Southcentral Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	**NPDES PERMIT FACT SHEET INDIVIDUAL INDUSTRIAL WASTE (IW) AND IW STORMWATER**	Application No.	**PA0082953**
Facility Type	**Industrial**		APS ID	**278375**
Major / Minor	**Minor**		Authorization ID	**1300579**

Applicant and Facility Information

Applicant Name	**Diller Transfer Station LLC**	Facility Name	**Diller Transfer Station**
Applicant Address	1184 Mcclellandtown Road	Facility Address	6820 Wertzville Road
	Mcclellandtown, PA 15458		Enola, PA 17025
Applicant Contact	Joseph Santangelo	Facility Contact	Joseph Santangelo
Applicant Phone	(724) 892-2199	Facility Phone	(724) 892-2199
Client ID	43756	Site ID	269585
SIC Code	4953	Municipality	Hampden Township
SIC Description	Trans. & Utilities - Refuse Systems	County	Cumberland
Date Application Received	December 23, 2019	EPA Waived?	Yes
Date Application Accepted	January 7, 2020	If No, Reason	
Purpose of Application	NPDES Renewal.		

Summary of Review

Diller Transfer Station LLC (DTS) has applied to the Pennsylvania Department of Environmental Protection (DEP) for reissuance of its NPDES permit. The permit was last reissued on June 9, 20215 and became effective on July 1, 2015. The permit expired on June 30, 2020 but the terms and conditions of the permit have been administratively extended since that time. It is noteworthy that the company has changed its name from Diller Transfer Station Inc. to Diller Transfer Station LLC during this permit term; but no permit amendment application was received. DEP has decided to process this name change in conjunction with this permit renewal.

It is recommended that the permit be drafted.

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

Approve	Deny	Signatures	Date
X		*Jinsu Kim* Jinsu Kim / Environmental Engineering Specialist	February 24, 2021
		Daniel W. Martin, P.E. / Environmental Engineer Manager	
X		/s/ Maria D. Bebenek, P.E. / Program Manager	March 11, 2021

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	001	Design Flow (MGD)	0.01
Latitude	40° 17' 16.00"	Longitude	77° 0' 39.00"
Quad Name	Wertzville	Quad Code	1629
Wastewater Description:	Treated Industrial Wastewater		
Receiving Waters	Sears Run	Stream Code	10210
NHD Com ID	56402941	RMI	4.13
Drainage Area	0.85 mi^2	Yield (cfs/mi^2)	0.1596
$Q_{7\text{-}10}$ Flow (cfs)	0.1357	$Q_{7\text{-}10}$ Basis	USGS gage 01570000
Elevation (ft)	431	Slope (ft/ft)	0.0044
Watershed No.	7-B	Chapter 93 Class.	WWF
Existing Use	None	Existing Use Qualifier	N/A
Exceptions to Use	N/A	Exceptions to Criteria	N/A
Assessment Status	Impaired		
Cause(s) of Impairment	Siltation, Cause Unknown		
Source(s) of Impairment	Construction, Land Disposal		
TMDL Status	Pending	Name	N/A
Nearest Downstream Public Water Supply Intake	Steelton Municipal Waterworks		
PWS Waters	Susquehanna River	Flow at Intake (cfs)	3490
PWS RMI	68.98	Distance from Outfall (mi)	17.9

Drainage Area
The discharge is to Sears Run at RM 4.13. A drainage area upstream of the point of discharge is estimated to be 0.85 using USGS StreamStats available at https://streamstats.usgs.gov/ss/.

Streamflow
USGS StreamStats produced a Q7-10 flow of 0.0389 cfs at the point of discharge. However, the estimated drainage area is lower than the minimum required drainage area; this resulted in unknown errors in calculating low flow statistics. Since this Q7-10 may not be valid, the previous low flow method is used. Q7-10 of 0.1357 cfs is determined based on the correlation with the USGS stream gage no. 0.1570000.

Sears Run
Sears Run is not explicitly listed in 25 Pa Code §93.9. Sears Run is a tributary of Conodoguinet Creek. Under 25 Pa Code §93.9, all unnamed tributaries of Conodoguinet Creek from PA 997 at Roxbury to Mouth are designated as warm water fishes and support migratory fishes. No special protection water is impacted by this discharge. Sears Run at the point of discharge is impaired for siltation and for unknown cause as a result of construction and land disposal, respectively. A TMDL has not been developed to address the impairments; yet, it is clear that the discharge contributes significantly to the impairment that was caused of land disposal. This information will be considered in developing permit requirements.

Public Water Supply
Considering the distance and dilution, the discharge is not expected to affect the water supply.

Treatment Facility Summary				
Treatment Facility Name: Diller Transfer Station & Landfill			**WQM Permit No.** 2177201; 2177201 10-1	**Issuance Date** 01/31/1977; 07/16/2010
Waste Type	**Degree of Treatment**	**Process Type**	**Disinfection**	**Avg Annual Flow (MGD)**
Industrial Waste	Biological (Industrial Waste)	Activated Sludge	No Disinfection	0.01
Hydraulic Capacity (MGD)	**Organic Capacity (lbs/day)**	**Load Status**	**Biosolids Treatment**	**Biosolids Use/Disposal**
_0.01__	85	Not Overloaded	Holding Tank	Other WWTP

DTS utilizes a refuse system (SIC code 4953) and is a municipal solid waste transfer station and recycling facility. DTS treats leachate generated from the closed landfill area by on-site wastewater treatment facility. The treatment facility was originally designed to treat sanitary wastewater, treating up to 0.02 MGD of sanitary wastewater generated from a mobile home park. Following the purchase of the property, Boyd Diller Inc. relocated the treatment facility and began using the system to treat a combination of groundwater and leachate from its closed landfill.

Following issuance of the NPDES permit in February of 2010, the existing WQM permit was amended to replace coarse bubble diffusers with 18 fine bubble diffusers to increase transfer efficiency and to reduce ammonia level to NPDES limit of 4.9 mg/L. During this amendment, the design flow has also decreased from 0.02 MGD to 0.01 MGD. This change was already considered in developing permit requirements for the last permit renewal.

Along with sedimentation basins and an influent pump station, the treatment system, according to the application, is as follows: Aeration basin → Clarifier → Manganese filter system → outfall to Sears Run.

A sludge holding tank is installed for on-site sludge handling. Sludge generated from sedimentation basins, aeration basin, and from the sludge holding tank is currently pumped to offsite WWTP disposal. Supernatant from clarifier is pumped to effluent filter system. Used filters are disposed through waste transfer station.

Compliance History	
Summary of DMRs:	A summary of past 12-month DMR data is presented on the next page.
Summary of Inspections:	07/23/2019: Mike Benham (Water Quality Specialist) and Kevin Buss (Environmental Compliance Specialist) conducted a routine inspection. O&M recommendations were given but no violation was identified at the time of inspection. 04/13/2018: Pat Bowen, a former water quality specialist, conducted a routine inspection and noted that effluent at Outfall 001 appeared clear. No issued were found at the time of inspection.
Other Comments:	A number of effluent violations occurred from December 2018 through June 2019 that are associated with Manganese and ammonia-nitrogen. A Notice of Violation was issued on April 17, 2019 and July 30, 2019 addressing these violations. DEP and DTS entered a Consent Assessment of Civil Penalty (CACP) on May 22, 2020. As of the date of this fact sheet, there is no open violation associated with this facility or permittee.

