pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southcentral Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0020320**
Facility Type	**Municipal**	APS ID	**276463**
Major / Minor	**Major**	Authorization ID	**1422705**

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Lititz Borough Authority**	Facility Name	**Lititz Sewer Authority WWTP**
Applicant Address	50 Lititz Run Road	Facility Address	50 Lititz Run Road
	Lititz, PA 17543-8503		Lititz, PA 17543-8503
Applicant Contact	Edward Browne	Facility Contact	Zachary Pennepacker
Applicant Phone	(717) 371-9878	Facility Phone	(717) 626-2172
Client ID	85795	Site ID	250921
Ch 94 Load Status	Not Overloaded	Municipality	Lititz Borough
Connection Status	No Limitations	County	Lancaster
Date Application Received	December 29, 2022	EPA Waived?	No
Date Application Accepted	January 13, 2023	If No, Reason	Major Facility, Significant CB Discharge

Purpose of Application: NPDES Renewal.

Summary of Review

Lititz Borough Authority has applied to the Pennsylvania Department of Environmental Protection (DEP) for reissuance of its National Pollutant Discharge Elimination System (NPDES) permit. The permit was issued June 15, 2018 and became effective on July 1, 2018, authorizing discharge of treated sewage from the existing wastewater treatment plant (WWTP) located in Lititz Borough, Lancaster County into Lititz Run. A major amendment to the NPDES permit was issued on July 19, 2019 to document the addition of chlorine residual to their effluent. The existing permit expiration date was June 30,2023, and the permit has been administratively extended since that time.

Changes in this renewal: Net TN and Net TP monthly reporting requirements have been removed from the permit. Total Selenium and Total Zinc monitoring requirements have been added to the permit. TDS, Sulfate, Chloride, and Bromide monitoring requirements have been removed from the permit. E. Coli monitoring has been added to the permit.

Sludge use and disposal description and location(s): Class B and A biosolids are land applied.

Supplemental information for this facility is provided at the end of this fact sheet.

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*

Approve	Deny	Signatures	Date
X		Benjamin R. Lockwood Benjamin R. Lockwood / Environmental Engineering Specialist	December 6, 2023
		Daniel W. Martin, P.E. / Environmental Engineer Manager	

Summary of Review
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)	3.85
Latitude	40º 9' 6"	Longitude	76º 17' 6"
Quad Name		Quad Code	
Wastewater Description:	Sewage Effluent		
Receiving Waters	Lititz Run (CWF (existing use))	Stream Code	7646
NHD Com ID	57462493	RMI	4.6
Drainage Area	12.6 mi^2	Yield (cfs/mi^2)	0.12
Q_{7-10} Flow (cfs)	1.51	Q_{7-10} Basis	USGS Gage #01576500
Elevation (ft)	349	Slope (ft/ft)	
Watershed No.	7-J	Chapter 93 Class.	WWF, MF
Existing Use	CWF(COLD WATER FISHES)	Existing Use Qualifier	Use Attainability Analysis
Exceptions to Use	None	Exceptions to Criteria	None
Assessment Status	Impaired		
Cause(s) of Impairment	Total Suspended Solids, Pathogens		
Source(s) of Impairment	Urban Runoff/Storm Sewers, Source Unknown		
TMDL Status	Final	Name	Lititz Run
Nearest Downstream Public Water Supply Intake	Lancaster City Water Bureau		
PWS Waters	Conestoga River	Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	11

Changes Since Last Permit Issuance: A drainage area of 12.6 mi^2 and a Q_{7-10} flow of 1.51 cubic feet per second (cfs) were determined by establishing a correlation to the yield of USGS Gage Station #01576500 on the Conestoga River. The Q_{7-10} and drainage area at the gage are 38.6 cfs and 324 mi^2, respectively. These values are taken from the USGS document "Selected Streamflow Statistics for Streamgage Locations in and near Pennsylvania". The Q_{7-10} runoff rate at the gage station was calculated as follows:

Yield = (38.6 cfs)/ 324 mi^2 = 0.12 cfs/mi^2

The drainage area at the discharge point, taken from USGS PA StreamStats = 12.6 mi^2

