	36	36	
Low-Flow	Area-Averaged				
Statistic	Value	Unit			
7 Day 2 Ye	411	ft^3/s			

StreamStats Output Report-downstrm of W.Berks LF					
State/Reg	PA				
Workspac	PA20211108213500878000				
Latitude	40.29239				
Longitude	-75.884				
Time	â€Ž11â€Ž/â€Ž8â€Ž/â€Ž2021â€Ž â€Ž4â€Ž:â€Ž35â€Ž:â€				
Basin Characteristics					
Paramete	Paramete	Value	Unit		
DRNAREA	Area that	926	square miles		
BSLOPD	Mean basi	6.5515	degrees		
ROCKDEP	Depth to r	4.4	feet		
URBAN	Percentag	6.4882	percent		
PRECIP	Mean Ann	47	inches		
STRDEN	Stream De	1.3	miles per square mile		
CARBON	Percentag	19.59	percent		
Low-Flow	2.2 Percent Low Flow Region 1				
Paramete	Paramete	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage A	926	square mi	4.78	1150
BSLOPD	Mean Basi	6.5515	degrees	1.7	6.4
ROCKDEP	Depth to R	4.4	feet	4.13	5.21
URBAN	Percent U	6.4882	percent	0	89
Low-Flow	97.8 Percent Low Flow Region 2				
Paramete	Paramete	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage A	926	square mi	4.93	1280
PRECIP	Mean Ann	47	inches	35	50.4
STRDEN	Stream De	1.3	miles per	0.51	3.1
ROCKDEP	Depth to R	4.4	feet	3.32	5.65
CARBON	Percent C	19.59	percent	0	99
Low-Flow	2.2 Percent Low Flow Region 1				
Statistic	Value	Unit			
7 Day 2 Ye	239	ft^3/s			
30 Day 2 Y	289	ft^3/s			
7 Day 10 Y	148	ft^3/s			
30 Day 10	176	ft^3/s			
90 Day 10	224	ft^3/s			
Low-Flow	97.8 Percent Low Flow Region 2				
Statistic	Value	Unit	SE	ASEp	
7 Day 2 Ye	415	ft^3/s	38	38	
30 Day 2 Y	486	ft^3/s	33	33	
7 Day 10 Y	269	ft^3/s	51	51	
30 Day 10	317	ft^3/s	46	46	
90 Day 10	385	ft^3/s	36	36	
Low-Flow	Area-Averaged				
Statistic	Value	Unit			
7 Day 2 Ye	411	ft^3/s			

StreamStats Output Report- at downstream PADWIS					
State/Reg	PA				
Workspac	PA20211108214007415000				
Latitude	40.2419				
Longitude	-75.6525				
Time	â€Ž11â€Ž/â€Ž8â€Ž/â€Ž2021â€Ž â€Ž4â€Ž:â€Ž40â€Ž:â€				
Basin Characteristics					
Paramete	Paramete	Value	Unit		
DRNAREA	Area that	1150	square miles		
BSLOPD	Mean basi	6.497	degrees		
ROCKDEP	Depth to r	4.4	feet		
URBAN	Percentag	6.5285	percent		
PRECIP	Mean Ann	47	inches		
STRDEN	Stream De	1.39	miles per square mile		
CARBON	Percentag	18.82	percent		
Low-Flow	21.1 Percent Low Flow Region 1				
Paramete	Paramete	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage A	1150	square mi	4.78	1150
BSLOPD	Mean Basi	6.497	degrees	1.7	6.4
ROCKDEP	Depth to R	4.4	feet	4.13	5.21
URBAN	Percent U	6.5285	percent	0	89
Low-Flow	78.9 Percent Low Flow Region 2				
Paramete	Paramete	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage A	1150	square mi	4.93	1280
PRECIP	Mean Ann	47	inches	35	50.4
STRDEN	Stream De	1.39	miles per	0.51	3.1
ROCKDEP	Depth to R	4.4	feet	3.32	5.65
CARBON	Percent Ca	18.82	percent	0	99
Low-Flow	21.1 Percent Low Flow Region 1				
Statistic	Value	Unit			
7 Day 2 Ye	294	ft^3/s			
30 Day 2 Y	357	ft^3/s			
7 Day 10 Y	184	ft^3/s			
30 Day 10	218	ft^3/s			
90 Day 10	278	ft^3/s			
Low-Flow	78.9 Percent Low Flow Region 2				
Statistic	Value	Unit	SE	ASEp	
7 Day 2 Ye	491	ft^3/s	38	38	
30 Day 2 Y	576	ft^3/s	33	33	
7 Day 10 Y	320	ft^3/s	51	51	
30 Day 10	377	ft^3/s	46	46	
90 Day 10	456	ft^3/s	36	36	
Low-Flow	Area-Averaged				
Statistic	Value	Unit			
7 Day 2 Ye	449	ft^3/s			

Discharge Information

Instructions | Discharge | Stream

Facility: **W.Berks LF> Effl. conc appl. or DMRs 1/2019-11** NPDES Permit No.: **PA0054852** Outfall No.: **001**

Evaluation Type: **Major Sewage / Industrial Waste** Wastewater Description: **leachate, condensate**

Discharge Characteristics								
Design Flow (MGD)*	Hardness (mg/l)*	pH (SU)*	Partial Mix Factors (PMFs)				Complete Mix Times (min)	
			AFC	CFC	THH	CRL	Q_{7-10}	Q_h
0.047	881	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		8940									
	Chloride (PWS)	mg/L		1750									
	Bromide	mg/L		6									
	Sulfate (PWS)	mg/L		56									
	Fluoride (PWS)	mg/L		2									
Group 2	Total Aluminum	µg/L		930									
	Total Antimony	µg/L		4.2									
	Total Arsenic	µg/L		22.9									
	Total Barium	µg/L		157									
	Total Beryllium	µg/L	<	1									
	Total Boron	µg/L		8490									
	Total Cadmium	µg/L		0.5									
	Total Chromium (III)	µg/L		76.8									
	Hexavalent Chromium	µg/L	<	5									
	Total Cobalt	µg/L		23.6									
	Total Copper	µg/L		34.2									
	Free Cyanide	µg/L											
	Total Cyanide	µg/L		27									
	Dissolved Iron	µg/L		748									
	Total Iron	µg/L		3430									
	Total Lead	µg/L		2.2									
	Total Manganese	µg/L		3560									
	Total Mercury	µg/L		0.5									
	Total Nickel	µg/L		130									
	Total Phenols (Phenolics) (PWS)	µg/L		10									
	Total Selenium	µg/L		1.2									
	Total Silver	µg/L	<	0.2									
	Total Thallium	µg/L	<	0.2									
	Total Zinc	µg/L		114									
	Total Molybdenum	µg/L		15.8									
	Acrolein	µg/L	<	2									
	Acrylamide	µg/L	<	10,000									
	Acrylonitrile	µg/L	<	1									
	Benzene	µg/L	<	0.5									
	Bromoform	µg/L		0.5									

Group 3	Carbon Tetrachloride	µg/L	<	0.5									
	Chlorobenzene	µg/L	<	0.5									
	Chlorodibromomethane	µg/L		4.9									
	Chloroethane	µg/L	<	0.5									
	2-Chloroethyl Vinyl Ether	µg/L	<	1									
	Chloroform	µg/L		25.8									
	Dichlorobromomethane	µg/L		17.9									
	1,1-Dichloroethane	µg/L	<	0.5									
	1,2-Dichloroethane	µg/L	<	0.5									
	1,1-Dichloroethylene	µg/L	<	0.5									
	1,2-Dichloropropane	µg/L	<	0.5									
	1,3-Dichloropropylene	µg/L	<	0.5									
	1,4-Dioxane	µg/L		7.7									
	Ethylbenzene	µg/L	<	0.5									
	Methyl Bromide	µg/L	<	0.5									
	Methyl Chloride	µg/L	<	0.5									
	Methylene Chloride	µg/L	<	0.5									
	1,1,2,2-Tetrachloroethane	µg/L	<	0.5									
	Tetrachloroethylene	µg/L	<	0.5									
	Toluene	µg/L	<	0.5									
	1,2-trans-Dichloroethylene	µg/L	<	1									
	1,1,1-Trichloroethane	µg/L	<	0.5									
	1,1,2-Trichloroethane	µg/L	<	1									
	Trichloroethylene	µg/L	<	0.5									
	Vinyl Chloride	µg/L	<	0.5									
Group 4	2-Chlorophenol	µg/L		0.5									
	2,4-Dichlorophenol	µg/L		0.5									
	2,4-Dimethylphenol	µg/L		0.6									
	4,6-Dinitro-o-Cresol	µg/L	<	2									
	2,4-Dinitrophenol	µg/L	<	2									
	2-Nitrophenol	µg/L	<	2									
	4-Nitrophenol	µg/L	<	2									
	p-Chloro-m-Cresol	µg/L	<	0.5									
	Pentachlorophenol	µg/L		1.2									
	Phenol	µg/L		10									
	2,4,6-Trichlorophenol	µg/L		5.2									
	Acenaphthene	µg/L	<	0.5									
	Acenaphthylene	µg/L		0.6									
	Anthracene	µg/L		6.8									
	Benzidine	µg/L	<	2									
	Benzo(a)Anthracene	µg/L	<	0.5									
	Benzo(a)Pyrene	µg/L	<	0.5									
	3,4-Benzofluoranthene	µg/L	<	0.5									
	Benzo(ghi)Perylene	µg/L	<	0.5									
	Benzo(k)Fluoranthene	µg/L	<	0.5									
	Bis(2-Chloroethoxy)Methane	µg/L	<	0.5									
	Bis(2-Chloroethyl)Ether	µg/L	<	0.5									
	Bis(2-Chloroisopropyl)Ether	µg/L	<	0.5									
	Bis(2-Ethylhexyl)Phthalate	µg/L	<	3									
	4-Bromophenyl Phenyl Ether	µg/L	<	0.5									
	Butyl Benzyl Phthalate	µg/L	<	2									
	2-Chloronaphthalene	µg/L	<	0.5									
	4-Chlorophenyl Phenyl Ether	µg/L	<	0.5									
	Chrysene	µg/L	<	0.5									
	Dibenzo(a,h)Anthrancene	µg/L	<	0.5									
	1,2-Dichlorobenzene	µg/L	<	0.5									
	1,3-Dichlorobenzene	µg/L	<	0.5									
	1,4-Dichlorobenzene	µg/L	<	0.5									

Group 5	1,4-Dichlorobenzene	µg/L	<	0.5									
	3,3-Dichlorobenzidine	µg/L	<	2									
	Diethyl Phthalate	µg/L	<	2									
	Dimethyl Phthalate	µg/L	<	2									
	Di-n-Butyl Phthalate	µg/L	<	2									
	2,4-Dinitrotoluene	µg/L	<	1									

	2,6-Dinitrotoluene	µg/L	<	1									
	Di-n-Octyl Phthalate	µg/L	<	2									
	1,2-Diphenylhydrazine	µg/L	<	0.5									
	Fluoranthene	µg/L	<	0.5									
	Fluorene	µg/L	<	0.5									
	Hexachlorobenzene	µg/L	<	0.5									
	Hexachlorobutadiene	µg/L	<	0.5									
	Hexachlorocyclopentadiene	µg/L	<	2									
	Hexachloroethane	µg/L	<	0.5									
	Indeno(1,2,3-cd)Pyrene	µg/L	<	0.5									
	Isophorone	µg/L		0.8									
	Naphthalene	µg/L	<	0.5									
	Nitrobenzene	µg/L	<	0.5									
	n-Nitrosodimethylamine	µg/L	<	0.5									
	n-Nitrosodi-n-Propylamine	µg/L	<	0.5									
	n-Nitrosodiphenylamine	µg/L	<	0.5									
	Phenanthrene	µg/L	<	0.5									
	Pyrene	µg/L	<	0.5									
	1,2,4-Trichlorobenzene	µg/L	<	0.5									
Group 6	Aldrin	µg/L	<	0.25									
	alpha-BHC	µg/L	<	0.25									
	beta-BHC	µg/L	<	0.25									
	gamma-BHC	µg/L	<	0.25									
	delta BHC	µg/L	<	0.25									
	Chlordane	µg/L	<	5									
	4,4-DDT	µg/L	<	0.25									
	4,4-DDE	µg/L	<	0.25									
	4,4-DDD	µg/L	<	0.25									
	Dieldrin	µg/L	<	0.25									
	alpha-Endosulfan	µg/L	<	0.25									
	beta-Endosulfan	µg/L	<	0.25									
	Endosulfan Sulfate	µg/L	<	0.25									
	Endrin	µg/L	<	0.25									
	Endrin Aldehyde	µg/L	<	0.25									
	Heptachlor	µg/L	<	0.25									
	Heptachlor Epoxide	µg/L	<	0.25									