Effluent Data

DMR Data for Outfall 001 (from August 1, 2019 to July 31, 2020)

Parameter	JUL-20	JUN-20	MAY-20	APR-20	MAR-20	FEB-20	JAN-20	DEC-19	NOV-19	OCT-19	SEP-19	AUG-19
Flow (MGD) Average Monthly	0.001751	0.003616	0.005494	0.005954	0.005988	0.005438	0.004849	0.004702	0.003539	0.002771	0.001689	0.002407
Flow (MGD) Daily Maximum	0.00326	0.00778	0.01985	0.00929	0.01662	0.01216	0.01382	0.00949	0.02353	0.00832	0.00415	0.00352
pH (S.U.) Minimum	8.01	7.87	7.80	7.87	7.57	7.82	7.83	7.80	7.85	7.88	8.09	7.56
pH (S.U.) Instantaneous Maximum	8.29	8.18	8.10	8.07	8.05	8.11	8.12	8.14	8.16	8.36	8.30	8.21
DO (mg/L) Minimum	6.74	6.55	6.22	8.15	9.61	7.85	8.6	9.1	9.2	8.3	8.1	7.9
TRC (mg/L) Average Monthly		< 0.5			< 0.4			< 0.2			< 0.2	
TRC (mg/L) Instantaneous Maximum		< 0.5			< 0.4			< 0.2			< 0.2	
CBOD5 (lbs/day) Average Monthly	0.032	0.044	0.069	0.11	0.073	0.062	0.072	0.135	< 0.042	0.01	< 0.034	0.034
CBOD5 (lbs/day) Daily Maximum	0.041	0.064	0.098	0.114	0.108	0.085	0.074	0.153	0.054	0.01	0.04	0.05
CBOD5 (mg/L) Average Monthly	2	1.5	2	2	1.5	1.5	2	3	< 1.67	1	< 2	1.5
CBOD5 (mg/L) Daily Maximum	2	2	2	2	2	2	2	4	2	1	2	2
TSS (lbs/day) Average Monthly	< 0.049	0.154	0.257	0.353	0.151	< 0.082	< 0.072	0.182	< 0.06	< 0.019	< 0.048	< 0.058
TSS (lbs/day) Daily Maximum	0.057	0.161	0.376	0.479	0.193	< 0.085	< 0.074	0.306	0.082	0.03	0.08	0.08
TSS (mg/L) Average Monthly	< 3.5	5.5	6.67	6.5	3.5	< 2	< 2	3	< 2.33	< 2	< 3	< 3
TSS (mg/L) Daily Maximum	5	6	10	9	5	< 2	< 2	4	3	3	4	5
Fecal Coliform (CFU/100 ml) Geometric Mean	41.2	97.2	23.2	1	3	< 1	2	8	64.8	65.1	14	42.4
Nitrate-Nitrite (lbs/day) Average Monthly	0.135	0.293	0.213	0.278	0.242	0.275	0.237	0.296	0.144	0.067	0.134	0.18
Nitrate-Nitrite (lbs/day) Daily Maximum	0.18	0.33	0.24	0.31	0.27	0.30	0.26	0.44	0.19	0.07	0.18	0.21

Nitrate-Nitrite (mg/L) Average Monthly	8.21	10.35	6.93	5.04	5.27	6.71	6.53	5.49	5.66	7.06	8.98	8.61
Total Nitrogen (lbs/day) Average Monthly	< 0.16	0.371	0.333	0.53	0.48	0.474	0.322	0.372	< 0.189	< 0.116	< 0.16	0.232
Total Nitrogen (lbs/day) Daily Maximum	< 0.23	0.41	0.40	0.55	0.54	0.51	0.34	0.55	< 0.25	< 0.21	< 0.24	0.30
Total Nitrogen (mg/L) Average Monthly	< 9.56	13.15	10.3	9.64	10.42	11.51	8.88	6.89	< 7.39	< 11.83	< 10.48	10.88
Ammonia (lbs/day) Average Monthly	0.0111	0.0321	0.11	0.2076	0.1924	0.0947	0.0485	0.046	0.0112	< 0.0004	< 0.0011	< 0.006
Ammonia (lbs/day) Daily Maximum	0.0213	0.053	0.1605	0.2282	0.1999	0.1195	0.0509	0.078	0.0139	< 0.0004	0.0023	0.01
Ammonia (mg/L) Average Monthly	0.555	1.055	2.913	3.79	4.24	2.285	1.34	0.75	0.447	< 0.04	< 0.063	< 0.267
Ammonia (mg/L) Daily Maximum	1.03	1.65	3.68	4.29	4.79	2.82	1.38	1.02	0.51	< 0.04	0.11	0.41
TKN (lbs/day) Average Monthly	< 0.026	0.078	0.121	0.253	0.238	0.199	0.085	0.076	< 0.045	< 0.049	< 0.026	0.052
TKN (lbs/day) Daily Maximum	< 0.045	0.084	0.158	0.261	0.271	0.263	0.092	0.115	< 0.069	< 0.14	< 0.05	0.09
TKN (mg/L) Average Monthly	< 1.4	2.8	3.4	4.6	5.2	4.8	2.4	1.4	< 1.7	< 4.8	< 1.5	2.3
Total Phosphorus (lbs/day) Average Monthly	0.00036	0.00057	0.00097	0.00138	0.00087	0.00031	0.00055	0.00106	0.00028	0.0002	0.00032	0.0004
Total Phosphorus (lbs/day) Daily Maximum	0.0005	0.0006	0.0015	0.0017	0.0010	0.0004	0.0007	0.0015	0.0003	0.0002	0.0004	0.0005
Total Phosphorus (mg/L) Average Monthly	0.022	0.02	0.027	0.025	0.019	0.008	0.015	0.02	0.011	0.022	0.022	0.019
Total Phosphorus (mg/L) Daily Maximum	0.024	0.02	0.04	0.03	0.02	0.01	0.02	0.02	0.03	0.03	0.03	0.03
Total Arsenic (lbs/day) Average Monthly	< 0.00016	< 0.00028	< 0.00041	< 0.00055	< 0.00046	< 0.00041	< 0.00036	< 0.00053	< 0.00035	< 0.00007	< 0.00012	< 0.0002
Total Arsenic (lbs/day) Daily Maximum	< 0.00021	< 0.00032	< 0.00049	< 0.00057	< 0.00054	< 0.00042	< 0.00037	< 0.00076	< 0.00054	< 0.0001	< 0.00021	< 0.0005
Total Arsenic (mg/L) Average Monthly	< 0.01	< 0.01	< 0.0133	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.0133	< 0.0074	< 0.0077	< 0.011
Total Arsenic (mg/L) Daily Maximum	< 0.01	< 0.01	< 0.02	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.02	< 0.01	< 0.01	< 0.02