The Q_{7-10} at the discharge point = 12.6 mi^2 x 0.12 cfs/mi^2 = 1.51 cfs

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

Discharge, Receiving Waters and Water Supply Information

Outfall No.	002	Design Flow (MGD)	Variable (stormwater)
Latitude	40º 9' 5"	Longitude	76º 17' 4"
Quad Name		Quad Code	
Wastewater Description:	Stormwater		
Receiving Waters	Lititz Run (CWF (existing use))	Stream Code	7646
NHD Com ID	57462493	RMI	1.3000
Drainage Area	12.6 mi^2	Yield (cfs/mi^2)	0.12
Q_{7-10} Flow (cfs)	1.51	Q_{7-10} Basis	USGS Gage #01576500
Elevation (ft)	349	Slope (ft/ft)	
Watershed No.	7-J	Chapter 93 Class.	WWF, MF
Existing Use	CWF(COLD WATER FISHES)	Existing Use Qualifier	Use Attainability Analysis
Exceptions to Use	None	Exceptions to Criteria	None
Assessment Status	Impaired		
Cause(s) of Impairment	Total Suspended Solids, Pathogens		
Source(s) of Impairment	Urban Runoff/Storm Sewers, Source Unknown		
TMDL Status	Final	Name	Lititz Run
Nearest Downstream Public Water Supply Intake	Lancaster City Water Bureau		
PWS Waters	Conestoga River	Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	11

Changes Since Last Permit Issuance: None

Other Comments: None

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

Discharge, Receiving Waters and Water Supply Information

Outfall No.	003	Design Flow (MGD)	Variable (stormwater)
Latitude	40º 9' 7"	Longitude	76º 17' 7"
Quad Name		Quad Code	
Wastewater Description:	Stormwater		
Receiving Waters	Lititz Run (CWF (existing use))	Stream Code	7646
NHD Com ID	57462493	RMI	1.3300
Drainage Area	12.6 mi^2	Yield (cfs/mi^2)	0.12
Q_{7-10} Flow (cfs)	1.51	Q_{7-10} Basis	USGS Gage #01576500
Elevation (ft)	349	Slope (ft/ft)	
Watershed No.	7-J	Chapter 93 Class.	WWF, MF
Existing Use	CWF(COLD WATER FISHES)	Existing Use Qualifier	Use Attainability Analysis
Exceptions to Use	None	Exceptions to Criteria	None
Assessment Status	Impaired		
Cause(s) of Impairment	Total Suspended Solids, Pathogens		
Source(s) of Impairment	Urban Runoff/Storm Sewers, Source Unknown		
TMDL Status	Final	Name	Lititz Run
Nearest Downstream Public Water Supply Intake	Lancaster City Water Bureau		
PWS Waters	Conestoga River	Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	11

Changes Since Last Permit Issuance: None

Other Comments: None

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

Treatment Facility Summary				
Waste Type	**Degree of Treatment**	**Process Type**	**Disinfection**	**Avg Annual Flow (MGD)**
Sewage	Secondary With Total Nitrogen Reduction	Activated Sludge	Ultraviolet	3.85
Hydraulic Capacity (MGD)	**Organic Capacity (lbs/day)**	**Load Status**	**Biosolids Treatment**	**Biosolids Use/Disposal**
4.81	12840	Not Overloaded	Aerobic Digestion	Land Application

Changes Since Last Permit Issuance: None

Other Comments: The treatment process is as follows: Fine screen and grit removal – anaerobic, anoxic, and aerobic zones in a 5 stage BNR activated sludge process with sidestream phosphorus removal- final clarification – disc filtration – UV disinfection – Outfall 001 to Lititz Run

Compliance History	
Summary of DMRs:	A summary of the past 12-month DMR effluent data is presented on the next page of this fact sheet.
Summary of Inspections:	8/21/2018: A routine inspection was conducted. Field samples were collected and were within permitted limits. No issues were noted at the WWTP. 4/23/2019: A routine inspection was conducted. Field samples were collected and were within permitted limits. No issues were noted at the WWTP. The stormwater outfalls were located and inspected and no concerns were noted. 7/29/2019: An incident inspection was conducted. A sanitary sewer overflow was reported on 7/26 at Twinbrook MHP near 121 Weidler Lane, Lititz. A repair was made approximately 3 hours later. At the time of inspection, a 15' x 25' grassy area had a layer of hydrated lime. A stormwater swale approximately 25' downgradient was inspected, and the water was clear. No odor or debris were visible. 6/16/2020: An administrative inspection was conducted. On 6/13 Lititz reported a sludge release to DEP's emergency response. Release occurred during sludge transfer when an unsecured hose became dislodged and began discharging to the ground. Approximately 1,500 gallons were discharged. The area was cleaned and hydrated lime was applied. No solids were visible within the stream. 7/6/2020: An administrative inspection was conducted. On 7/6 Lititz provided notice that the blowers for the aeration basin faulted. The SCADA system did not call out the failure. New alarm triggers were coded and tested for the blowers. 8/4/2020: An administrative inspection was conducted. Lititz provided email notification that one of the three tertiary filters went into a partial bypass, due to high flows as a result of heavy rainfall. 6/2/2021: A routine inspection was conducted. Field samples were collected and were within permitted limits. The stormwater outfalls were inspected, and no concerns were noted.