	PCB-1016	µg/L	<	2									
	PCB-1221	µg/L	<	2									
	PCB-1232	µg/L	<	2									
	PCB-1242	µg/L	<	2									
	PCB-1248	µg/L	<	2									
	PCB-1254	µg/L	<	2									
	PCB-1260	µg/L	<	2									
	PCBs, Total	µg/L											
	Toxaphene	µg/L	<	10									
	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											
	p-Cresol	µg/L	<	10									

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.3, March 2021

Stream / Surface Water Information

W.Berks LF> Effl. conc appl. or DMRs 1/2019-11/2021, NPDES Permit No. PA0054852, Outfall 001

Instructions | Discharge | *Stream*

Receiving Surface Water Name: **Schuylkill River**

No. Reaches to Model: **1**

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

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi^2)*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	000833	72.3	175	923			Yes
End of Reach 1	000833	68.5	160	926			Yes

Q_{7-10}

Location	RMI	LFY (cfs/mi^2)*	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness*	pH*	Hardness	pH
Point of Discharge	72.3	0.29	268		100							100	7		
End of Reach 1	68.5	0.29	269		100							100	7		

Q_h

Location	RMI	LFY (cfs/mi^2)	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness	pH	Hardness	pH
Point of Discharge	72.3														
End of Reach 1	68.5														

Model Results

W.Berks LF> Effl. conc appl. or DMRs 1/2019-11/2021, NPDES Permit No. PA0054852, Outfall 001

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

☑ ***Hydrodynamics***

Q_{7-10}

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)
72.3	268		268	0.073	0.00075	1.136	113.55	100.	0.889	0.261	533.887
68.5	269		269					100.000			

Q_h

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)
72.3	984.42		984.42	0.073	0.00075	2.013	113.55	56.418	1.842	0.126	226.333
68.5	987.626		987.63								

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 15 PMF: 0.168 Analysis Hardness (mg/l): 101.26 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	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Fluoride (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	750	750	464,121	
Total Antimony	0	0		0	1,100	1,100	680,711	
Total Arsenic	0	0		0	340	340	210,402	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	12,995,388	
Total Boron	0	0		0	8,100	8,100	5,012,507	
Total Cadmium	0	0		0	2.038	2.16	1,337	Chem Translator of 0.943 applied
Total Chromium (III)	0	0		0	575.646	1,822	1,127,297	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	10,083	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	58,789	
Total Copper	0	0		0	13.599	14.2	8,766	Chem Translator of 0.96 applied

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	65.469	83.0	51,337	Chem Translator of 0.789 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	1,019	Chem Translator of 0.85 applied
Total Nickel	0	0		0	473.230	474	293,435	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	3.287	3.87	2,393	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	40,224	
Total Zinc	0	0		0	118.432	121	74,938	Chem Translator of 0.978 applied
Acrolein	0	0		0	3	3.0	1,856	
Acrylamide	0	0		0	N/A	N/A	N/A	
Acrylonitrile	0	0		0	650	650	402,238	
Benzene	0	0		0	640	640	396,050	
Bromoform	0	0		0	1,800	1,800	1,113,890	
Carbon Tetrachloride	0	0		0	2,800	2,800	1,732,718	
Chlorobenzene	0	0		0	1,200	1,200	742,594	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	18,000	18,000	11,138,904	
Chloroform	0	0		0	1,900	1,900	1,175,773	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	15,000	15,000	9,282,420	
1,1-Dichloroethylene	0	0		0	7,500	7,500	4,641,210	
1,2-Dichloropropane	0	0		0	11,000	11,000	6,807,108	
1,3-Dichloropropylene	0	0		0	310	310	191,837	
Ethylbenzene	0	0		0	2,900	2,900	1,794,601	
Methyl Bromide	0	0		0	550	550	340,355	
Methyl Chloride	0	0		0	28,000	28,000	17,327,185	
Methylene Chloride	0	0		0	12,000	12,000	7,425,936	
1,1,2,2-Tetrachloroethane	0	0		0	1,000	1,000	618,828	
Tetrachloroethylene	0	0		0	700	700	433,180	
Toluene	0	0		0	1,700	1,700	1,052,008	
1,2-trans-Dichloroethylene	0	0		0	6,800	6,800	4,208,031	
1,1,1-Trichloroethane	0	0		0	3,000	3,000	1,856,484	
1,1,2-Trichloroethane	0	0		0	3,400	3,400	2,104,015	
Trichloroethylene	0	0		0	2,300	2,300	1,423,304	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	560	560	346,544	
2,4-Dichlorophenol	0	0		0	1,700	1,700	1,052,008	
2,4-Dimethylphenol	0	0		0	660	660	408,426	
4,6-Dinitro-o-Cresol	0	0		0	80	80.0	49,506	
2,4-Dinitrophenol	0	0		0	660	660	408,426	
2-Nitrophenol	0	0		0	8,000	8,000	4,950,624	
4-Nitrophenol	0	0		0	2,300	2,300	1,423,304	
p-Chloro-m-Cresol	0	0		0	160	160	99,012	
Pentachlorophenol	0	0		0	8.723	8.72	5,398	

2,4,6-Trichlorophenol	0	0		0	460	460	284,661	
Acenaphthene	0	0		0	83	83.0	51,363	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	300	300	185,648	
Benzo(a)Anthracene	0	0		0	0.5	0.5	309	
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	18,564,841	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	4,500	4,500	2,784,726	
4-Bromophenyl Phenyl Ether	0	0		0	270	270	167,084	
Butyl Benzyl Phthalate	0	0		0	140	140	86,636	
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	507,439	
1,3-Dichlorobenzene	0	0		0	350	350	216,590	
1,4-Dichlorobenzene	0	0		0	730	730	451,744	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	4,000	4,000	2,475,312	
Dimethyl Phthalate	0	0		0	2,500	2,500	1,547,070	
Di-n-Butyl Phthalate	0	0		0	110	110	68,071	
2,4-Dinitrotoluene	0	0		0	1,600	1,600	990,125	
2,6-Dinitrotoluene	0	0		0	990	990	612,640	
1,2-Diphenylhydrazine	0	0		0	15	15.0	9,282	
Fluoranthene	0	0		0	200	200	123,766	
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	6,188	
Hexachlorocyclopentadiene	0	0		0	5	5.0	3,094	
Hexachloroethane	0	0		0	60	60.0	37,130	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	10,000	10,000	6,188,280	
Naphthalene	0	0		0	140	140	86,636	
Nitrobenzene	0	0		0	4,000	4,000	2,475,312	
n-Nitrosodimethylamine	0	0		0	17,000	17,000	10,520,076	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	300	300	185,648	
Phenanthrene	0	0		0	5	5.0	3,094	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	130	130	80,448	
Aldrin	0	0		0	3	3.0	1,856	
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	588	
Chlordane	0	0		0	2.4	2.4	1,485	

Chlordane	0	0		0	2.4	2.4	1,485	
4,4-DDT	0	0		0	1.1	1.1	681	

Model Results 11/17/2021

4,4-DDE	0	0		0	1.1	1.1	681	
4,4-DDD	0	0		0	1.1	1.1	681	
Dieldrin	0	0		0	0.24	0.24	149	
alpha-Endosulfan	0	0		0	0.22	0.22	136	
beta-Endosulfan	0	0		0	0.22	0.22	136	
Endosulfan Sulfate	0	0		0	N/A	N/A	N/A	
Endrin	0	0		0	0.086	0.086	53.2	
Endrin Aldehyde	0	0		0	N/A	N/A	N/A	
Heptachlor	0	0		0	0.52	0.52	322	
Heptachlor Epoxide	0	0		0	0.5	0.5	309	
Toxaphene	0	0		0	0.73	0.73	452	
p-Cresol	0	0		0	800	800	495,062	

☑ ***CFC*** CCT (min): ###### PMF: 1 Analysis Hardness (mg/l): 100.21 Analysi

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	
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	
Fluoride (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	811,124	
Total Arsenic	0	0		0	150	150	553,039	Chem
Total Barium	0	0		0	4,100	4,100	15,116,397	
Total Boron	0	0		0	1,600	1,600	5,899,082	
Total Cadmium	0	0		0	0.246	0.27	999	Chem T
Total Chromium (III)	0	0		0	74.243	86.3	318,289	Chem T
Hexavalent Chromium	0	0		0	10	10.4	38,326	Chem T
Total Cobalt	0	0		0	19	19.0	70,052	
Total Copper	0	0		0	8.972	9.35	34,457	Chem T
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	1,500	1,500	5,530,389	WQC =
Total Lead	0	0		0	2.522	3.19	11,762	Chem T
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	3,340	Chem T
Total Nickel	0	0		0	52.100	52.3	192,666	Chem T
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	4.600	4.99	18,395	Chem T
Total Silver	0	0		0	N/A	N/A	N/A	Chem
Total Thallium	0	0		0	13	13.0	47,930	
Total Zinc	0	0		0	118.351	120	442,547	Chem T
Acrolein	0	0		0	3	3.0	11,061	
Acrylamide	0	0		0	N/A	N/A	N/A	
Acrylonitrile	0	0		0	130	130	479,300	
Benzene	0	0		0	130	130	479,300	

Bromoform	0	0		0	370	370	1,364,163	
Carbon Tetrachloride	0	0		0	560	560	2,064,679	
Chlorobenzene	0	0		0	240	240	884,862	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	3,500	3,500	12,904,241	
Chloroform	0	0		0	390	390	1,437,901	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	3,100	3,100	11,429,471	
1,1-Dichloroethylene	0	0		0	1,500	1,500	5,530,389	
1,2-Dichloropropane	0	0		0	2,200	2,200	8,111,237	
1,3-Dichloropropylene	0	0		0	61	61.0	224,902	
Ethylbenzene	0	0		0	580	580	2,138,417	
Methyl Bromide	0	0		0	110	110	405,562	
Methyl Chloride	0	0		0	5,500	5,500	20,278,093	
Methylene Chloride	0	0		0	2,400	2,400	8,848,623	
1,1,2,2-Tetrachloroethane	0	0		0	210	210	774,254	
Tetrachloroethylene	0	0		0	140	140	516,170	
Toluene	0	0		0	330	330	1,216,686	
1,2-trans-Dichloroethylene	0	0		0	1,400	1,400	5,161,697	
1,1,1-Trichloroethane	0	0		0	610	610	2,249,025	
1,1,2-Trichloroethane	0	0		0	680	680	2,507,110	
Trichloroethylene	0	0		0	450	450	1,659,117	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	110	110	405,562	
2,4-Dichlorophenol	0	0		0	340	340	1,253,555	
2,4-Dimethylphenol	0	0		0	130	130	479,300	
4,6-Dinitro-o-Cresol	0	0		0	16	16.0	58,991	
2,4-Dinitrophenol	0	0		0	130	130	479,300	
2-Nitrophenol	0	0		0	1,600	1,600	5,899,082	
4-Nitrophenol	0	0		0	470	470	1,732,855	
p-Chloro-m-Cresol	0	0		0	500	500	1,843,463	
Pentachlorophenol	0	0		0	6.693	6.69	24,675	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	91	91.0	335,510	
Acenaphthene	0	0		0	17	17.0	62,678	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	59	59.0	217,529	
Benzo(a)Anthracene	0	0		0	0.1	0.1	369	
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	22,121,557	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	910	910	3,355,103	
4-Bromophenyl-Phenyl Ether	0	0		0	54	54.0	199,094	

Butyl Benzyl Phthalate	0	0		0	35	35.0	129,042	
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	589,908	
1,3-Dichlorobenzene	0	0		0	69	69.0	254,398	
1,4-Dichlorobenzene	0	0		0	150	150	553,039	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	800	800	2,949,541	
Dimethyl Phthalate	0	0		0	500	500	1,843,463	
Di-n-Butyl Phthalate	0	0		0	21	21.0	77,425	
2,4-Dinitrotoluene	0	0		0	320	320	1,179,816	
2,6-Dinitrotoluene	0	0		0	200	200	737,385	
1,2-Diphenylhydrazine	0	0		0	3	3.0	11,061	
Fluoranthene	0	0		0	40	40.0	147,477	
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	7,374	
Hexachlorocyclopentadiene	0	0		0	1	1.0	3,687	
Hexachloroethane	0	0		0	12	12.0	44,243	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	2,100	2,100	7,742,545	
Naphthalene	0	0		0	43	43.0	158,538	
Nitrobenzene	0	0		0	810	810	2,986,410	
n-Nitrosodimethylamine	0	0		0	3,400	3,400	12,535,549	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	59	59.0	217,529	
Phenanthrene	0	0		0	1	1.0	3,687	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	26	26.0	95,860	
Aldrin	0	0		0	0.1	0.1	369	
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	15.9	
4,4-DDT	0	0		0	0.001	0.001	3.69	
4,4-DDE	0	0		0	0.001	0.001	3.69	
4,4-DDD	0	0		0	0.001	0.001	3.69	
Dieldrin	0	0		0	0.056	0.056	206	
alpha-Endosulfan	0	0		0	0.056	0.056	206	
beta-Endosulfan	0	0		0	0.056	0.056	206	
Endosulfan Sulfate	0	0		0	N/A	N/A	N/A	
Endrin	0	0		0	0.036	0.036	133	
Endrin Aldehyde	0	0		0	N/A	N/A	N/A	
Heptachlor	0	0		0	0.0038	0.004	14.0	