Total Copper (lbs/day) Average Monthly	< 0.00054	< 0.00014	< 0.0002	< 0.00028	< 0.00023	< 0.00021	< 0.00018	< 0.00026	< 0.0002	< 0.00004	< 0.00006	< 0.00018
Total Copper (lbs/day) Daily Maximum	< 0.00103	< 0.00016	< 0.00024	< 0.00028	< 0.00027	< 0.00021	< 0.00018	0.00038	< 0.00027	< 0.00005	< 0.0001	< 0.00026
Total Copper (mg/L) Average Monthly	< 0.0275	< 0.005	< 0.0067	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.008	< 0.0038	< 0.0037	< 0.008
Total Copper (mg/L) Daily Maximum	< 0.05	< 0.005	< 0.01	< 0.005	< 0.005	< 0.005	< 0.005	0.005	< 0.01	< 0.005	< 0.005	0.009
Dissolved Iron (lbs/day) Average Monthly	< 0.0003	< 0.0006	< 0.0009	< 0.0034	< 0.0009	< 0.0008	< 0.0007	< 0.0011	< 0.0008	< 0.0002	< 0.0003	< 0.0007
Dissolved Iron (lbs/day) Daily Maximum	< 0.0004	< 0.0006	< 0.001	0.0057	< 0.00108	< 0.00085	< 0.00074	< 0.00153	0.00136	< 0.00021	< 0.00042	< 0.0013
Dissolved Iron (mg/L) Average Monthly	< 0.02	< 0.02	< 0.03	< 0.06	< 0.02	< 0.02	< 0.02	< 0.02	< 0.03	< 0.02	< 0.02	< 0.03
Dissolved Iron (mg/L) Daily Maximum	< 0.02	< 0.02	< 0.05	0.1	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02	0.02	< 0.05
Total Manganese (lbs/day) Average Monthly	0.0021	0.0097	0.0313	0.0512	0.0276	0.0165	0.015	0.0249	0.0059	0.0005	0.0007	0.001
Total Manganese (lbs/day) Daily Maximum	0.0023	0.0148	0.0431	0.0553	0.0309	0.0195	0.017	0.0436	0.0076	0.0006	0.001	0.002
Total Manganese (mg/L) Average Monthly	0.145	0.325	0.833	0.935	0.6	0.4	0.415	0.39	0.2307	0.0484	0.0498	0.069
Total Manganese (mg/L) Daily Maximum	0.2	0.46	1.12	1.04	0.63	0.46	0.48	0.57	0.28	0.06	0.05	0.08
Total Silver (lbs/day) Average Monthly	< 0.00003	< 0.00006	< 0.00009	< 0.00011	< 0.00009	< 0.00008	< 0.00007	< 0.00011	< 0.00008	< 0.00001	< 0.00003	< 0.00006
Total Silver (lbs/day) Daily Maximum	< 0.00004	< 0.00006	< 0.0001	< 0.00011	< 0.00011	< 0.00008	< 0.00007	< 0.00015	0.00014	< 0.00002	< 0.00004	< 0.00013
Total Silver (mg/L) Average Monthly	< 0.002	< 0.002	< 0.003	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.003	< 0.0014	< 0.0017	< 0.003
Total Silver (mg/L) Daily Maximum	< 0.002	< 0.002	< 0.005	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.005	< 0.002	< 0.002	< 0.005
Total Zinc (lbs/day) Average Monthly	< 0.00008	< 0.00014	< 0.0002	< 0.00028	< 0.00023	< 0.00021	< 0.00018	< 0.0003	< 0.00018	< 0.0002	< 0.00011	< 0.00014
Total Zinc (lbs/day) Daily Maximum	< 0.0001	< 0.00016	< 0.00024	< 0.00028	< 0.00027	< 0.00021	0.00018	< 0.00031	< 0.0003	< 0.0005	< 0.0002	< 0.0003
Total Zinc (mg/L) Average Monthly	< 0.005	< 0.005	< 0.0067	< 0.005	< 0.005	< 0.005	< 0.005	< 0.007	< 0.007	< 0.0204	< 0.0065	< 0.006

Total Zinc (mg/L) Daily Maximum	< 0.005	< 0.005	< 0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.01	< 0.01	< 0.05	< 0.01	< 0.01
Phenol (lbs/day) Average Monthly		< 0.00018						< 0.00027				
Phenol (lbs/day) Daily Maximum		< 0.00018						< 0.00027				
Phenol (mg/L) Average Monthly		< 0.010						< 0.010				
Phenol (mg/L) Daily Maximum		< 0.010						< 0.010				
a-Terpineol (lbs/day) Average Monthly		< 0.00018						< 0.00027				
a-Terpineol (lbs/day) Daily Maximum		< 0.00018						< 0.00027				
a-Terpineol (mg/L) Average Monthly		< 0.010						< 0.010				
a-Terpineol (mg/L) Daily Maximum		< 0.010						< 0.010				
Benzoic Acid (lbs/day) Average Monthly		< 0.00035						< 0.00057				
Benzoic Acid (lbs/day) Daily Maximum		< 0.00035						< 0.00057				
Benzoic Acid (mg/L) Average Monthly		< 0.020						< 0.021				
Benzoic Acid (mg/L) Daily Maximum		< 0.020						< 0.021				
p-Cresol (lbs/day) Average Monthly		< 0.00018						< 0.00027				
p-Cresol (lbs/day) Daily Maximum		< 0.00018						< 0.00027				
p-Cresol (mg/L) Average Monthly		< 0.010						< 0.010				
p-Cresol (mg/L) Daily Maximum		< 0.010						< 0.010				

Existing Permit Requirements

A table below summarizes effluent limits and monitoring requirements placed in the current permit:

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
Dissolved Oxygen	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
Total Residual Chlorine	XXX	XXX	XXX	0.5	XXX	1.6	1/quarter	Grab
CBOD5	2.1	4.1	XXX	25	50	60	2/month	24-Hr Composite
Total Suspended Solids	2.2	4.5	XXX	27	54	68	2/month	24-Hr Composite
Fecal Coliform (CFU/100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	XXX	1/month	Grab
Fecal Coliform (CFU/100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2,000 Geo Mean	XXX	XXX	1/month	Grab
Total Phosphorus	0.17	0.33	XXX	2.0	4.0	5.0	2/month	24-Hr Composite
Ammonia-Nitrogen	0.4	0.8	XXX	4.9	10	12	2/month	24-Hr Composite
Nitrate-Nitrite as N	Report	Report	XXX	Report	XXX	XXX	2/month	24-Hr Composite
Total Kjeldahl Nitrogen	Report	Report	XXX	Report	XXX	XXX	2/month	24-Hr Composite
Total Nitrogen	Report	Report	XXX	Report	XXX	XXX	2/month	Calculation
Total Arsenic	Report	Report	XXX	0.05	0.10	0.125	2/month	24-Hr Composite
Total Copper	Report	Report	XXX	0.05	0.10	0.125	2/month	24-Hr Composite
Dissolved Iron	0.23	0.46	XXX	2.8	5.6	7.0	2/month	24-Hr Composite
Total Manganese	Report	Report	XXX	1.0	2.0	2.5	2/month	24-Hr Composite