Other Comments: There are currently no open violations associated with the permittee or the facility.

Compliance History

DMR Data for Outfall 001 (from September 1, 2022 to August 31, 2023)

Parameter	AUG-23	JUL-23	JUN-23	MAY-23	APR-23	MAR-23	FEB-23	JAN-23	DEC-22	NOV-22	OCT-22	SEP-22
Flow (MGD) Average Monthly	2.348	2.542	2.331	2.454	2.569	2.800	2.684	2.917	2.858	2.484	2.464	2300
Flow (MGD) Daily Maximum	2.500	3.648	2.798	2.818	2.999	3.246	3.013	3.427	3.844	2.941	3.070	2.873
pH (S.U.) Instantaneous Minimum	7.4	7.4	7.5	7.3	7.4	7.4	7.4	7.4	7.4	7.6	7.6	7.6
pH (S.U.) Instantaneous Maximum	7.9	7.7	7.8	7.8	7.8	7.8	7.7	7.7	7.8	7.7	7.8	7.9
DO (mg/L) Instantaneous Minimum	8.3	8.3	7.5	7.9	7.5	8.6	8.1	8.5	8.2	8.0	7.8	7.4
TRC (mg/L) Average Monthly	0.01	0.01	0.01	0.01	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01
TRC (mg/L) Instantaneous Maximum	0.03	0.03	0.05	0.04	0.05	0.04	0.03	0.02	0.04	0.05	0.03	0.05
CBOD5 (lbs/day) Average Monthly	67	66	< 46	< 53	71	< 70	< 63	< 73	< 77	< 76	< 61	< 58
CBOD5 (lbs/day) Weekly Average	77	81	< 48	62	79	79	71	97	112	103	65	76
CBOD5 (mg/L) Average Monthly	3.4	3.0	< 2.4	< 2.6	3.4	< 3.0	< 2.8	< 3.1	< 3.5	< 3.7	< 3.0	< 2.9
CBOD5 (mg/L) Weekly Average	4.0	3.0	2.7	3.1	3.8	3.6	3.1	4.2	5.3	4.8	3.3	4.2
BOD5 (lbs/day) Raw Sewage Influent Average Monthly	4967	5614	4583	5322	5782	5628	5905	5768	5329	6459	6561	6154
BOD5 (lbs/day) Raw Sewage Influent Daily Maximum	6344	7428	5715	9120	8015	9364	8185	6973	6766	9349	8966	8068
BOD5 (mg/L) Raw Sewage Influent Average Monthly	253	262	236	258	274	246	263	242	235	312	318	308

TSS (lbs/day) Average Monthly	101	< 76	< 85	< 63	92	< 125	< 101	129	< 150	< 96	130	< 64
TSS (lbs/day) Raw Sewage Influent Average Monthly	3764	4399	4397	4425	6043	5013	5040	4678	4732	3811	4110	4265
TSS (lbs/day) Raw Sewage Influent Daily Maximum	4916	4930	5662	6627	7673	6072	7632	5778	5792	4657	5788	5434
TSS (lbs/day) Weekly Average	141	110	125	95	133	206	144	186	178	141	192	149
TSS (mg/L) Average Monthly	5.1	< 3.4	< 4.3	< 3.1	4.4	< 5.6	< 4.5	5.4	< 6.7	< 4.7	6.2	< 3.0
TSS (mg/L) Raw Sewage Influent Average Monthly	192	204	227	216	287	220	225	197	210	184	198	214
TSS (mg/L) Weekly Average	7.0	5.5	6.0	5.0	6.5	9.5	6.5	8.0	8.3	6.5	8.5	6.5
Total Dissolved Solids (lbs/day) Average Monthly	23371	23995	22546	21885	23010	23194	24474	23258	22898	21949	23387	24195
Total Dissolved Solids (mg/L) Average Monthly	1189	1107	1163	1074	1089	1016	1088	977	1013	1061	1129	1216
Total Dissolved Solids (mg/L) Daily Maximum	1280	1160	1280	1180	1140	1100	1270	1060	1150	1150	1230	1290
Fecal Coliform (No./100 ml) Geometric Mean	< 6	< 5	< 3	< 3	< 3	< 3	< 2	< 4	< 3	< 9	< 3	< 3
Fecal Coliform (No./100 ml) Instantaneous Maximum	20	10	5	31	8	10	3	11	8	6500	8	7
UV Intensity (mW/cm²) Instantaneous Minimum	0.02	0.02	0.00	0.18	0.00	0.51	0.71	1.10	1.27	0.00	1.26	1.12
Nitrate-Nitrite (mg/L) Average Monthly	1.82	1.85	2.33	1.92	2.45	2.38	1.02	1.14	1.41	1.52	1.83	1.08
Nitrate-Nitrite (lbs) Total Monthly	1113	1265	1351	1217	1549	1714	651	836	993	953	1169	639
Total Nitrogen (mg/L) Average Monthly	2.85	2.86	3.40	< 3.11	3.93	4.18	4.48	< 2.60	3.14	3.30	< 3.17	2.24