Heptachlor	0	0		0	0.0038	0.004	14.0	

Heptachlor Epoxide	0	0		0	0.0038	0.004	14.0	
Toxaphene	0	0		0	0.0002	0.0002	0.74	
p-Cresol	0	0		0	160	160	589,908	

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

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	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	
Fluoride (PWS)	0	0		0	2,000	2,000	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	5.6	5.6	20,647	
Total Arsenic	0	0		0	10	10.0	36,869	
Total Barium	0	0		0	2,400	2,400	8,848,623	
Total Boron	0	0		0	3,100	3,100	11,429,471	
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	
Dissolved Iron	0	0		0	300	300	1,106,078	
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	3,686,926	
Total Mercury	0	0		0	0.050	0.05	184	
Total Nickel	0	0		0	610	610	2,249,025	
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	885	
Total Zinc	0	0		0	N/A	N/A	N/A	
Acrolein	0	0		0	3	3.0	11,061	
Acrylamide	0	0		0	N/A	N/A	N/A	
Acrylonitrile	0	0		0	N/A	N/A	N/A	
Benzene	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	368,693	
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	121,669	
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	250,711	
Methyl Bromide	0	0		0	100	100.0	368,693	
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	210,155	
1,2-trans-Dichloroethylene	0	0		0	100	100.0	368,693	
1,1,1-Trichloroethane	0	0		0	10,000	10,000	36,869,261	
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	110,608	
2,4-Dichlorophenol	0	0		0	10	10.0	36,869	
2,4-Dimethylphenol	0	0		0	100	100.0	368,693	
4,6-Dinitro-o-Cresol	0	0		0	2	2.0	7,374	
2,4-Dinitrophenol	0	0		0	10	10.0	36,869	
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	14,747,704	
2,4,6-Trichlorophenol	0	0		0	N/A	N/A	N/A	
Acenaphthene	0	0		0	70	70.0	258,085	
Anthracene	0	0		0	300	300	1,106,078	
Benzidine	0	0		0	N/A	N/A	N/A	
Benzo(a)Anthracene	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	737,385	
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	369	
2-Chloronaphthalene	0	0		0	800	800	2,949,541	
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	1,000	1,000	3,686,926	
1,3-Dichlorobenzene	0	0		0	7	7.0	25,808	
1,4-Dichlorobenzene	0	0		0	300	300	1,106,078	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	

Diethyl Phthalate	0	0		0	600	600	2,212,156	
Dimethyl Phthalate	0	0		0	2,000	2,000	7,373,852	
Di-n-Butyl Phthalate	0	0		0	20	20.0	73,739	
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	73,739	
Fluorene	0	0		0	50	50.0	184,346	
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	14,748	
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	125,355	
Naphthalene	0	0		0	N/A	N/A	N/A	
Nitrobenzene	0	0		0	10	10.0	36,869	
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	73,739	
1,2,4-Trichlorobenzene	0	0		0	0.07	0.07	258	

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	15,485	
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	73,739	
beta-Endosulfan	0	0		0	20	20.0	73,739	
Endosulfan Sulfate	0	0		0	20	20.0	73,739	
Endrin	0	0		0	0.03	0.03	111	
Endrin Aldehyde	0	0		0	1	1.0	3,687	
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	
p-Cresol	0	0		0	N/A	N/A	N/A	

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

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments

Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Fluoride (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	
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	
Acrylamide	0	0		0	0.07	0.07	948	
Acrylonitrile	0	0		0	0.06	0.06	812	
Benzene	0	0		0	0.58	0.58	7,853	
Bromoform	0	0		0	7	7.0	94,781	
Carbon Tetrachloride	0	0		0	0.4	0.4	5,416	
Chlorobenzene	0	0		0	N/A	N/A	N/A	
Chlorodibromomethane	0	0		0	0.8	0.8	10,832	
2-Chloroethyl Vinyl Ether	0	0		0	N/A	N/A	N/A	
Chloroform	0	0		0	5.7	5.7	77,179	
Dichlorobromomethane	0	0		0	0.95	0.95	12,863	
1,2-Dichloroethane	0	0		0	9.9	9.9	134,047	
1,1-Dichloroethylene	0	0		0	N/A	N/A	N/A	
1,2-Dichloropropane	0	0		0	0.9	0.9	12,186	
1,3-Dichloropropylene	0	0		0	0.27	0.27	3,656	
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	270,802	
1,1,2,2-Tetrachloroethane	0	0		0	0.2	0.2	2,708	

Tetrachloroethylene	0	0		0	10	10.0	135,401	
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	7,447	
Trichloroethylene	0	0		0	0.6	0.6	8,124	
Vinyl Chloride	0	0		0	0.02	0.02	271	

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	0.030	0.03	406	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	1.5	1.5	20,310	
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	1.35	
Benzo(a)Anthracene	0	0		0	0.001	0.001	13.5	
Benzo(a)Pyrene	0	0		0	0.0001	0.0001	1.35	
3,4-Benzofluoranthene	0	0		0	0.001	0.001	13.5	
Benzo(k)Fluoranthene	0	0		0	0.01	0.01	135	
Bis(2-Chloroethyl)Ether	0	0		0	0.03	0.03	406	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	0.32	0.32	4,333	
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	1,625	
Dibenzo(a,h)Anthrancene	0	0		0	0.0001	0.0001	1.35	
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	677	
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	677	
2,6-Dinitrotoluene	0	0		0	0.05	0.05	677	
1,2-Diphenylhydrazine	0	0		0	0.03	0.03	406	
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	1.08	
Hexachlorobutadiene	0	0		0	0.01	0.01	135	
Hexachlorocyclopentadiene	0	0		0	N/A	N/A	N/A	
Hexachloroethane	0	0		0	0.1	0.1	1,354	
Indeno(1,2,3-cd)Pyrene	0	0		0	0.001	0.001	13.5	
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	9.48	
n-Nitrosodi-n-Propylamine	0	0		0	0.005	0.005	67.7	
n-Nitrosodiphenylamine	0	0		0	3.3	3.3	44,682	
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	0.011	
alpha-BHC	0	0		0	0.0004	0.0004	5.42	
beta-BHC	0	0		0	0.008	0.008	108	
gamma-BHC	0	0		0	N/A	N/A	N/A	
Chlordane	0	0		0	0.0003	0.0003	4.06	
4,4-DDT	0	0		0	0.00003	0.00003	0.41	
4,4-DDE	0	0		0	0.00002	0.00002	0.27	
4,4-DDD	0	0		0	0.0001	0.0001	1.35	
Dieldrin	0	0		0	0.000001	0.000001	0.014	
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	0.081	
Heptachlor Epoxide	0	0		0	0.00003	0.00003	0.41	
Toxaphene	0	0		0	0.0007	0.0007	9.48	
p-Cresol	0	0		0	N/A	N/A	N/A	

☑ ***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
Acrylamide	0.37	0.58	948	1,479	2,370	µg/L	948	CRL	Discharge Conc ≥ 50% WQBEL (RP)
Aldrin	0.000004	0.000007	0.011	0.017	0.027	µg/L	0.011	CRL	Discharge Conc ≥ 50% WQBEL (RP)
Chlordane	0.002	0.002	4.06	6.34	10.2	µg/L	4.06	CRL	Discharge Conc ≥ 50% WQBEL (RP)
4,4-DDT	0.0002	0.0002	0.41	0.63	1.02	µg/L	0.41	CRL	Discharge Conc ≥ 50% WQBEL (RP)
4,4-DDE	0.0001	0.0002	0.27	0.42	0.68	µg/L	0.27	CRL	Discharge Conc ≥ 50% WQBEL (RP)

Dieldrin	0.000005	0.000008	0.014	0.021	0.034	µg/L	0.014	CRL	Discharge Conc ≥ 50% WQBEL (RP)
Heptachlor	0.00003	0.00005	0.081	0.13	0.2	µg/L	0.081	CRL	Discharge Conc ≥ 50% WQBEL (RP)
Heptachlor Epoxide	0.0002	0.0002	0.41	0.63	1.02	µg/L	0.41	CRL	Discharge Conc ≥ 50% WQBEL (RP)
Toxaphene	0.0003	0.0005	0.74	1.15	1.84	µg/L	0.74	CFC	Discharge Conc ≥ 50% WQBEL (RP)

INFLUENT conc's – detects – application and Form 50 Leachate Analysis 3rd Qtr 2020 through 3rd Qtr 2021:

Instructions | Discharge | Stream

Facility: **W.Berks LF** NPDES Permit No.: **PA0054852** Outfall No.: **001**

Evaluation Type: **Major Sewage / Industrial Waste** Wastewater Description: **leachate, condensate**

Discharge Characteristics								
Design Flow (MGD)*	Hardness (mg/l)*	pH (SU)*	Partial Mix Factors (PMFs)				Complete Mix Times (min)	
			AFC	CFC	THH	CRL	Q_{7-10}	Q_h
0.047	881	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	Strea m CV	Fate Coeff	FOS	Criteri a Mod	Chem Transl
Group 1	Total Dissolved Solids (PWS)	mg/L		6050									
	Chloride (PWS)	mg/L		2110									
	Bromide	mg/L		4.7									
	Sulfate (PWS)	mg/L		142									
	Fluoride (PWS)	mg/L		5									
Group 2	Total Aluminum	µg/L		1700									
	Total Antimony	µg/L		8.2									
	Total Arsenic	µg/L		218									
	Total Barium	µg/L		370									
	Total Beryllium	µg/L		4									
	Total Boron	µg/L		12700									
	Total Cadmium	µg/L		5									
	Total Chromium (III)	µg/L		370									
	Hexavalent Chromium	µg/L		20									
	Total Cobalt	µg/L		40									
	Total Copper	µg/L		140									
	Free Cyanide	µg/L											
	Total Cyanide	µg/L		160									
	Dissolved Iron	µg/L		1180									
	Total Iron	µg/L		31000									
	Total Lead	µg/L		12.1									
	Total Manganese	µg/L		4200									
	Total Mercury	µg/L		2.6									
	Total Nickel	µg/L		220									
	Total Phenols (Phenolics) (PWS)	µg/L		200									
	Total Selenium	µg/L		5									
	Total Silver	µg/L		10									
	Total Thallium	µg/L		0.2									
	Total Zinc	µg/L		190									
	Total Molybdenum	µg/L		20									
	Acrolein	µg/L	<										
	Acrylamide	µg/L	<										
	Acrylonitrile	µg/L	<										
	Benzene	µg/L	<										
	Bromoform	µg/L	<										

Group 3	Carbon Tetrachloride	µg/L	<										
	Chlorobenzene	µg/L											
	Chlorodibromomethane	µg/L	<										
	Chloroethane	µg/L	<										
	2-Chloroethyl Vinyl Ether	µg/L	<										
	Chloroform	µg/L	<										
	Dichlorobromomethane	µg/L	<										
	1,1-Dichloroethane	µg/L	<										
	1,2-Dichloroethane	µg/L	<										
	1,1-Dichloroethylene	µg/L	<										
	1,2-Dichloropropane	µg/L	<										
	1,3-Dichloropropylene	µg/L	<										
	1,4-Dioxane	µg/L		54.2									
	Ethylbenzene	µg/L		10.8									
	Methyl Bromide	µg/L		12.3									
	Methyl Chloride	µg/L		14.4									
	Methylene Chloride	µg/L	<										
	1,1,2,2-Tetrachloroethane	µg/L	<										
	Tetrachloroethylene	µg/L	<										
	Toluene	µg/L		9.3									
	1,2-trans-Dichloroethylene	µg/L	<										
	1,1,1-Trichloroethane	µg/L	<										
	1,1,2-Trichloroethane	µg/L	<										
	Trichloroethylene	µg/L		4.3									
	Vinyl Chloride	µg/L		2.5									
Group 4	2-Chlorophenol	µg/L	<										
	2,4-Dichlorophenol	µg/L	<										
	2,4-Dimethylphenol	µg/L	<										
	4,6-Dinitro-o-Cresol	µg/L	<										
	2,4-Dinitrophenol	µg/L	<										
	2-Nitrophenol	µg/L	<										
	4-Nitrophenol	µg/L	<										
	p-Chloro-m-Cresol	µg/L	<										
	Pentachlorophenol	µg/L	<										
	Phenol	µg/L	<										
	2,4,6-Trichlorophenol	µg/L	<										