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		
Total Silver	Report	Report	XXX	0.01	0.02	0.025	2/month	24-Hr Composite
Total Zinc	Report	Report	XXX	0.11	0.20	0.275	2/month	24-Hr Composite
Phenol	Report	Report	XXX	0.015	0.026	0.0375	2/year	24-Hr Composite
a-Terpineol	Report	Report	XXX	0.016	0.033	0.04	2/year	24-Hr Composite
Benzoic Acid	Report	Report	XXX	0.071	0.12	0.178	2/year	24-Hr Composite
p-Cresol	Report	Report	XXX	0.014	0.025	0.035	2/year	24-Hr Composite

Development of Effluent Limitations and Monitoring Requirements

Outfall No. 001 **Design Flow (MGD)** .01
Latitude 40º 17' 16.00" **Longitude** -77º 0' 39.00"
Wastewater Description: IW Process Effluent with ELG

Technology-Based Limitations

DTS is subject to the federal effluent guidelines and standards promulgated under 40 CFR Part 445 Subpart B which addresses the following effluent limitations that represent the application of the best practicable control technology currently available (BPT):

Regulated parameter	Maximum Daily	Maximum monthly avg.
BOD	140	37
TSS	88	27
Ammonia	10	4.9
a-Terpineol	0.033	0.016
Benzoic acid	0.12	0.071
p-Cresol	0.025	0.014
Phenol	0.026	0.015
Zinc	0.20	0.11
pH	Within the range 6 to 9	

It is noteworthy that secondary CBOD5 effluent standard of 25 mg/L set forth in state and federal regulations (i.e., 25 Pa Code §92a.47(a)(1) & 40 CFR 133.102(a)(4)(i)) will be placed in the draft permit as it is more stringent than the abovementioned BPT limit for BOD. In addition to these parameters, effluent limitations for the following parameters may also apply, subject to water quality analysis and BPJ where applicable.

Parameter	Limit (mg/l)	SBC	Federal Regulation	State Regulation
Oil and Grease	15	Average Monthly	-	Ch. 95.2(2)(ii)
	30	IMAX		
Dissolved Iron	7.0	IMAX	-	Ch. 95.2(4)
Total Residual Chlorine	0.5	Average Monthly	-	Ch. 92.48

This facility currently does not use chlorine for disinfection. The existing NPDES permit however contains a BAT TRC average monthly limit of 0.5 mg/L and IMAX of 1.6 mg/L. Past DMRs show non-detected levels at 0.5 mg/L, 0.4 mg/L and 0.2 mg/L. The application showed that TRC was not detected in all three samples at 0.2 mg/L. While all results were non-detected, the current state method detection limit for TRC is 0.02 mg/L. Therefore, it is still unclear if TRC is truly discharged at a non-detected level. It is the permittee's responsibility to demonstrate the presence of pollutants. The existing quarterly sampling requirement with the existing BAT limit remains unchanged.

Water Quality-Based Limitations

WQM 7.0 version 1.0b is a water quality model designed to assist DEP to determine appropriate permit requirements for CBOD5, NH3-N and DO. DEP's technical guidance no. 391-2000-007 describes the technical methods contained in the model for conducting wasteload allocation analyses and for determining recommended limits for point source discharges. Based on the output, existing limits are still protective of water quality and will remain unchanged in the draft permit.

DEP's TRC_CALC spreadsheet was used to determine if WQBELs are needed for TRC. The spreadsheet indicates that the existing BAT limit is still protective of water quality. The spreadsheet recommends IMAX of 1.6 mg/L.

DEP's Toxics Management spreadsheet was utilized to perform a reasonable potential analysis and develop water quality effluent limits for toxic pollutants. The analysis shows that all existing limits for toxic pollutants that are included in the permit are still protective of water quality, except for dissolved iron. The spreadsheet recommends a slightly-more stringent limits for dissolved iron. No water quality analysis was conducted for a-Terpinol, p-Cresol, and Benzoic Acid as there are no water quality criteria for toxic pollutants. The original sample results reported in the application showed non-detected pollutants, but the MDL was too high to generate uncertainty as to whether toxics are truly non-detected in the effluent. Additional sampling provided by the permittee re-demonstrated that those uncertain pollutants are non-detected at levels below the criteria. No new toxic pollutants of concern have been identified for this renewal.

Best Professional Judgment (BPJ) Limitations

Fecal Coliform TBEL limits were previously incorporated in the permit. The rationale was not documented in the previous fact sheet but facilities associated with municipal solid waste generally should control all conventional pollutants. Past DMR data show low bacteria levels; yet it is still present in effluent. Existing limits are still recommended per the federal anti-backsliding regulation set forth in 40 CFR §122.44(l)(1).

A minimum DO limit of 5.0 mg/L will remain unchanged in the draft permit to ensure the facility continues to meet the DO water quality criteria found in 25 Pa Code § 93.7(a).

Additional Considerations

Total Dissolved Solids (TDS)
For TDS and its associated constituents, the following DEP Central Office directive was considered:

For point source discharges and upon issuance or reissuance of an individual NPDES permit:

- *Where the concentration of TDS in the discharge exceeds 1,000 mg/L, or the net TDS load from a discharge exceeds 20,000 lbs/day, and the discharge flow exceeds 0.1 MGD, Part A of the permit should include monitor and report for TDS, sulfate, chloride, and bromide. Discharges of 0.1 MGD or less should monitor and report for TDS, sulfate, chloride, and bromide if the concentration of TDS in the discharge exceeds 5,000 mg/L.*

- *Where the concentration of bromide in a discharge exceeds 1 mg/L and the discharge flow exceeds 0.1 MGD, Part A of the permit should include monitor and report for bromide. Discharges of 0.1 MGD or less should monitor and report for bromide if the concentration of bromide in the discharge exceeds 10 mg/L.*

- *Where the concentration of 1,4-dioxane (CAS 123-91-1) in a discharge exceeds 10 µg/L and the discharge flow exceeds 0.1 MGD, Part A of the permit should include monitor and report for 1,4-dioxane. Discharges of 0.1 MGD or less should monitor and report for 1,4-dioxane if the concentration of 1,4-dioxane in the discharge exceeds 100 µg/L.*

The application shows an effluent TDS concentration level of 793 mg/L with a Bromide concentration level of 0.3 mg/L and a 1,4-dioxane level of 9.4 ug/L. Consequently, no monitoring is recommended.

Chesapeake Bay Tributary Requirement
This facility is currently considered a non-significant industrial wastewater facility, discharging less than 75 lbs/day Total Nitrogen (TN) or 25 lbs/day Total Phosphorus (TP). DEP's Phase II Watershed Implementation Plan (WIP) recommends monitoring of TN and TP on a monthly basis for discharges associated with food processing, paper processing, and residual waste management. Therefore, continuation of TN monitoring and TP effluent limit is still recommended.