Total Nitrogen (lbs) Effluent Net Total Monthly	1739	1941	1976	< 1969	2488	2988	2851	< 1922	2253	2065	< 2031	1339
Total Nitrogen (lbs) Total Monthly	1739	1941	1976	< 1969	2488	2988	2851	< 1922	2253	2065	< 2031	1339
Total Nitrogen (lbs) Effluent Net Total Annual												< 46632
Total Nitrogen (lbs) Total Annual												< 32533
Ammonia (lbs/day) Average Monthly	1	2	< 2	< 1	2	11	47	12	< 15	< 2	3	3
Ammonia (mg/L) Average Monthly	0.1	0.1	< 0.1	< 0.1	0.1	0.5	2.1	0.5	< 0.6	< 0.1	0.1	0.2
Ammonia (lbs) Total Monthly	34	61	< 54	< 38	68	333	1313	363	< 459	< 52	86	91
Ammonia (lbs) Total Annual												< 1082
TKN (mg/L) Average Monthly	1.0	1.0	1.1	< 1.2	1.5	1.8	3.5	< 1.5	1.7	1.8	< 1.3	1.2
TKN (lbs) Total Monthly	626	676	625	752	940	1275	2201	1086	1260	1112	862	700
Total Phosphorus (lbs/day) Average Monthly	9	24	12	4	5	4	4	4	5	5	6	4
Total Phosphorus (mg/L) Average Monthly	0.5	1.0	0.6	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.2
Total Phosphorus (lbs) Effluent Net Total Monthly	293	742	363	128	141	130	112	128	148	161	182	117
Total Phosphorus (lbs) Total Monthly	293	742	363	128	141	130	112	128	148	161	182	117
Total Phosphorus (lbs) Effluent Net Total Annual												6074
Total Phosphorus (lbs) Total Annual												4086
Sulfate (lbs/day) Average Monthly	888	950	895	921	952	984	993	1022	971	911	897	891
Sulfate (mg/L) Average Monthly	45	44	46	45	45	43	44	43	43	44	43	45
Sulfate (mg/L) Daily Maximum	47	47	49	47	48	45	50	46	46	47	46	49

Chloride (lbs/day) Average Monthly	9701	9654	9387	8748	8958	8888	9582	8918	8952	9425	9441	10700
Chloride (mg/L) Average Monthly	493	446	484	430	424	389	426	375	399	456	456	537
Chloride (mg/L) Daily Maximum	546	495	564	497	454	425	542	402	505	494	504	575
Bromide (lbs/day) Average Monthly	< 20	< 22	< 19	< 23	< 21	< 23	< 23	< 24	< 23	< 21	< 21	< 22
Bromide (mg/L) Average Monthly	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Bromide (mg/L) Daily Maximum	< 1	< 1	< 1	2	1	< 1	< 1	< 1	1	< 1	< 1	2
Chronic WET - Ceriodaphnia Reproduction (TUc) Daily Maximum			GG			1.0			GG			GG

Existing Effluent Limitations and Monitoring Requirements

The tables below summarize the effluent limits and monitoring requirements implemented in the existing NPDES permit.

Outfall 001

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day)		Concentrations (mg/L)				Minimum Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	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
TRC	XXX	XXX	XXX	0.04	XXX	0.14	1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) Nov 1 - Apr 30	480	720	XXX	15.0	22.5	30	2/week	24-Hr Composite
Carbonaceous Biochemical Oxygen Demand (CBOD5) May 1 - Oct 31	320	480	XXX	10.0	15.0	20	2/week	24-Hr Composite
Biochemical Oxygen Demand (BOD5) Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Total Suspended Solids	960	1445	XXX	30.0	45.0	60	2/week	24-Hr Composite
Total Suspended Solids Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Total Dissolved Solids	Report	XXX	XXX	Report	Report Daily Max	XXX	2/week	24-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/week	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/week	Grab
Ultraviolet light intensity (mW/cm^2)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Recorded
Ammonia-Nitrogen Nov 1 - Apr 30	145	XXX	XXX	4.5	XXX	9	2/week	24-Hr Composite

The tables below summarize the effluent limits and monitoring requirements implemented in the existing NPDES permit.