Group 5	Acenaphthene	µg/L	<										
	Acenaphthylene	µg/L	<										
	Anthracene	µg/L		8.4									
	Benzidine	µg/L	<										
	Benzo(a)Anthracene	µg/L	<										
	Benzo(a)Pyrene	µg/L	<										
	3,4-Benzofluoranthene	µg/L	<										
	Benzo(ghi)Perylene	µg/L	<										
	Benzo(k)Fluoranthene	µg/L	<										
	Bis(2-Chloroethoxy)Methane	µg/L	<										
	Bis(2-Chloroethyl)Ether	µg/L	<										
	Bis(2-Chloroisopropyl)Ether	µg/L	<										
	Bis(2-Ethylhexyl)Phthalate	µg/L		57									
	4-Bromophenyl Phenyl Ether	µg/L	<										
	Butyl Benzyl Phthalate	µg/L	<										
	2-Chloronaphthalene	µg/L	<										
	4-Chlorophenyl Phenyl Ether	µg/L	<										
	Chrysene	µg/L	<										
	Dibenzo(a,h)Anthrancene	µg/L	<										
	1,2-Dichlorobenzene	µg/L	<										
	1,3-Dichlorobenzene	µg/L	<										
	1,4-Dichlorobenzene	µg/L	<										
	3,3-Dichlorobenzidine	µg/L	<										
	Diethyl Phthalate	µg/L	<										
	Dimethyl Phthalate	µg/L	<										
	Di-n-Butyl Phthalate	µg/L	<										
	2,4-Dinitrotoluene	µg/L	<										

	2,6-Dinitrotoluene	µg/L	<										
	Di-n-Octyl Phthalate	µg/L	<										
	1,2-Diphenylhydrazine	µg/L	<										
	Fluoranthene	µg/L	<										
	Fluorene	µg/L	<										
	Hexachlorobenzene	µg/L	<										
	Hexachlorobutadiene	µg/L	<										
	Hexachlorocyclopentadiene	µg/L	<										
	Hexachloroethane	µg/L	<										
	Indeno(1,2,3-cd)Pyrene	µg/L	<										
	Isophorone	µg/L	<										
	Naphthalene	µg/L	<										
	Nitrobenzene	µg/L	<										
	n-Nitrosodimethylamine	µg/L	<										
	n-Nitrosodi-n-Propylamine	µg/L	<										
	n-Nitrosodiphenylamine	µg/L	<										
	Phenanthrene	µg/L	<										
	Pyrene	µg/L	<										
	1,2,4-Trichlorobenzene	µg/L	<										
Group 6	Aldrin	µg/L	<										
	alpha-BHC	µg/L	<										
	beta-BHC	µg/L	<										
	gamma-BHC	µg/L	<										
	delta BHC	µg/L	<										
	Chlordane	µg/L	<										
	4,4-DDT	µg/L	<										
	4,4-DDE	µg/L	<										
	4,4-DDD	µg/L	<										
	Dieldrin	µg/L	<										
	alpha-Endosulfan	µg/L	<										
	beta-Endosulfan	µg/L	<										
	Endosulfan Sulfate	µg/L	<										
	Endrin	µg/L	<										
	Endrin Aldehyde	µg/L	<										
	Heptachlor	µg/L	<										
	Heptachlor Epoxide	µg/L	<										
	PCB-1016	µg/L		5									
	PCB-1221	µg/L		5									
	PCB-1232	µg/L		5									
	PCB-1242	µg/L		5									
	PCB-1248	µg/L		5									
	PCB-1254	µg/L		5									
	PCB-1260	µg/L		5									
	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											
	Total Xylenes	µg/L		16									
	Methyl Ethyl Ketone	µg/L		15.4									
	1,4 Dioxane HH provisional	µg/L		54.2									

Stream / Surface Water Information

W.Berks LF, NPDES Permit No. PA0054852, Outfall 001

Instructions | Discharge | *Stream*

Receiving Surface Water Name: **Schuylkill River**

No. Reaches to Model: **1**

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

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi^2)*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	000833	72.3	175	923			Yes
End of Reach 1	000833	68.5	160	926			Yes

Q_{7-10}

Location	RMI	LFY (cfs/mi^2)*	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness*	pH*	Hardness	pH
Point of Discharge	72.3	0.29	268		100							100	7		
End of Reach 1	68.5	0.29	269		100							100	7		

Q_h

Location	RMI	LFY (cfs/mi^2)	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness	pH	Hardness	pH
Point of Discharge	72.3														
End of Reach 1	68.5														

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

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Fluoride (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	
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	
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	
Toluene	0	0		0	N/A	N/A	N/A	
Trichloroethylene	0	0		0	0.6	0.6	8,124	
Vinyl Chloride	0	0		0	0.02	0.02	271	
Anthracene	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	0.32	0.32	4,333	
Total Xylenes	0	0		0	N/A	N/A	N/A	
Methyl Ethyl Ketone	0	0		0	N/A	N/A	N/A	
1,4 Dioxane HH provisional	0	0		0	0.35	0.35	4,739	

☑ ***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
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
Fluoride (PWS)	N/A	N/A	PWS Not Applicable
Total Aluminum	297,483	µg/L	Discharge Conc ≤ 10% WQBEL
Total Antimony	20,647	µg/L	Discharge Conc ≤ 10% WQBEL
Total Arsenic	36,869	µg/L	Discharge Conc ≤ 10% WQBEL
Total Barium	8,329,519	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Boron	3,212,815	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cadmium	857	µg/L	Discharge Conc ≤ 10% WQBEL
Total Chromium (III)	318,289	µg/L	Discharge Conc ≤ 10% WQBEL
Hexavalent Chromium	6,463	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cobalt	37,681	µg/L	Discharge Conc ≤ 10% WQBEL
Total Copper	5,619	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cyanide	N/A	N/A	No WQS
Dissolved Iron	1,106,078	µg/L	Discharge Conc ≤ 10% WQBEL
Total Iron	5,530,389	µg/L	Discharge Conc ≤ 10% WQBEL
Total Lead	11,762	µg/L	Discharge Conc ≤ 10% WQBEL
Total Manganese	3,686,926	µg/L	Discharge Conc ≤ 10% WQBEL
Total Mercury	184	µg/L	Discharge Conc ≤ 10% WQBEL
Total Nickel	188,080	µg/L	Discharge Conc ≤ 10% WQBEL
Total Phenols (Phenolics) (PWS)		µg/L	PWS Not Applicable
Total Selenium	18,395	µg/L	Discharge Conc ≤ 10% WQBEL
Total Silver	1,534	µg/L	Discharge Conc ≤ 10% WQBEL
Total Thallium	885	µg/L	Discharge Conc ≤ 10% WQBEL
Total Zinc	48,032	µg/L	Discharge Conc ≤ 10% WQBEL
Total Molybdenum	N/A	N/A	No WQS
1,4-Dioxane	N/A	N/A	No WQS
Ethylbenzene	250,711	µg/L	Discharge Conc ≤ 25% WQBEL
Methyl Bromide	218,154	µg/L	Discharge Conc ≤ 25% WQBEL

TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9

268	= Q stream (cfs)	0.5	= CV Daily
0.047	= Q discharge (MGD)	0.5	= CV Hourly
30	= no. samples	0.333	= AFC_Partial Mix Factor
0.3	= Chlorine Demand of Stream	1	= CFC_Partial Mix Factor
0	= Chlorine Demand of Discharge	15	= AFC_Criteria Compliance Time (min)
0.5	= BAT/BPJ Value	720	= CFC_Criteria Compliance Time (min)
0	= % Factor of Safety (FOS)		=Decay Coefficient (K)

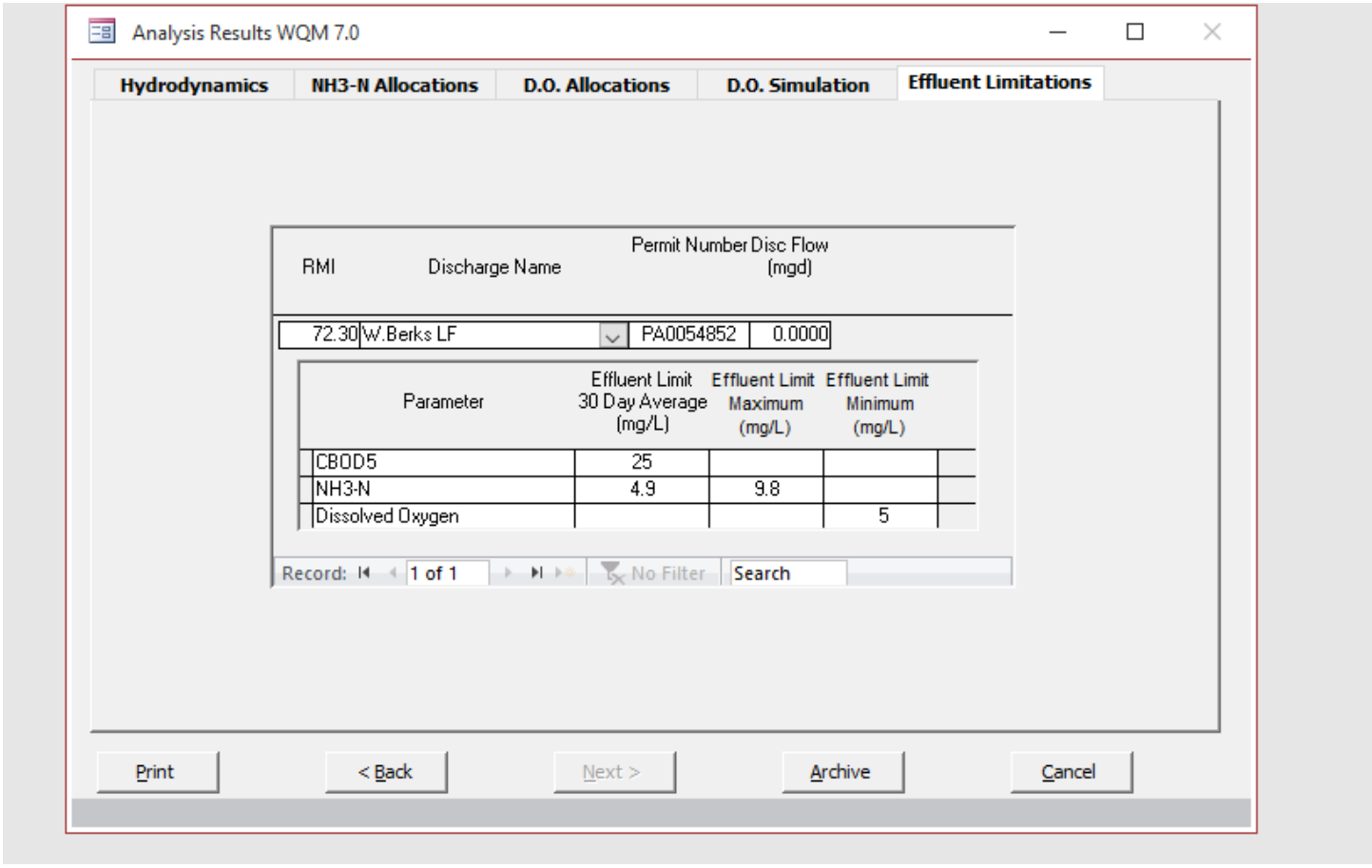
Source	Reference	AFC Calculations		Reference	CFC Calculations	
TRC	1.3.2.iii	WLA afc =	391.564	1.3.2.iii	WLA cfc =	1146.334
PENTOXSD TRG	5.1a	LTAMULT afc =	0.373	5.1c	LTAMULT cfc =	0.581
PENTOXSD TRG	5.1b	LTA_afc=	145.906	5.1d	LTA_cfc =	666.425

Source		Effluent Limit Calculations		
PENTOXSD TRG	5.1f	AML MULT =	1.231	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) =	0.500	BAT/BPJ
		INST MAX LIMIT (mg/l) =	1.635	

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)

1. (0.011/EXP(-K*CFC_tc/1440))+(((CFC_Yc*Qs*0.011)/(1.547*Qd)....
   ....*EXP(-K*CFC_tc/1440)))+Xd+(CFC_Yc*Qs*Xs/1.547*Qd))*(1-FOS/100)