Total Maximum Daily Load (TMDL) Consideration
A TMDL has not been developed yet although the 2012 PA Integrated Water Quality Report (formerly known as 303(d)/305(b) report) shows that the anticipated TMDL development was in 2011. Because it is still unknown as to when this TMDL will be developed, it is not recommended to delay the reissuance of the NPDES permit as some proposed permit requirements are more stringent than the existing requirements. The permit requirements proposed for this permit renewal have been developed to ensure that the facility does not significantly contribute to the impairment.

Mass Loading Effluent Limitations
Average monthly mass loading limitations will be included in the draft permit for toxic and some conventional/nonconventional pollutants. These limits are based on the formula: design flow x concentration limit x conversion factor of 8.34.

Anti-Degradation Requirement
The discharge is located within a non-special protection watershed; therefore, no High-Quality or Exceptional Value waters are impacted by this discharge. The effluent limits for this discharge have been developed to ensure that existing instream water uses and the level of water quality necessary to protect the existing uses are maintained and protected.

Class A Wild Trout Streams
No Class A Wild Trout Fishery is impacted by this discharge.

Stormwater Monitoring

DEP previously determined that stormwater permitting is unnecessary since the facility receives municipal garbage and a small amount of building demolition materials. The application indicated that there are no stormwater outfalls and Outfall 001 does not receive stormwater drained from landfills. Module 14 – No exposure certification for discharges of stormwater associated with industrial activities was submitted to DEP during the last permit renewal, indicating that within a total area of 42 acres, all industrial equipment, materials/residuals, products, or waste materials are not exposed to precipitation and will not be exposed to precipitation in the foreseeable future.

Proposed Effluent Limitations and Monitoring Requirements

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

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

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day)		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
Dissolved Oxygen	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
Total Residual Chlorine	XXX	XXX	XXX	0.5	XXX	1.6	1/quarter	Grab
CBOD5	2.1	4.1	XXX	25	50	60	2/month	24-Hr Composite
Total Suspended Solids	2.2	4.5	XXX	27	54	68	2/month	24-Hr Composite
Fecal Coliform (CFU/100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	XXX	1/month	Grab
Fecal Coliform (CFU/100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2,000 Geo Mean	XXX	XXX	1/month	Grab
Total Phosphorus	0.17	0.33	XXX	2.0	4.0	5.0	2/month	24-Hr Composite
Ammonia-Nitrogen	0.4	0.8	XXX	4.9	10	12	2/month	24-Hr Composite
Nitrate-Nitrite as N	Report	Report	XXX	Report	XXX	XXX	2/month	24-Hr Composite
Total Kjeldahl Nitrogen	Report	Report	XXX	Report	XXX	XXX	2/month	24-Hr Composite
Total Nitrogen	Report	Report	XXX	Report	XXX	XXX	2/month	Calculation
Total Arsenic	Report	Report	XXX	0.05	0.10	0.125	2/month	24-Hr Composite
Total Copper	Report	Report	XXX	0.05	0.10	0.125	2/month	24-Hr Composite
Dissolved Iron	0.23	0.35	XXX	2.7	4.2	6.8	2/month	24-Hr Composite

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		
Total Manganese	Report	Report	XXX	1.0	2.0	2.5	2/month	24-Hr Composite
Total Silver	Report	Report	XXX	0.01	0.02	0.025	2/month	24-Hr Composite
Total Zinc	Report	Report	XXX	0.11	0.20	0.275	2/month	24-Hr Composite
Phenol	Report	Report	XXX	0.015	0.026	0.0375	2/year	24-Hr Composite
a-Terpineol	Report	Report	XXX	0.016	0.033	0.04	2/year	24-Hr Composite
Benzoic Acid	Report	Report	XXX	0.071	0.12	0.178	2/year	24-Hr Composite
p-Cresol	Report	Report	XXX	0.014	0.025	0.035	2/year	24-Hr Composite

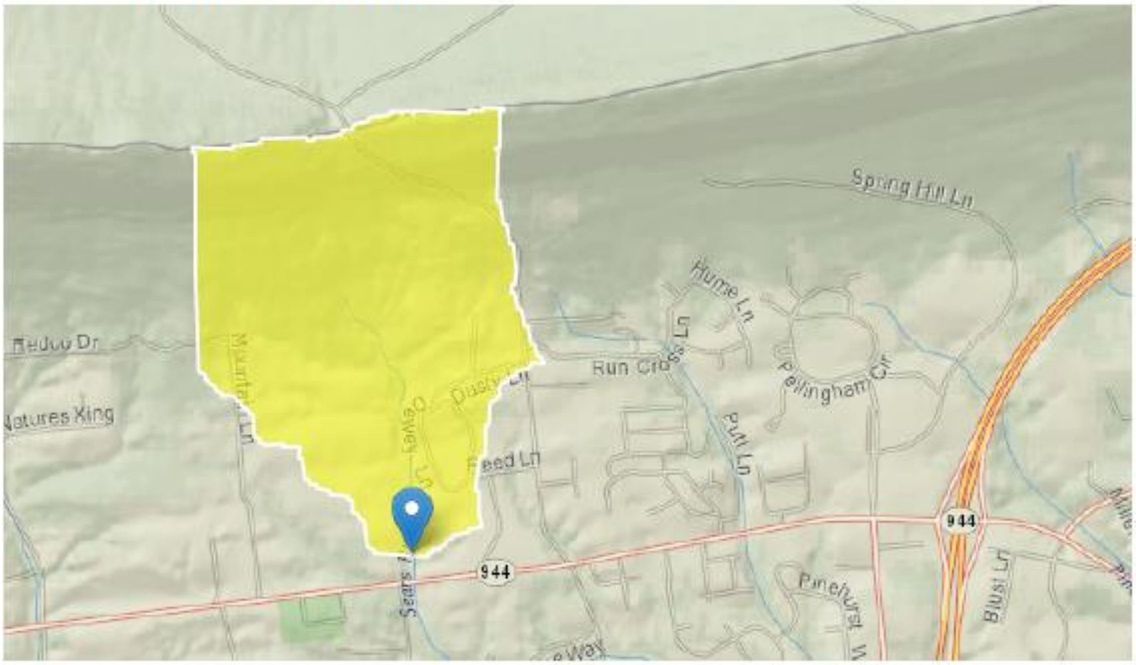
Tools and References Used to Develop Permit	
☐	WQM for Windows Model (see Attachment)
☐	PENTOXSD for Windows Model (see Attachment)
☐	TRC Model Spreadsheet (see Attachment)
☐	Temperature Model Spreadsheet (see Attachment)
☐	Toxics Screening Analysis Spreadsheet (see Attachment)
☐	Water Quality Toxics 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.
☐	SOP:
☐	Other:

Attachment

1. StreamStats

StreamStats Report

Region ID: PA
Workspace ID: PA20200915120758311000
Clicked Point (Latitude, Longitude): 40.28778, -77.01105
Time: 2020-09-15 08:08:20 -0400



Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	0.85	square miles
PRECIP	Mean Annual Precipitation	41	inches
STRDEN	Stream Density -- total length of streams divided by drainage area	0.9	miles per square mile
ROCKDEP	Depth to rock	3.6	feet
CARBON	Percentage of area of carbonate rock	25	percent