2.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D.O. Allocations
D.O. Simulation
Effluent Limitations
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Permit Number
Disc Flow (mgd)
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W.Berks LF
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Parameter
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Effluent Limit Maximum (mg/L)
Effluent Limit Minimum (mg/L)
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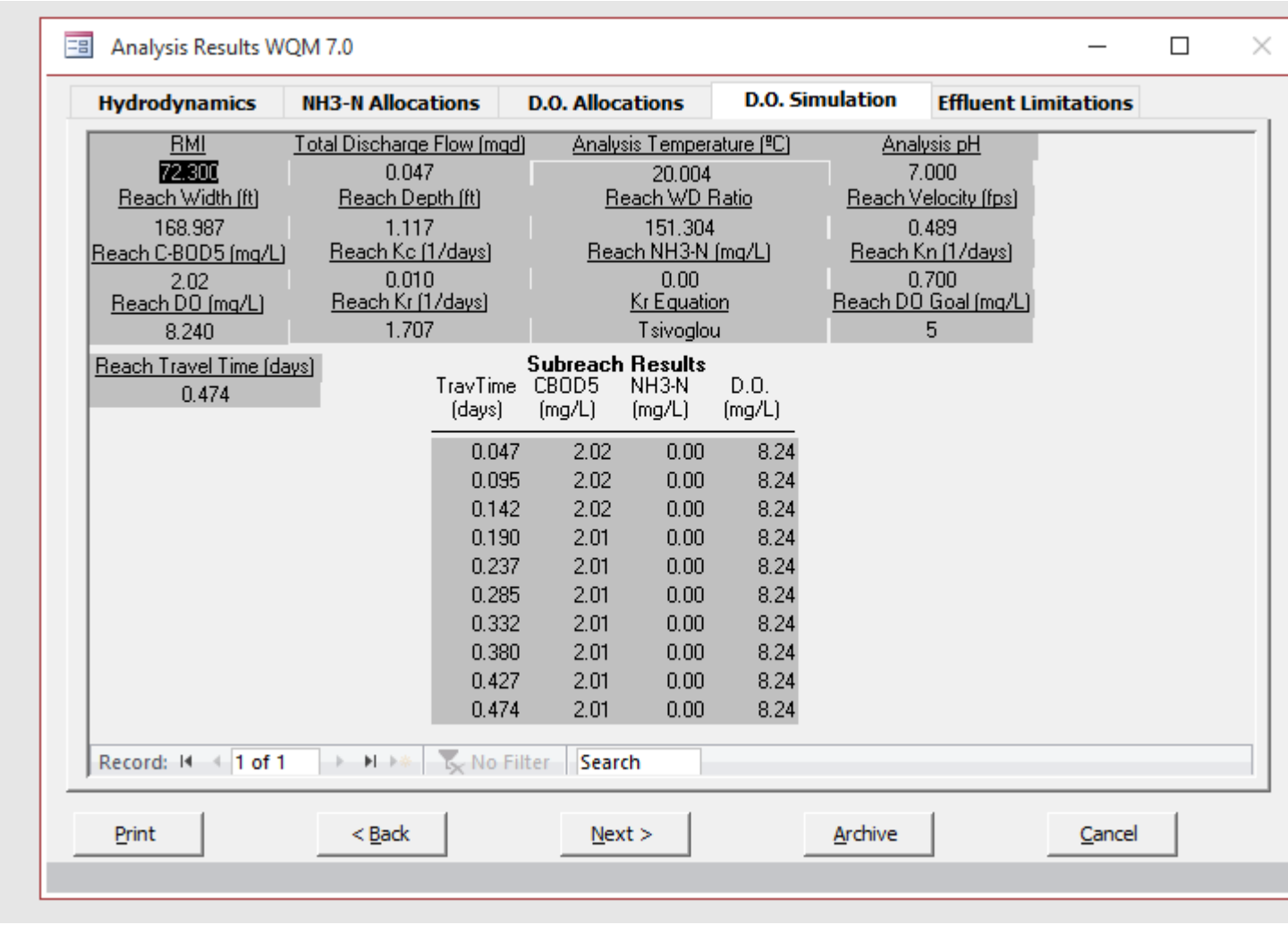
3.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NH3-N Allocations
D.O. Allocations
D.O. Simulation
Effluent Limitations
RMI
72.300
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0.047
Analysis Temperature (ºC)
20.004
Analysis pH
7.000
Reach Width (ft)
168.987
Reach Depth (ft)
1.117
Reach WD Ratio
151.304
Reach Velocity (fps)
0.489
Reach C-BOD5 (mg/L)
2.02
Reach Kc (1/days)
0.010
Reach NH3-N (mg/L)
0.00
Reach Kn (1/days)
0.700
Reach DO (mg/L)
8.240
Reach Kr (1/days)
1.707
Kr Equation
Tsivoglou
Reach DO Goal (mg/L)
5
Reach Travel Time (days)
0.474
Subreach Results
TravTime (days)
CBOD5 (mg/L)
NH3-N (mg/L)
D.O. (mg/L)
0.047 2.02 0.00 8.24
0.095 2.02 0.00 8.24
0.142 2.02 0.00 8.24
0.190 2.01 0.00 8.24
0.237 2.01 0.00 8.24
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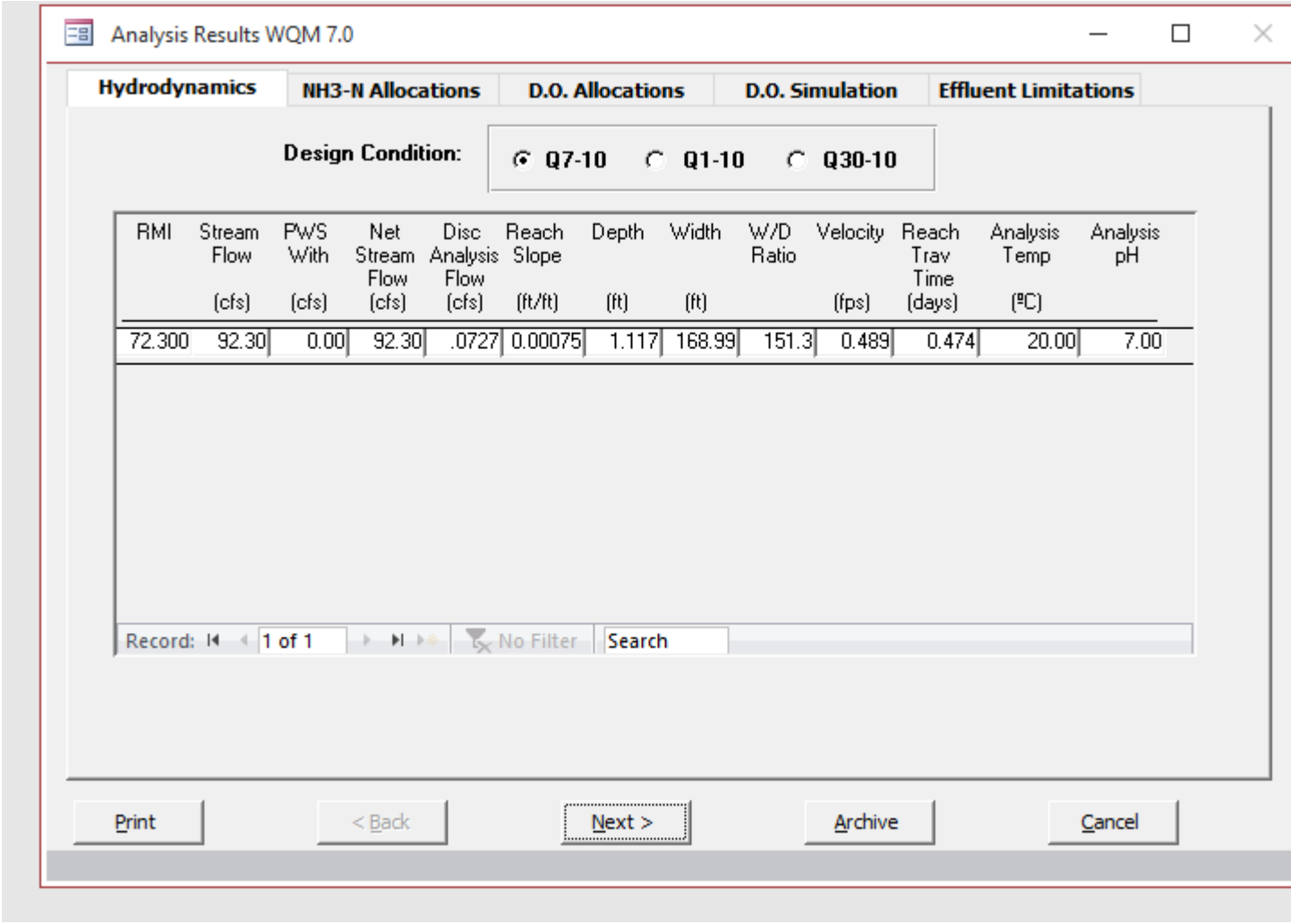
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Hydrodynamics
NH3-N Allocations
D.O. Allocations
D.O. Simulation
Effluent Limitations
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Q7-10
Q1-10
Q30-10
RMI
Stream Flow (cfs)
PWS With (cfs)
Net Stream Flow (cfs)
Disc Analysis Flow (cfs)
Reach Slope (ft/ft)
Depth (ft)
Width (ft)
W/D Ratio
Velocity (fps)
Reach Trav Time (days)
Analysis Temp (ºC)
Analysis pH
72.300 92.30 0.00 92.30 .0727 0.00075 1.117 168.99 151.3 0.489 0.474 20.00 7.00
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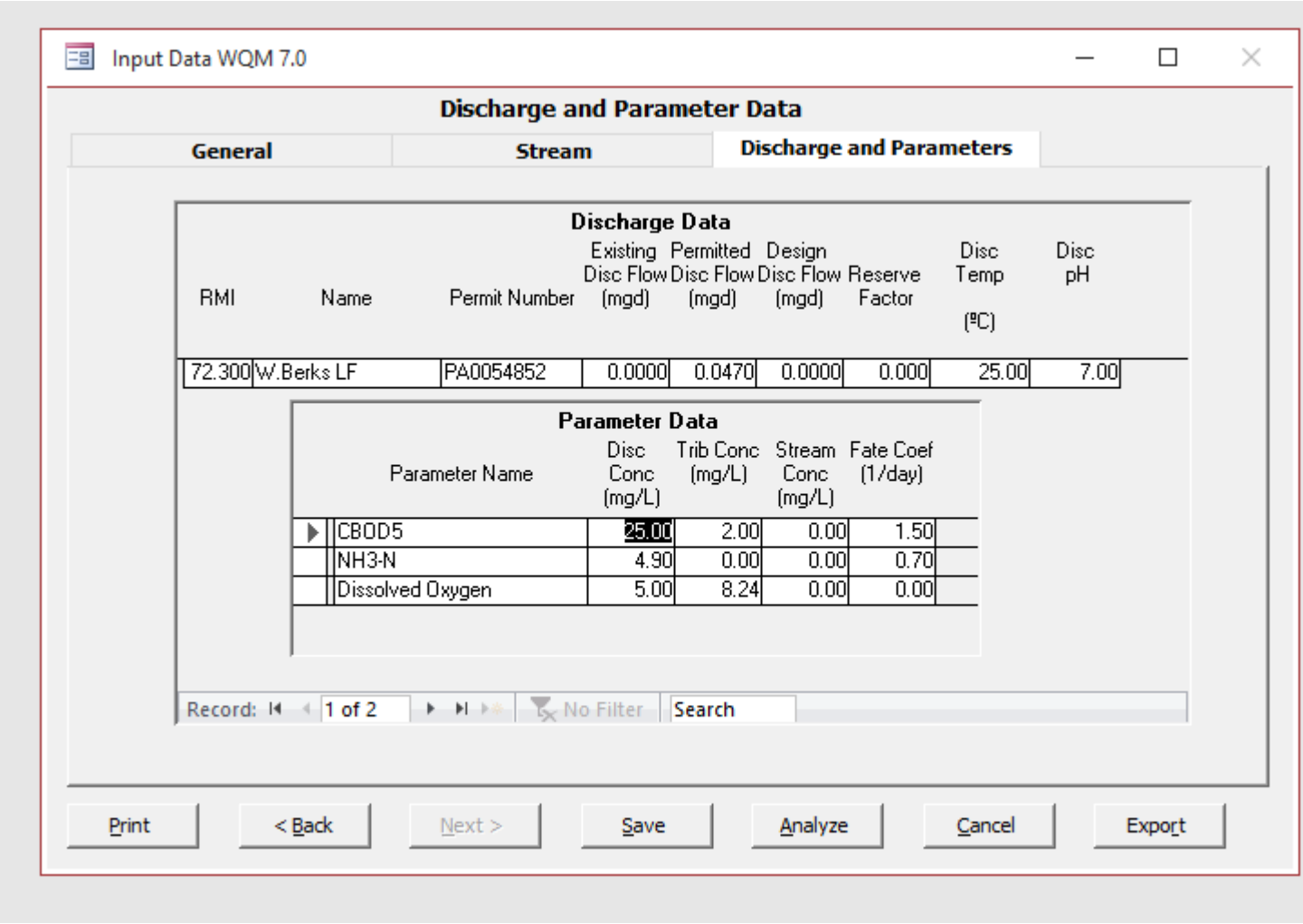
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Discharge and Parameters
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Permit Number
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Permitted Disc Flow (mgd)
Design Disc Flow (mgd)
Reserve Factor
Disc Temp (ºC)
Disc pH
72.300
W.Berks LF
PA0054852
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0.000
25.00
7.00
Parameter Data
Parameter Name
Disc Conc (mg/L)
Trib Conc (mg/L)
Stream Conc (mg/L)
Fate Coef (1/day)
CBOD5
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1.50
NH3-N
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Dissolved Oxygen
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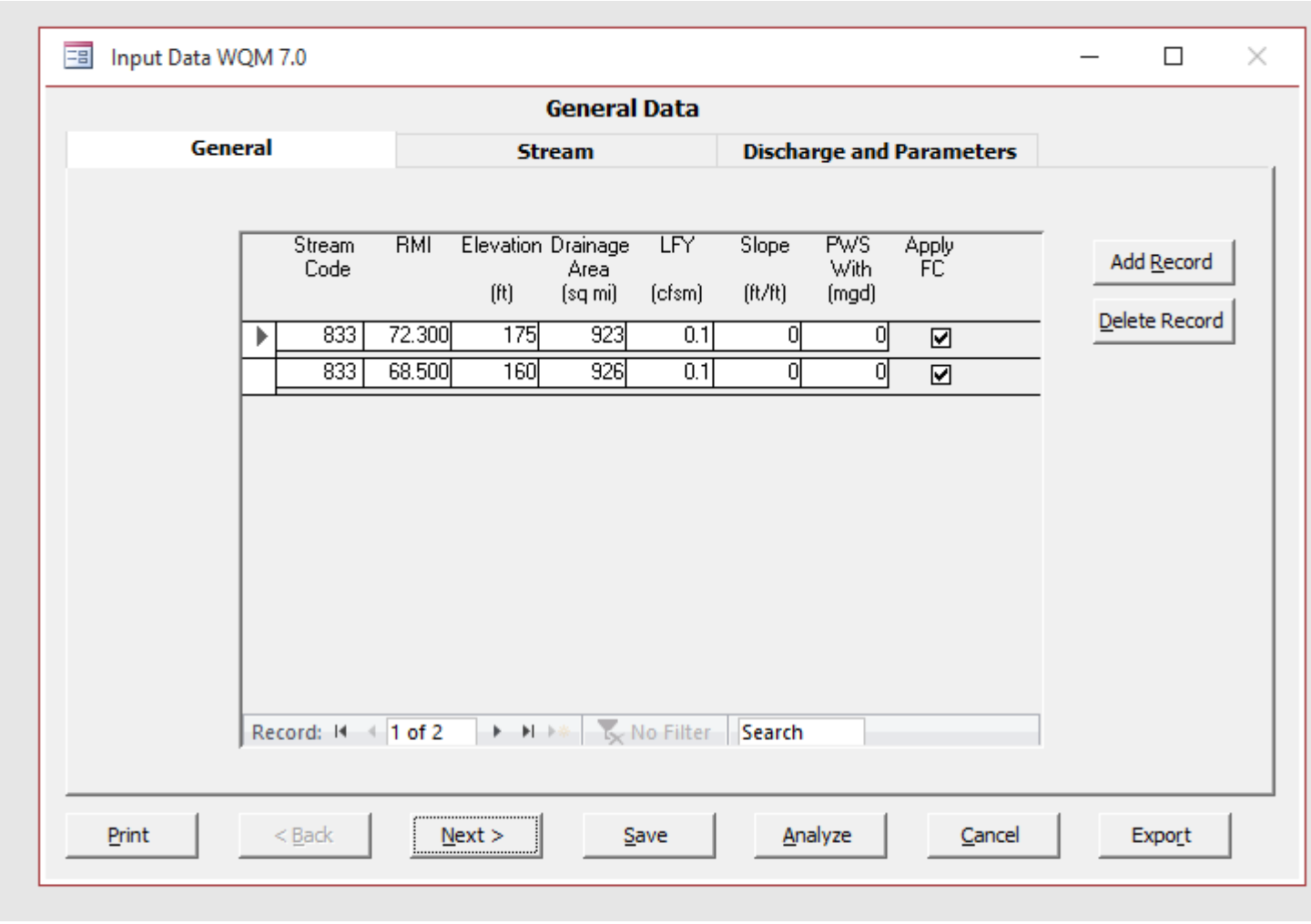
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Discharge and Parameters
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Drainage Area (sq mi)
LFY (cfsm)
Slope (ft/ft)
PWS With (mgd)
Apply FC
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833 68.500 160 926 0.1 0 0
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Delete Record
Record: 1 of 2
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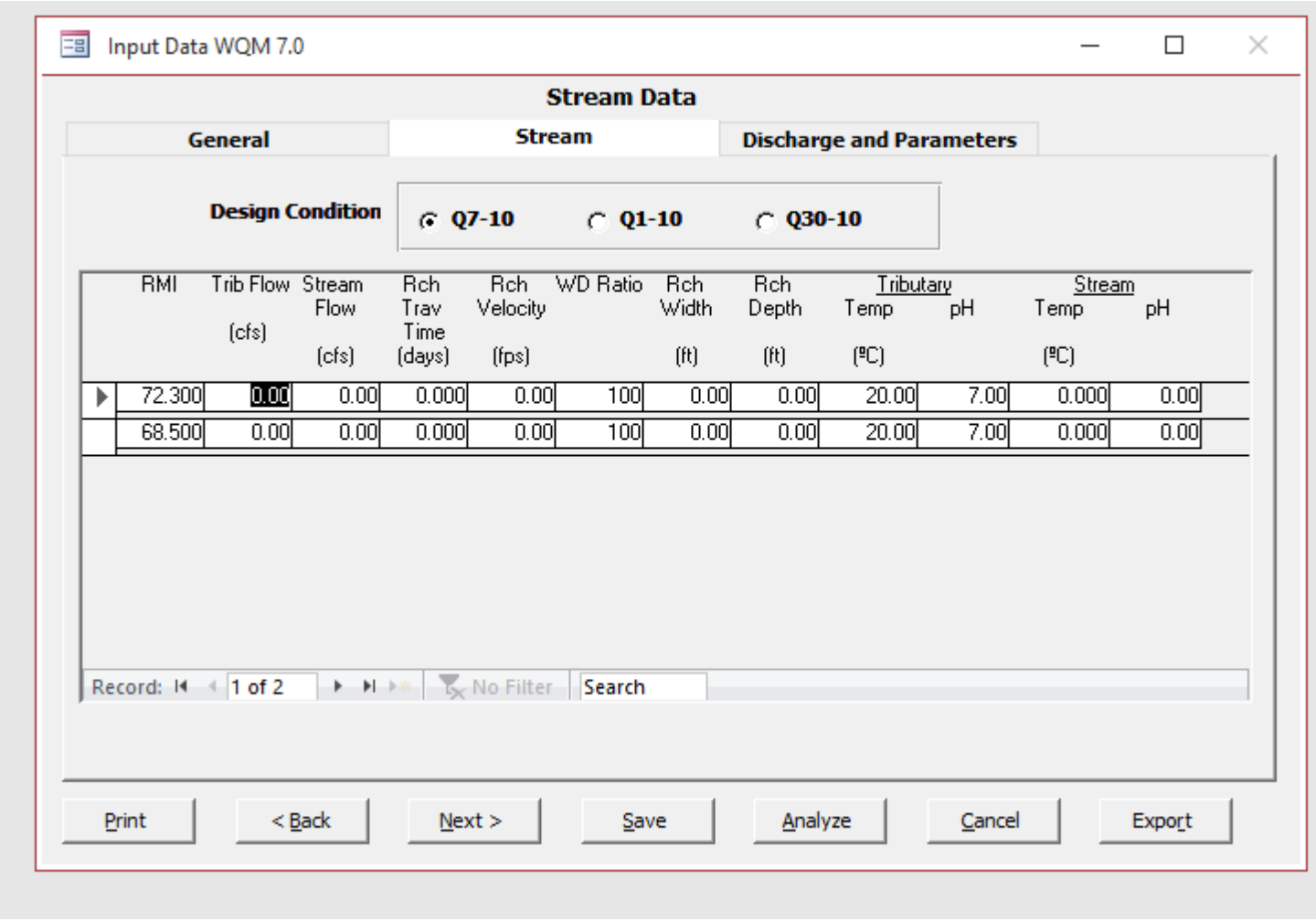
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Stream Data
General
Stream
Discharge and Parameters
Design Condition
Q7-10
Q1-10
Q30-10
RMI
Trib Flow (cfs)
Stream Flow (cfs)
Rch Trav Time (days)
Rch Velocity (fps)
WD Ratio
Rch Width (ft)
Rch Depth (ft)
Tributary Temp (ºC)
Tributary pH
Stream Temp (ºC)
Stream pH
72.300 0.00 0.00 0.000 0.00 100 0.00 0.00 20.00 7.00 0.000 0.00
68.500 0.00 0.00 0.000 0.00 100 0.00 0.00 20.00 7.00 0.000 0.00
Record: 1 of 2
No Filter
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Export