Low-Flow Statistics Parameters[Low Flow Region 2]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.85	square miles	4.93	1280
PRECIP	Mean Annual Precipitation	41	inches	35	50.4
STRDEN	Stream Density	0.9	miles per square mile	0.51	3.1
ROCKDEP	Depth to Rock	3.6	feet	3.32	5.65
CARBON	Percent Carbonate	25	percent	0	99

Low-Flow Statistics Disclaimers[Low Flow Region 2]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors

Low-Flow Statistics Flow Report[Low Flow Region 2]

Statistic	Value	Unit
7 Day 2 Year Low Flow	0.115	ft^3/s
30 Day 2 Year Low Flow	0.164	ft^3/s
7 Day 10 Year Low Flow	0.0389	ft^3/s
30 Day 10 Year Low Flow	0.0593	ft^3/s
90 Day 10 Year Low Flow	0.107	ft^3/s

Low-Flow Statistics Citations

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

2. WQM Model

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
07B	10210	SEARS RUN	4.130	431.00	0.85	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.147	0.00	0.00	0.000	0.000	0.0	0.00	0.00	25.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
Diller Landfill	PA0082953	0.0100	0.0100	0.0100	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/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	5.00	8.24	0.00	0.00
NH3-N	4.90	0.00	0.00	0.70

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Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
07B	10210	SEARS RUN	2.480	393.00	2.99	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.147	0.00	0.00	0.000	0.000	0.0	0.00	0.00	25.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
		0.0000	0.0000	0.0000	0.000	0.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	3.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

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Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
07B	10210	SEARS RUN	1.440	371.00	4.26	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.147	0.00	0.00	0.000	0.000	0.0	0.00	0.00	25.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
Hampden STP	PA0080314	5.6900	5.6900	5.6900	0.000	20.00	7.50

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	15.00	2.00	0.00	1.50
Dissolved Oxygen	5.00	8.24	0.00	0.00
NH3-N	1.60	0.00	0.00	0.70

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
07B	10210	SEARS RUN	0.000	333.00	5.01	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.147	0.00	0.00	0.000	0.000	0.0	0.00	0.00	25.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
		0.0000	0.0000	0.0000	0.000	0.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	3.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
07B	10210	SEARS RUN

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
4.130	0.010	25.000	7.000
Reach Width (ft)	Reach Depth (ft)	Reach WDRatio	Reach Velocity (fps)
5.220	0.375	13.914	0.072
Reach CBOD5 (mg/L)	Reach Kc (1/days)	Reach NH3-N (mg/L)	Reach Kn (1/days)
4.53	0.463	0.54	1.029
Reach DO (mg/L)	Reach Kr (1/days)	Kr Equation	Reach DO Goal (mg/L)
7.886	25.641	Owens	5
Reach Travel Time (days)			
1.406			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.141	4.18	0.47	7.54
0.281	3.85	0.40	7.54
0.422	3.55	0.35	7.54
0.562	3.27	0.30	7.54
0.703	3.01	0.26	7.54
0.844	2.77	0.23	7.54
0.984	2.56	0.20	7.54
1.125	2.36	0.17	7.54
1.266	2.17	0.15	7.54
1.406	2.00	0.13	7.54

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
2.480	0.010	25.000	7.000
Reach Width (ft)	Reach Depth (ft)	Reach WDRatio	Reach Velocity (fps)
9.715	0.449	21.634	0.104
Reach CBOD5 (mg/L)	Reach Kc (1/days)	Reach NH3-N (mg/L)	Reach Kn (1/days)
2.00	0.000	0.04	1.029
Reach DO (mg/L)	Reach Kr (1/days)	Kr Equation	Reach DO Goal (mg/L)
8.026	23.629	Owens	5
Reach Travel Time (days)			
0.609			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.061	2.00	0.04	7.54
0.122	2.00	0.03	7.54
0.183	2.00	0.03	7.54
0.244	2.00	0.03	7.54
0.305	2.00	0.03	7.54
0.366	2.00	0.03	7.54
0.427	2.00	0.03	7.54
0.488	2.00	0.02	7.54
0.548	2.00	0.02	7.54
0.609	2.00	0.02	7.54

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WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
07B	10210	SEARS RUN

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
1.440	5.700	20.340	7.440
Reach Width (ft)	Reach Depth (ft)	Reach WDRatio	Reach Velocity (fps)
25.381	0.693	36.632	0.537
Reach CBOD5 (mg/L)	Reach Kc (1/days)	Reach NH3-N (mg/L)	Reach Kn (1/days)
14.12	1.484	1.48	0.719
Reach DO (mg/L)	Reach Kr (1/days)	Kr Equation	Reach DO Goal (mg/L)
5.186	25.711	Tsivoglou	5
Reach Travel Time (days)			
0.164			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.016	13.77	1.47	6.05
0.033	13.44	1.45	6.62
0.049	13.11	1.43	7.01
0.066	12.79	1.42	7.28
0.082	12.48	1.40	7.46
0.098	12.17	1.38	7.59
0.115	11.88	1.37	7.69
0.131	11.59	1.35	7.76
0.147	11.30	1.33	7.82
0.164	11.03	1.32	7.86

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
07B	10210	SEARS RUN

RMI	Stream Flow (cfs)	PWS With (cfs)	Net Stream Flow (cfs)	Disc Analysis Flow (cfs)	Reach Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Reach Trav Time (days)	Analysis Temp (°C)	Analysis pH
Q7-10 Flow												
4.130	0.12	0.00	0.12	.0155	0.00436	.375	5.22	13.91	0.07	1.406	25.00	7.00
2.480	0.44	0.00	0.44	.0155	0.00401	.449	9.72	21.63	0.10	0.609	25.00	7.00
1.440	0.63	0.00	0.63	8.8179	0.00500	.693	25.38	36.63	0.54	0.164	20.34	7.44
Q1-10 Flow												
4.130	0.08	0.00	0.08	.0155	0.00436	NA	NA	NA	0.06	1.746	25.00	7.00
2.480	0.28	0.00	0.28	.0155	0.00401	NA	NA	NA	0.08	0.774	25.00	7.00
1.440	0.40	0.00	0.40	8.8179	0.00500	NA	NA	NA	0.53	0.166	20.23	7.46
Q30-10 Flow												
4.130	0.17	0.00	0.17	.0155	0.00436	NA	NA	NA	0.08	1.203	25.00	7.00
2.480	0.60	0.00	0.60	.0155	0.00401	NA	NA	NA	0.12	0.516	25.00	7.00
1.440	0.85	0.00	0.85	8.8179	0.00500	NA	NA	NA	0.54	0.162	20.45	7.42

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WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
07B	10210	SEARS RUN

NH3-N Acute Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
4.130	Diller Landfill	6.76	9.8	6.76	9.8	0	0
2.480		NA	NA	6.76	NA	NA	NA
1.440	Hampden STP	6.07	3.2	6.07	3.2	0	0