ActivityTypeCode	ActivityStartD	MonitoringLocationIde	SampleColle	Characteri	ResultSamp	ResultM	UnitCo	AnalyticalMth	Provider
Sample-Routine	11/22/2010	21PA_WQX-WQN0113	Water Grab	Total dissolved solids		128	mg/l	70300U	STORET
Sample-Routine	12/14/2011	21PA_WQX-WQN0113	Water Grab	Total dissolved solids		136	mg/l	70300U	STORET
Sample-Routine	9/29/2011	21PA_WQX-WQN0113	Water Grab	Total dissolved solids		122	mg/l	70300U	STORET
Sample-Routine	1/20/2011	21PA_WQX-WQN0113	Water Grab	Total dissolved solids		238	mg/l	70300U	STORET
Sample-Routine	5/24/2011	21PA_WQX-WQN0113	Water Grab	Total dissolved solids		152	mg/l	70300U	STORET
Quality Control Sample-Field Replicate	7/28/2011	21PA_WQX-WQN0113	Water Grab	Total dissolved solids		300	mg/l	70300U	STORET
Sample-Routine	3/24/2011	21PA_WQX-WQN0113	Water Grab	Total dissolved solids		194	mg/l	70300U	STORET
Sample-Routine	10/25/2011	21PA_WQX-WQN0113	Water Grab	Total dissolved solids		172	mg/l	70300U	STORET
Quality Control Sample-Field Replicate	7/28/2011	21PA_WQX-WQN0113	Water Grab	Total dissolved solids		260	mg/l	70300U	STORET
Sample-Routine	8/23/2012	21PA_WQX-WQN0113	Water Grab	Total dissolved solids		256	mg/l	70300U	STORET
Sample-Routine	4/12/2012	21PA_WQX-WQN0113	Water Grab	Total dissolved solids		220	mg/l	70300U	STORET
Sample-Routine	2/16/2012	21PA_WQX-WQN0113	Water Grab	Total dissolved solids		220	mg/l	70300U	STORET
Sample-Routine	6/6/2012	21PA_WQX-WQN0113	Water Grab	Total dissolved solids		138	mg/l	70300U	STORET
Sample-Routine	11/13/2012	21PA_WQX-WQN0113	Water Grab	Total dissolved solids		168	mg/l	70300U	STORET
Sample-Routine	1/15/2013	21PA_WQX-WQN0113	Water Grab	Total dissolved solids		166	mg/l	70300U	STORET
Sample-Routine	9/18/2013	21PA_WQX-WQN0113	Water Grab	Total dissolved solids		264	mg/l	70300U	STORET
Sample-Routine	5/29/2013	21PA_WQX-WQN0113	Water Grab	Total dissolved solids		204	mg/l	70300U	STORET
Sample-Routine	10/29/2013	21PA_WQX-WQN0113	Water Grab	Total dissolved solids		258	mg/l	70300U	STORET
Sample-Routine	3/25/2013	21PA_WQX-WQN0113	Water Grab	Total dissolved solids		164	mg/l	70300U	STORET
Sample-Routine	7/8/2013	21PA_WQX-WQN0113	Water Grab	Total dissolved solids		172	mg/l	70300U	STORET
Sample-Routine	12/16/2013	21PA_WQX-WQN0113	Water Grab	Total dissolved solids		154	mg/l	70300U	STORET
Sample-Routine	2/18/2014	21PA_WQX-WQN0113	Water Grab	Total dissolved solids		226	mg/l	70300U	STORET
Sample-Routine	11/24/2014	21PA_WQX-WQN0113	Water Grab	Total dissolved solids		270	mg/l	70300U	STORET
Sample-Routine	6/11/2014	21PA_WQX-WQN0113	Water Grab	Total dissolved solids		226	mg/l	70300U	STORET
Sample-Routine	4/10/2014	21PA_WQX-WQN0113	Water Grab	Total dissolved solids		128	mg/l	70300U	STORET
Sample-Routine	8/12/2014	21PA_WQX-WQN0113	Water Grab	Total dissolved solids		220	mg/l	70300U	STORET
Sample-Routine	5/27/2015	21PA_WQX-WQN0113	Water Grab	Total dissolved solids		254	mg/l	70300U	STORET
Sample-Routine	12/28/2015	21PA_WQX-WQN0113	Water Grab	Total dissolved solids		314	mg/l	70300U	STORET
Sample-Routine	7/28/2015	21PA_WQX-WQN0113	Water Grab	Total dissolved solids		238	mg/l	70300U	STORET
Sample-Routine	9/29/2015	21PA_WQX-WQN0113	Water Grab	Total dissolved solids		268	mg/l	70300U	STORET
Sample-Routine	3/25/2015	21PA_WQX-WQN0113	Water Grab	Total dissolved solids		156	mg/l	70300U	STORET
Sample-Routine	10/29/2015	21PA_WQX-WQN0113	Water Grab	Total dissolved solids		128	mg/l	70300U	STORET
Sample-Routine	1/14/2015	21PA_WQX-WQN0113	Water Grab	Total dissolved solids		190	mg/l	70300U	STORET
Sample-Routine	2/29/2016	21PA_WQX-WQN0113	Water Grab	Total dissolved solids		136	mg/l	70300U	STORET
Sample-Routine	6/28/2016	21PA_WQX-WQN0113	Water Grab	Total dissolved solids		266	mg/l	70300U	STORET
Sample-Routine	11/7/2016	21PA_WQX-WQN0113	Water Grab	Total dissolved solids		254	mg/l	70300U	STORET
Sample-Routine	8/30/2016	21PA_WQX-WQN0113	Water Grab	Total dissolved solids		238	mg/l	70300U	STORET
Sample-Routine	4/26/2016	21PA_WQX-WQN0113	Water Grab	Total dissolved solids		218	mg/l	70300U	STORET
Sample-Routine	10/24/2017	21PA_WQX-WQN0113	Water Grab	Total dissolved solids		234	mg/l	70300U	STORET
Sample-Routine	12/18/2017	21PA_WQX-WQN0113	Water Grab	Total dissolved solids		190	mg/l	70300U	STORET
Sample-Routine	7/26/2017	21PA_WQX-WQN0113	Water Grab	Total dissolved solids		118	mg/l	70300U	STORET
Sample-Routine	3/20/2017	21PA_WQX-WQN0113	Water Grab	Total dissolved solids		218	mg/l	70300U	STORET
Sample-Routine	1/26/2017	21PA_WQX-WQN0113	Water Grab	Total dissolved solids		136	mg/l	70300U	STORET
Sample-Routine	9/19/2017	21PA_WQX-WQN0113	Water Grab	Total dissolved solids		254	mg/l	70300U	STORET
Sample-Routine	5/24/2017	21PA_WQX-WQN0113	Water Grab	Total dissolved solids		194	mg/l	70300U	STORET
Sample-Routine	2/8/2018	21PA_WQX-WQN0113	Water Grab	Total dissolved solids		220	mg/l	70300U	STORET
Sample-Routine	6/18/2018	21PA_WQX-WQN0113	Water Grab	Total dissolved solids		242	mg/l	70300U	STORET
Sample-Routine	4/10/2018	21PA_WQX-WQN0113	Water Grab	Total dissolved solids		176	mg/l	70300U	STORET
Sample-Routine	8/22/2018	21PA_WQX-WQN0113	Water Grab	Total dissolved solids		188	mg/l	70300U	STORET
Sample-Routine	11/14/2018	21PA_WQX-WQN0113	Water Grab	Total dissolved solids		132	mg/l	70300U	STORET
Sample-Routine	3/18/2019	21PA_WQX-WQN0113	Water Grab	Total dissolved solids		140	mg/l	70300U	STORET
Sample-Routine	5/29/2019	21PA_WQX-WQN0113	Water Grab	Total dissolved solids		194	mg/l	70300U	STORET
Sample-Routine	7/8/2019	21PA_WQX-WQN0113	Water Grab	Total dissolved solids		240	mg/l	70300U	STORET
Quality Control Sample-Field Replicate	7/8/2019	21PA_WQX-WQN0113	Water Grab	Total dissolved solids		228	mg/l	70300U	STORET
Sample-Routine	9/23/2019	21PA_WQX-WQN0113	Water Grab	Total dissolved solids		262	mg/l	70300U	STORET
Sample-Routine	2/5/2019	21PA_WQX-WQN0113	Water Grab	Total dissolved solids		196	mg/l	70300U	STORET
Sample-Routine	9/14/2020	21PA_WQX-WQN0113	Water Grab	Total dissolved solids		234	mg/l	70300U	STORET
Sample-Routine	11/17/2020	21PA_WQX-WQN0113	Water Grab	Total dissolved solids		160	mg/l	70300U	STORET
Sample-Routine	12/15/2020	21PA_WQX-WQN0113	Water Grab	Total dissolved solids		158	mg/l	70300U	STORET
Sample-Routine	10/27/2020	21PA_WQX-WQN0113	Water Grab	Total dissolved solids		220	mg/l	70300U	STORET
					Average	**202.5**			