NH3-N Chronic Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
4.130	Diller Landfill	1.34	4.9	1.34	4.9	0	0
2.480		NA	NA	1.34	NA	NA	NA
1.440	Hampden STP	1.45	1.59	1.45	1.59	0	0

Dissolved Oxygen Allocations

RMI	Discharge Name	CBOD5		NH3-N		Dissolved Oxygen		Critical Reach	Percent Reduction
		Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)		
4.13	Diller Landfill	25	25	4.9	4.9	5	5	0	0
2.48		NA	NA	NA	NA	NA	NA	NA	NA
1.44	Hampden STP	15	15	1.59	1.59	5	5	0	0

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WQM 7.0 Modeling Specifications

Parameters	Both	Use Inputted Q1-10 and Q30-10 Flows	☐
WLA Method	EMPR	Use Inputted W/D Ratio	☐
Q1-10/Q7-10 Ratio	0.64	Use Inputted Reach Travel Times	☐
Q30-10/Q7-10 Ratio	1.36	Temperature Adjust Kr	☑
D.O. Saturation	90.00%	Use Balanced Technology	☑
D.O. Goal	5		

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
07B	10210	SEARS RUN

RMI	Name	Permit Number	Disc Flow (mgd)	Parameter	Effl. Limit 30-day Ave. (mg/L)	Effl. Limit Maximum (mg/L)	Effl. Limit Minimum (mg/L)
4.130	Diller Landfill	PA0082953	0.010	CBOD5	25		
				NH3-N	4.9	9.8	
				Dissolved Oxygen			5

RMI	Name	Permit Number	Disc Flow (mgd)	Parameter	Effl. Limit 30-day Ave. (mg/L)	Effl. Limit Maximum (mg/L)	Effl. Limit Minimum (mg/L)
1.440	Hampden STP	PA0080314	5.690	CBOD5	15		
				NH3-N	1.59	3.18	
				Dissolved Oxygen			5

3. TRC_CALC Spreadsheet

A	B	C	D	E	F	G
2	**TRC EVALUATION**					
3	Input appropriate values in B4:B8 and E4:E7					
4	0.1357	= Q stream (cfs)		0.5	= CV Daily	
5	0.01	= Q discharge (MGD)		0.5	= CV Hourly	
6	30	= no. samples		1	= AFC_Partial Mix Factor	
7	0.3	= Chlorine Demand of Strea		1	= CFC_Partial Mix Factor	
8	0	= Chlorine Demand of Disch		15	= AFC_Criteria Compliance Time (min)	
9	0.5	= BAT/BPJ Value		720	= CFC_Criteria Compliance Time (min)	
	0	= % Factor of Safety (FOS)			=Decay Coefficient (K)	
10	Source	Reference	AFC Calculations		Reference	CFC Calculations
11	TRC	1.3.2.iii	WLA afc = 2.817		1.3.2.iii	WLA cfc = 2.739
12	PENTOXSD TR(	5.1a	LTAMULT afc = 0.373		5.1c	LTAMULT cfc = 0.581
13	PENTOXSD TR(	5.1b	LTA_afc= 1.050		5.1d	LTA_cfc = 1.592
14						
15	Source		Effluent Limit Calculations			
16	PENTOXSD TR(	5.1f	AML MULT = 1.231			
17	PENTOXSD TR(	5.1g	AVG MON LIMIT (mg/l) = 0.500			BAT/BPJ
18			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)

(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)

4. Toxics Management Spreadsheet

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Toxics Management Spreadsheet
Version 1.0, July 2020

Discharge Information

Instructions | Discharge | Stream

Facility: **Diller Transfer Station** NPDES Permit No.: **PA0082953** Outfall No.: **001**

Evaluation Type: **Major Sewage / Industrial Waste** Wastewater Description: **IW Process Effluent with ELG**

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
0.01	340	8.3						

	Discharge Pollutant	Units		Max Discharge Conc	Trib Conc	Stream Conc	Daily CV	Hourly CV	Stream CV	Fate Coeff	FOS	Criteria Mod	Chem Transl
					0 if left blank		*0.5 if left blank*		*0 if left blank*			*1 if left blank*	
Group 1	Total Dissolved Solids (PWS)	mg/L		657									
	Chloride (PWS)	mg/L		125									
	Bromide	mg/L		0.6									
	Sulfate (PWS)	mg/L		27.4									
	Fluoride (PWS)	mg/L		0.1									
Group 2	Total Aluminum	µg/L		15.7									
	Total Antimony	µg/L	<	0.5									
	Total Arsenic	µg/L		50									
	Total Barium	µg/L		442									
	Total Beryllium	µg/L	<	0.5									
	Total Boron	µg/L		280									
	Total Cadmium	µg/L	<	0.1									
	Total Chromium (III)	µg/L		0.9									
	Hexavalent Chromium	µg/L	<	2									
	Total Cobalt	µg/L		1.7									
	Total Copper	µg/L		50									
	Free Available Cyanide	µg/L											
	Total Cyanide	µg/L		10									
	Dissolved Iron	µg/L		2800									
	Total Iron	µg/L		21									
	Total Lead	µg/L	<	0.2									
	Total Manganese	µg/L		1000									
	Total Mercury	µg/L	<	0.1									
	Total Nickel	µg/L		6.4									
	Total Phenols (Phenolics) (PWS)	µg/L		7									
	Total Selenium	µg/L	<	0.5									
	Total Silver	µg/L		10									
	Total Thallium	µg/L	<	0.1									
	Total Zinc	µg/L		110									
	Total Molybdenum	µg/L		1.1									
	Acrolein	µg/L	<	1									
	Acrylamide	µg/L	<	0.5									
	Acrylonitrile	µg/L	<	0.2									
	Benzene	µg/L	<	0.2									
	Bromoform	µg/L	<	0.2									