VQN111, Schuylkill River at Pottstown:

Organizatior	ActivityTypeCode	ActivityMedia	ActivityStartDa	EndDate	MonitoringLoca	CharacteristicName	Result	Units	Qualifier	ResultStatus	AnalyticalMth	Provider		
USGS-PA	Sample-Routine	Surface Water	6/8/2021		USGS-01472000	Total dissolved solids	230	mg/l		Preliminary		NWIS	230	
USGS-PA	Sample-Routine	Surface Water	4/21/2021		USGS-01472000	Total dissolved solids	188	mg/l		Preliminary		NWIS	188	
USGS-PA	Sample-Routine	Surface Water	3/23/2021		USGS-01472000	Total dissolved solids	156	mg/l		Preliminary		NWIS	156	
USGS-PA	Sample-Routine	Surface Water	2/22/2021		USGS-01472000	Total dissolved solids	210	mg/l		Preliminary		NWIS	210	
USGS-PA	Sample-Routine	Surface Water	1/26/2021		USGS-01472000	Total dissolved solids	208	mg/l		Preliminary		NWIS	208	
USGS-PA	Sample-Routine	Surface Water	12/2/2020		USGS-01472000	Total dissolved solids	168	mg/l		Preliminary	GRV43	NWIS	168	
USGS-PA	Sample-Routine	Surface Water	11/12/2020		USGS-01472000	Total dissolved solids	212	mg/l		Preliminary	GRV43	NWIS	212	
USGS-PA	Sample-Routine	Surface Water	10/21/2020		USGS-01472000	Total dissolved solids	270	mg/l		Preliminary	GRV43	NWIS	270	
USGS-PA	Sample-Routine	Surface Water	9/30/2020		USGS-01472000	Total dissolved solids	164	mg/l		Accepted	GRV43	NWIS	164	
USGS-PA	Sample-Routine	Surface Water	8/12/2020		USGS-01472000	Total dissolved solids	198	mg/l		Accepted	GRV43	NWIS	198	
USGS-PA	Sample-Routine	Surface Water	7/6/2020		USGS-01472000	Total dissolved solids	266	mg/l		Accepted	GRV43	NWIS	266	
USGS-PA	Sample-Routine	Surface Water	6/8/2020		USGS-01472000	Total dissolved solids	196	mg/l		Accepted	GRV43	NWIS	196	
USGS-PA	Sample-Routine	Surface Water	5/11/2020		USGS-01472000	Total dissolved solids	184	mg/l		Accepted	GRV43	NWIS	184	
USGS-PA	Sample-Routine	Surface Water	3/10/2020		USGS-01472000	Total dissolved solids	232	mg/l		Accepted	GRV43	NWIS	232	
USGS-PA	Sample-Routine	Surface Water	2/4/2020		USGS-01472000	Total dissolved solids	186	mg/l		Preliminary		NWIS	186	
USGS-PA	Sample-Routine	Surface Water	1/16/2020		USGS-01472000	Total dissolved solids	206	mg/l		Accepted	GRV43	NWIS	206	
USGS-PA	Sample-Routine	Surface Water	12/4/2019		USGS-01472000	Total dissolved solids	238	mg/l		Accepted	GRV43	NWIS	238	
USGS-PA	Sample-Routine	Surface Water	11/14/2019		USGS-01472000	Total dissolved solids	208	mg/l		Accepted	GRV43	NWIS	208	
USGS-PA	Sample-Routine	Surface Water	10/30/2019		USGS-01472000	Total dissolved solids	196	mg/l		Accepted	GRV43	NWIS	196	
USGS-PA	Sample-Routine	Surface Water	9/18/2019		USGS-01472000	Total dissolved solids	298	mg/l		Accepted	GRV43	NWIS	298	
USGS-PA	Sample-Routine	Surface Water	8/19/2019		USGS-01472000	Total dissolved solids	258	mg/l		Accepted	GRV43	NWIS	258	
USGS-PA	Sample-Routine	Surface Water	7/8/2019		USGS-01472000	Total dissolved solids	236	mg/l		Accepted	GRV43	NWIS	236	
USGS-PA	Sample-Routine	Surface Water	6/10/2019		USGS-01472000	Total dissolved solids	256	mg/l		Accepted	GRV43	NWIS	256	
USGS-PA	Sample-Routine	Surface Water	5/30/2019		USGS-01472000	Total dissolved solids	210	mg/l		Accepted	GRV43	NWIS	210	
USGS-PA	Sample-Routine	Surface Water	4/8/2019		USGS-01472000	Total dissolved solids	216	mg/l		Accepted	GRV43	NWIS	216	
USGS-PA	Sample-Routine	Surface Water	3/18/2019		USGS-01472000	Total dissolved solids	176	mg/l		Accepted	GRV43	NWIS	176	
USGS-PA	Sample-Routine	Surface Water	2/26/2019		USGS-01472000	Total dissolved solids	204	mg/l		Accepted	GRV43	NWIS	204	
USGS-PA	Sample-Routine	Surface Water	1/28/2019		USGS-01472000	Total dissolved solids	160	mg/l		Accepted	GRV43	NWIS	160	
							212	Average					211.7857	Avg

Next pages = impact of TDS from Western Berks LF (only) on downstream PADWIS

Discharge Information

Instructions | Discharge | Stream

Facility: **Western Berks LF** NPDES Permit No.: **PA0054852** Outfall No.: **001**

Evaluation Type: **Major Sewage / Industrial Waste** Wastewater Description: **leachate,condensate**

Discharge Characteristics								
Design Flow (MGD)*	Hardness (mg/l)*	pH (SU)*	Partial Mix Factors (PMFs)				Complete Mix Times (min)	
			AFC	CFC	THH	CRL	Q_{7-10}	Q_h
0.047	881	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		12,000		202.5							
	Chloride (PWS)	mg/L											
	Bromide	mg/L											
	Sulfate (PWS)	mg/L											
	Fluoride (PWS)	mg/L											
Group 2	Total Aluminum	µg/L											
	Total Antimony	µg/L											
	Total Arsenic	µg/L											
	Total Barium	µg/L											
	Total Beryllium	µg/L											
	Total Boron	µg/L											
	Total Cadmium	µg/L											
	Total Chromium (III)	µg/L											
	Hexavalent Chromium	µg/L											
	Total Cobalt	µg/L											
	Total Copper	µg/L											
	Free Cyanide	µg/L											
	Total Cyanide	µg/L											
	Dissolved Iron	µg/L											
	Total Iron	µg/L											
	Total Lead	µg/L											
	Total Manganese	µg/L											
	Total Mercury	µg/L											
	Total Nickel	µg/L											
	Total Phenols (Phenolics) (PWS)	µg/L											
	Total Selenium	µg/L											
	Total Silver	µg/L											
	Total Thallium	µg/L											
	Total Zinc	µg/L											
	Total Molybdenum	µg/L											

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.3, March 2021

Stream / Surface Water Information

Western Berks LF, NPDES Permit No. PA0054852, Outfall 001

Instructions | Discharge | *Stream*

Receiving Surface Water Name: **Schuylkill River**

No. Reaches to Model: **1**

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

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi^2)*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	000833	72.3	175	923			Yes
End of Reach 1	000833	57.03	130	1150		12	Yes

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

Location	RMI	LFY (cfs/mi^2)*	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness*	pH*	Hardness	pH
Point of Discharge	72.3	0.29	268		100							100	7		
End of Reach 1	57.03	0.28	320		100							100	7		

Q_h

Location	RMI	LFY (cfs/mi^2)	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness	pH	Hardness	pH
Point of Discharge	72.3														
End of Reach 1	57.03														

Model Results

Western Berks LF, NPDES Permit No. PA0054852, Outfall 001

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

☐ ***Hydrodynamics***

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 15 PMF: 0.156 Analysis Hardness (mg/l): 101.36 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)	202500	0		0	N/A	N/A	N/A	

☑ ***CFC*** CCT (min): ###### PMF: 1 Analysis Hardness (mg/l): 100.21 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)	202500	0		0	N/A	N/A	N/A	

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

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	202500	0		0	500,000	500,000	##########	WQC applied at RMI 57.03 with a design stream flow of 320 cfs

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

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	202500	0		0	N/A	N/A	N/A	

☑ ***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)	1,309,829	mg/L	Discharge Conc ≤ 10% WQBEL

ALL dischargers to river segment, combined Qd, conservative assumptions……determine TDS impact…

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.3, March 2021

Discharge Information

Instructions | Discharge | Stream

Facility: TDS mini TMDL on Sch River segment NPDES Permit No.: PA0054852 Outfall No.: 001

Evaluation Type: Major Sewage / Industrial Waste Wastewater Description: multiple dischgrs, using W.Berks LF RMI