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Group 3	Carbon Tetrachloride	µg/L	<	0.2
	Chlorobenzene	µg/L	<	0.4
	Chlorodibromomethane	µg/L	<	0.2
	Chloroethane	µg/L	<	0.5
	2-Chloroethyl Vinyl Ether	µg/L	<	0.2
	Chloroform	µg/L	<	0.2
	Dichlorobromomethane	µg/L	<	0.2
	1,1-Dichloroethane	µg/L	<	0.2
	1,2-Dichloroethane	µg/L	<	0.2
	1,1-Dichloroethylene	µg/L	<	0.2
	1,2-Dichloropropane	µg/L	<	0.2
	1,3-Dichloropropylene	µg/L	<	0.2
	1,4-Dioxane	µg/L		9.4
	Ethylbenzene	µg/L	<	0.2
	Methyl Bromide	µg/L	<	0.5
	Methyl Chloride	µg/L	<	0.2
	Methylene Chloride	µg/L	<	0.4
	1,1,2,2-Tetrachloroethane	µg/L	<	0.2
	Tetrachloroethylene	µg/L	<	0.4
	Toluene	µg/L	<	0.2
	1,2-trans-Dichloroethylene	µg/L	<	0.5
	1,1,1-Trichloroethane	µg/L	<	0.2
	1,1,2-Trichloroethane	µg/L	<	0.5
	Trichloroethylene	µg/L	<	0.2
	Vinyl Chloride	µg/L	<	0.2
Group 4	2-Chlorophenol	µg/L	<	0.2
	2,4-Dichlorophenol	µg/L	<	0.2
	2,4-Dimethylphenol	µg/L	<	0.2
	4,6-Dinitro-o-Cresol	µg/L	<	1
	2,4-Dinitrophenol	µg/L	<	1
	2-Nitrophenol	µg/L	<	0.5
	4-Nitrophenol	µg/L	<	0.5
	p-Chloro-m-Cresol	µg/L	<	0.5
	Pentachlorophenol	µg/L	<	0.5
	Phenol	µg/L		0.3
	2,4,6-Trichlorophenol	µg/L	<	0.2
Group 5	Acenaphthene	µg/L	<	0.1
	Acenaphthylene	µg/L	<	0.1
	Anthracene	µg/L	<	5000
	Benzidine	µg/L	<	0.1
	Benzo(a)Anthracene	µg/L	<	0.2
	Benzo(a)Pyrene	µg/L	<	0.1
	3,4-Benzofluoranthene	µg/L	<	0.1
	Benzo(ghi)Perylene	µg/L	<	0.1
	Benzo(k)Fluoranthene	µg/L	<	0.1
	Bis(2-Chloroethoxy)Methane	µg/L	<	0.1
	Bis(2-Chloroethyl)Ether	µg/L	<	0.1
	Bis(2-Chloroisopropyl)Ether	µg/L	<	0.1
	Bis(2-Ethylhexyl)Phthalate	µg/L	<	1
	4-Bromophenyl Phenyl Ether	µg/L	<	0.1
	Butyl Benzyl Phthalate	µg/L	<	1
	2-Chloronaphthalene	µg/L	<	0.1
	4-Chlorophenyl Phenyl Ether	µg/L	<	0.1
	Chrysene	µg/L	<	0.1
	Dibenzo(a,h)Anthrancene	µg/L	<	0.1
	1,2-Dichlorobenzene	µg/L	<	0.1
	1,3-Dichlorobenzene	µg/L	<	0.1
	1,4-Dichlorobenzene	µg/L	<	0.1
	3,3-Dichlorobenzidine	µg/L	<	0.2
	Diethyl Phthalate	µg/L	<	1
	Dimethyl Phthalate	µg/L	<	1
	Di-n-Butyl Phthalate	µg/L	<	1
	2,4-Dinitrotoluene	µg/L	<	0.2

	2,6-Dinitrotoluene	µg/L	<	0.2									
	Di-n-Octyl Phthalate	µg/L	<	1									
	1,2-Diphenylhydrazine	µg/L	<	0.1									
	Fluoranthene	µg/L	<	0.1									
	Fluorene	µg/L	<	0.1									
	Hexachlorobenzene	µg/L	<	0.1									
	Hexachlorobutadiene	µg/L	<	0.1									
	Hexachlorocyclopentadiene	µg/L	<	0.5									
	Hexachloroethane	µg/L	<	0.1									
	Indeno(1,2,3-cd)Pyrene	µg/L	<	0.1									
	Isophorone	µg/L	<	0.2									
	Naphthalene	µg/L	<	0.1									
	Nitrobenzene	µg/L	<	0.1									
	n-Nitrosodimethylamine	µg/L	<	0.1									
	n-Nitrosodi-n-Propylamine	µg/L	<	0.1									
	n-Nitrosodiphenylamine	µg/L	<	0.1									
	Phenanthrene	µg/L	<	0.1									
	Pyrene	µg/L	<	0.1									
	1,2,4-Trichlorobenzene	µg/L	<	0.1									
Group 6	Aldrin	µg/L	<	0.002									
	alpha-BHC	µg/L	<	0.002									
	beta-BHC	µg/L	<	0.05									
	gamma-BHC	µg/L	<	0.05									
	delta BHC	µg/L	<	0.1									
	Chlordane	µg/L	<	0.1									
	4,4-DDT	µg/L	<	0.05									
	4,4-DDE	µg/L	<	0.05									
	4,4-DDD	µg/L	<	0.002									
	Dieldrin	µg/L	<	0.05									
	alpha-Endosulfan	µg/L	<	0.05									
	beta-Endosulfan	µg/L	<	0.05									
	Endosulfan Sulfate	µg/L	<	0.05									
	Endrin	µg/L	<	0.05									
	Endrin Aldehyde	µg/L	<	0.1									
	Heptachlor	µg/L	<	0.05									
	Heptachlor Epoxide	µg/L	<	0.05									
	PCB-1016	µg/L	<	1									
	PCB-1221	µg/L	<	1									
	PCB-1232	µg/L	<	1									
	PCB-1242	µg/L	<	1									
	PCB-1248	µg/L	<	1									
	PCB-1254	µg/L	<	1									
	PCB-1260	µg/L	<	1									
	PCBs, Total	µg/L	<	1									
	Toxaphene	µg/L	<	0.1									
	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											

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Toxics Management Spreadsheet
Version 1.0, July 2020

Stream / Surface Water Information

Diller Transfer Station, NPDES Permit No. PA0082953, Outfall 001

Instructions | Discharge | *Stream*

Receiving Surface Water Name: **Sears Run**

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	010210	4.13	431	0.85			Yes
End of Reach 1	010210	2.48	393	2.99			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	4.13	0.147										100	7		
End of Reach 1	2.48	0.147													

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	4.13														
End of Reach 1	2.48														

Stream / Surface Water Information 2/24/2021 Page 4

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Toxics Management Spreadsheet
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Model Results

Diller Transfer Station, NPDES Permit No. PA0082953, Outfall 001

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

☐ ***Hydrodynamics***

☐ ***Wasteload Allocations***

☑ ***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	Units	Governing WQBEL	WQBEL Basis	Comments
Chloride (PWS)	Report	Report	Report	Report	Report	mg/L	N/A	N/A	Discharge Conc > 10% WQBEL (no RP)
Sulfate (PWS)	Report	Report	Report	Report	Report	mg/L	N/A	N/A	Discharge Conc > 10% WQBEL (no RP)
Total Arsenic	0.008	0.012	90.8	142	227	µg/L	90.8	THH	Discharge Conc ≥ 50% WQBEL (RP)
Total Copper	Report	Report	Report	Report	Report	µg/L	102	AFC	Discharge Conc > 10% WQBEL (no RP)
Dissolved Iron	0.23	0.35	2,723	4,248	6,808	µg/L	2,723	THH	Discharge Conc ≥ 50% WQBEL (RP)
Total Manganese	Report	Report	Report	Report	Report	µg/L	9,077	THH	Discharge Conc > 10% WQBEL (no RP)
Total Silver	Report	Report	Report	Report	Report	µg/L	33.0	AFC	Discharge Conc > 10% WQBEL (no RP)
Total Zinc	Report	Report	Report	Report	Report	µg/L	850	AFC	Discharge Conc > 10% WQBEL (no RP)

☐ ***Other Pollutants without Limits or Monitoring***