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
38.2	100	7						

	Discharge Pollutant	Units		Max Discharge Conc	0 if left blank: Trib Conc	0 if left blank: Stream Conc	0.6 if left blank: Daily CV	0.6 if left blank: Hourly CV	0 if left blank: Strea m CV	0 if left blank: Fate Coeff	0 if left blank: FOS	1 if left blank: Criteri a Mod	1 if left blank: Chem Transl
Group 1	Total Dissolved Solids (PWS)	mg/L		15,200		202.5							
	Chloride (PWS)	mg/L											
	Bromide	mg/L											
	Sulfate (PWS)	mg/L											
	Fluoride (PWS)	mg/L											
Group 2	Total Aluminum	µg/L											
	Total Antimony	µg/L											
	Total Arsenic	µg/L											
	Total Barium	µg/L											
	Total Beryllium	µg/L											
	Total Boron	µg/L											
	Total Cadmium	µg/L											
	Total Chromium (III)	µg/L											
	Hexavalent Chromium	µg/L											
	Total Cobalt	µg/L											
	Total Copper	µg/L											
	Free Cyanide	µg/L											
	Total Cyanide	µg/L											
	Dissolved Iron	µg/L											
	Total Iron	µg/L											
	Total Lead	µg/L											
	Total Manganese	µg/L											
	Total Mercury	µg/L											
	Total Nickel	µg/L											
	Total Phenols (Phenolics) (PWS)	µg/L											
	Total Selenium	µg/L											
	Total Silver	µg/L											
	Total Thallium	µg/L											
	Total Zinc	µg/L											
	Total Molybdenum	µg/L											
	Acrolein	µg/L	<										
	Acrylamide	µg/L	<										
	Acrylonitrile	µg/L	<										
	Benzene	µg/L	<										
	Bromoform	µg/L	<										

Discharge Information 11/16/2021 Page 1

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Toxics Management Spreadsheet
Version 1.3, March 2021

Stream / Surface Water Information

TDS mini TMDL on Sch River segment, NPDES Permit No. PA0054852, Outfall 001

Instructions | Discharge | *Stream*

Receiving Surface Water Name: **Schuylkill River**

No. Reaches to Model: **1**

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

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi²)*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	000833	58.8	145	1040			Yes
End of Reach 1	000833	57.03	130	1150		12	Yes

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

Location	RMI	LFY (cfs/mi²)*	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	58.8	0.28	294		100							100	7		
End of Reach 1	57.03	0.28	320		100										

Q_h

Location	RMI	LFY (cfs/mi²)	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	58.8														
End of Reach 1	57.03														

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Toxics Management Spreadsheet
Version 1.3, March 2021

Model Results

TDS mini TMDL on Sch River segment, NPDES Permit No. PA0054852, Outfall 001

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

☑ ***Hydrodynamics***

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

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)
58.8	294		294	59.095	0.002	1.133	113.268	100.	1.062	0.102	252.435
57.03	320	18.564	301.436					100.000			

Q_h

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)
58.8	1067.39		1067.39	59.095	0.002	1.887	113.268	60.022	2.034	0.053	152.021
57.03	1149.449	18.564	1130.89								

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 15 PMF: 0.244 Analysis Hardness (mg/l): 100 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)	202500	0		0	N/A	N/A	N/A	

☑ ***CFC*** CCT (min): ###### PMF: 1 Analysis Hardness (mg/l): 100 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)	202500	0		0	N/A	N/A	N/A	

☑ ***THH*** CCT (min): ###### THH PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A PWS PMF: 0.7621

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments

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

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	202500	0		0	N/A	N/A	N/A	

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

No. Samples/Month: 4

Pollutants	*Mass Limits* AML (lbs/day)	*Mass Limits* MDL (lbs/day)	*Concentration Limits* AML	*Concentration Limits* MDL	*Concentration Limits* IMAX	*Concentration Limits* Units	Governing WQBEL	WQBEL Basis	Comments
Total Dissolved Solids (PWS)	550,430	858,759	1,728	2,696	4,319	mg/L	1,728	THH-PWS	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

Site-Level and Primary Facility-Level Inspections since 2017, eFacts Site Search:

Inspection ID=column 1; Inspection Date=column 2; Inspection Type=column 3; Inspection Results= column 4

3042492 10/12/2021 Routine/Complete Inspection No Violations Noted
3042485 09/09/2021 Routine/Complete Inspection No Violations Noted
3009633 08/13/2021 Routine/Complete Inspection No Violations Noted
3229749 08/05/2021 Administrative/File Review No Violations Noted
2998957 07/15/2021 Routine/Complete Inspection No Violations Noted
3205536 06/14/2021 AES Submittal Review No Violations Noted
2998954 06/07/2021 Routine/Complete Inspection No Violations Noted
2995396 05/20/2021 Routine/Complete Inspection No Violations Noted
2995389 04/22/2021 Routine/Complete Inspection No Violations Noted
3243655 04/19/2021 Administrative/File Review No Violations Noted
2979997 03/12/2021 Routine/Complete Inspection No Violations Noted
2979994 02/24/2021 Routine/Complete Inspection No Violations Noted
3151564 02/17/2021 Title V Compliance Cert. Review No Violations Noted
3151561 02/03/2021 Title V Compliance Cert. Received No Violations Noted
2935465 01/12/2021 Routine/Partial Inspection No Violations Noted
2935459 12/08/2020 Routine/Partial Inspection No Violations Noted
2932483 11/09/2020 Routine/Complete Inspection No Violations Noted
2932484 11/09/2020 Compliance Evaluation No Violations Noted
2932481 10/07/2020 Routine/Complete Inspection No Violations Noted
2932480 09/24/2020 Routine/Complete Inspection No Violations Noted
3084662 09/21/2020 Compliance Evaluation No Violations Noted
2931444 08/20/2020 Routine/Complete Inspection No Violations Noted
2931436 07/29/2020 Routine/Complete Inspection No Violations Noted
2917855 06/24/2020 Routine/Complete Inspection No Violations Noted
3044676 06/10/2020 Groundwater Monitoring Evaluation No Violations Noted
3047372 05/29/2020 AES Submittal Review No Violations Noted
2917853 05/19/2020 Routine/Partial/Aerial Inspection No Violations Noted
2917845 04/10/2020 Routine/Partial Inspection No Violations Noted
2917840 03/05/2020 Routine/Complete Inspection No Violations Noted
2999660 02/20/2020 Title V Compliance Cert. Review No Violations Noted
2890928 02/13/2020 Routine/Complete Inspection No Violations Noted
2999657 02/03/2020 Title V Compliance Cert. Received No Violations Noted
2888409 01/21/2020 Routine/Complete Inspection No Violations Noted
2866458 12/05/2019 Routine/Complete Inspection No Violations Noted
2968269 11/20/2019 Full Compliance Evaluation No Violations Noted

2866455 11/07/2019 Routine/Complete Inspection No Violations Noted
2866444 10/02/2019 Routine/Complete Inspection No Violations Noted
2832743 09/10/2019 Routine/Complete Inspection No Violations Noted
2923018 08/22/2019 Administrative/File Review No Violations Noted
2827763 08/15/2019 Routine/Complete Inspection No Violations Noted
2810502 07/10/2019 Routine/Complete Inspection No Violations Noted
2797356 06/12/2019 Routine/Complete Inspection No Violations Noted
2887540 05/31/2019 AES Submittal Review No Violations Noted
2793579 05/23/2019 Routine/Complete Inspection No Violations Noted
2780878 04/23/2019 Routine/Complete Inspection No Violations Noted
2760379 03/06/2019 Routine/Complete Inspection No Violations Noted
2843276 02/22/2019 Title V Compliance Cert. Review No Violations Noted
2843436 02/22/2019 Administrative/File Review No Violations Noted
2760374 02/06/2019 Routine/Complete Inspection No Violations Noted
2843273 02/01/2019 Title V Compliance Cert. Received No Violations Noted
2736728 01/07/2019 Routine/Complete Inspection No Violations Noted
2863753 12/13/2018 Administrative/File Review Adverse Event Unacceptable Stack Test …LF cell A, not closed out in database but no open Enforcement actions per DEP eFacts database, Program ID 20-4329021-1
2730113 12/10/2018 Routine/Complete Inspection No Violations Noted
2728787 11/06/2018 Compliance Evaluation No Violations Noted
2728786 11/01/2018 Routine/Complete Inspection No Violations Noted
2713367 10/05/2018 Routine/Complete Inspection No Violations Noted
2843334 09/21/2018 Administrative/File Review Adverse Events or Actions Reported ……LF cell B-1, not closed out in database but no open Enforcement actions per DEP eFacts database, Program ID 20-4329021-1

3216112 09/21/2018 Administrative/File Review No Violations Noted
2775183 09/14/2018 Full Compliance Evaluation No Viols - Permanently Shut Down
2685294 09/04/2018 Routine/Complete Inspection No Violations Noted
2668304 08/06/2018 Routine/Complete Inspection No Violations Noted
2658548 07/17/2018 Routine/Complete Inspection No Violations Noted
2646827 06/19/2018 Routine/Complete Inspection No Violations Noted
2631859 05/14/2018 Routine/Complete Inspection No Violations Noted
2736198 04/27/2018 Full Compliance Evaluation No Violations Noted
2719358 04/17/2018 Title V Compliance Cert. Review No Violations Noted
2617845 04/12/2018 Routine/Complete Inspection No Violations Noted
2602898 03/05/2018 Routine/Complete Inspection No Violations Noted
2590776 02/06/2018 Routine/Complete Inspection No Violations Noted
2719355 01/31/2018 Title V Compliance Cert. Received No Violations Noted
2590766 01/11/2018 Routine/Complete Inspection No Violations Noted

From 2015 Fact Sheet relevant to stormwater at site:

Development of Effluent Limitations

Outfall No.	002, 003, 004, 007, 008, 009, 010, and 011	**Design Flow (MGD)**	0
Latitude	See below	**Longitude**	See below
Wastewater Description:	Stormwater		

Outfall 002	40°18'31"	75°55'09"	Sedimentation Basin 1
Outfall 003	40°18'22"	75°55'11"	Sedimentation Basin 2
Outfall 004	40°18'14"	75°55'08"	Sedimentation Basin 3
Outfall 007	40°17'59"	75°54'53"	Sedimentation Basin 4
Outfall 008	40°17'50"	75°54'40"	Sedimentation Basin 6
Outfall 009	40°17'53"	75°54'35"	Sedimentation Basin 7
Outfall 010	40°18'19"	75°54'58"	drains western area near cell 5
Outfall 011	40°18'16"	75°54'42"	drains area around new scale area & new Sedimentation Basin for the Eastern Expansion Area

The previous NPDES permit listed monitoring requirements for each outfall and included DMRs for each outfall, but with a condition that representative sampling would be allowed at similarly identical outfalls. Federal regulations (and the DEP's industrial wastewater NPDES permit application) allows sampling at representative outfalls when two or more outfalls are reasonably believed to discharge "substantially identical" effluents.

The permittee only reported monitoring results on their DMRs for outfalls 002 and 009. According to maps provided, outfall 002 is in the area of the hazardous leachate collection tank and outfall 009 is in the area of the leachate treatment plant and leachate holding tanks, supporting the use of these two outfalls as the representative outfalls. In the past protection report, it was noted that stormwater outfalls 002, 003, and 004 are from drainage areas from an area of the landfill that has been capped since 1998, the hazardous waste / residual waste cells. Leachate generated from the former hazardous waste area is kept segregated and disposed off-site as hazardous waste, not sent to the landfill's treatment plant—per a conversation between the permit writer and PADEP's Waste Management staff.

In the renewal application, sampling results were provided for outfalls 002 and 009 only. No demonstration or argument was made in the application to support why these outfalls are representative, just continuing past practice.

Since the time of the last permit's issuance, substantial changes have occurred at the landfill. The truck weighing and washing area was moved to its new location, the Eastern Expansion area was opened with a new Sedimentation Basin, and stormwater outfall 011 was constructed. This renewal permit has added outfall 011 as a required sampling location. The permittee may still include an argument in the next renewal application to reduce the number of stormwater outfalls that must be sampled; such argument should be supported by drainage maps and sampling results.

Sampling results:

-The permit writer only found stormwater sampling results for the non-representative outfalls in the 2007 NPDES application. Those results supported outfall 002 or 003 and outfall 009 or 010 being used as the representative outfalls but they were based on only three rounds of sampling and did not include outfall 011 (since it was not yet constructed). The stormwater results for all outfalls also indicated that some metals were measured at concentrations greater than State water quality criteria: Total Lead, Total Iron, and Total Mercury but only at outfalls 007, 009, and 010 for Mercury. While the concentrations of these metals were greater than water quality criteria, they were not at levels which would trigger effluent limits.

- As for the representative outfalls, the DMRs reviewed from January 2013 through November 2014 for outfalls 002 and 009 indicated that some metals were measured in the stormwater at concentrations greater than State water quality criteria: Total Lead, Total Iron, and Total Chromium at both outfalls and Total Mercury at outfall 002. The sampling results included in the application were only based on one sampling event. Again, the concentrations of these metals were not at levels which would trigger effluent limits. (For example, the concentrations reported were much lower than the WQBELs developed by the Department's PENTOX model for the process wastewater at outfall 001 which assumed a discharge flow of 0.047 MGD. The lower the discharge flow in the model, the less stringent are the model results' concentration limits.)