Outfall 001

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day)		Concentrations (mg/L)				Minimum Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Ammonia-Nitrogen May 1 - Oct 31	48	XXX	XXX	1.5	XXX	3	2/week	24-Hr Composite
Total Phosphorus	64	XXX	XXX	2.0	XXX	4	2/week	24-Hr Composite
Sulfate, Total	Report	XXX	XXX	Report	Report Daily Max	XXX	2/week	24-Hr Composite
Chloride	Report	XXX	XXX	Report	Report Daily Max	XXX	2/week	24-Hr Composite
Bromide	Report	XXX	XXX	Report	Report Daily Max	XXX	2/week	24-Hr Composite
Toxicity, Chronic - Ceriodaphnia Reproduction (TUc)	XXX	XXX	XXX	1.3 Daily Max	XXX	XXX	See Permit	24-Hr Composite

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s):

at Discharge from facility

Outfall 001

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs)		Concentrations (mg/L)				Minimum Measurement Frequency	Required Sample Type
	Monthly	Annual	Monthly	Monthly Average	Maximum	Instant. Maximum		
Ammonia--N	Report	Report	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Kjeldahl--N	Report	XXX	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Nitrate-Nitrite as N	Report	XXX	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Total Nitrogen	Report	Report	XXX	Report	XXX	XXX	1/month	Calculation
Total Phosphorus	Report	Report	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Net Total Nitrogen	Report	70319	XXX	XXX	XXX	XXX	1/month	Calculation
Net Total Phosphorus	Report	9376	XXX	XXX	XXX	XXX	1/month	Calculation

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s):

at Discharge from facility

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 3.85
Latitude 40º 9' 6" **Longitude** 76º 17' 6"
Wastewater Description: Sewage Effluent

Technology-Based Limitations

The following technology-based limitations apply, subject to water quality analysis and BPJ where applicable:

Pollutant	Limit (mg/l)	SBC	Federal Regulation	State Regulation
$CBOD_5$	25	Average Monthly	133.102(a)(4)(i)	92a.47(a)(1)
	40	Average Weekly	133.102(a)(4)(ii)	92a.47(a)(2)
Total Suspended Solids	30	Average Monthly	133.102(b)(1)	92a.47(a)(1)
	45	Average Weekly	133.102(b)(2)	92a.47(a)(2)
pH	6.0 – 9.0 S.U.	Min – Max	133.102(c)	95.2(1)
Fecal Coliform (5/1 – 9/30)	200 / 100 ml	Geo Mean	-	92a.47(a)(4)
Fecal Coliform (5/1 – 9/30)	1,000 / 100 ml	IMAX	-	92a.47(a)(4)
Fecal Coliform (10/1 – 4/30)	2,000 / 100 ml	Geo Mean	-	92a.47(a)(5)
Fecal Coliform (10/1 – 4/30)	10,000 / 100 ml	IMAX	-	92a.47(a)(5)
Total Residual Chlorine	0.5	Average Monthly	-	92a.48(b)(2)

Water Quality-Based Limitations

$CBOD_5$, NH_3-N

Pursuant to 40 CFR § 122.44(d)(1)(i), more stringent requirements should be considered when pollutants are discharged at the levels which have the reasonable potential to cause or contribute to excursions above water quality standards.

WQM 7.0 ver. 1.1b is a water quality model designed to assist DEP in determining appropriate water quality based effluent limits (WQBELs) for carbonaceous biochemical oxygen demand ($CBOD_5$), ammonia (NH_3-N) and dissolved oxygen (D.O.). DEP's Technical Guidance No. 391-2000-007 provides the technical methods contained in WQM 7.0 for determining wasteload allocations and for determining recommended NPDES effluent limits for point source discharges. The model was utilized for this permit renewal. The model output indicated a $CBOD_5$ average monthly limit of 12.96 mg/l, an NH_3-N average monthly limit of 1.65 mg/l, and a D.O. minimum limit of 5.0 mg/l were protective of water quality. The flow data used to run the model was acquired from USGS PA StreamStats,and USGS Gage #01576500 and is included as an attachment. The existing $CBOD_5$ limit of 10.0 mg/l and NH_3-N limit of 1.5 mg/l are more stringent, and will remain in the renewal permit.

Toxics

Effluent sample results for toxic pollutants reported on the renewal application were entered into DEP's Toxics Management Spreadsheet Version 1.4 to develop appropriate permit requirements for toxic pollutants of concern. The Toxics Management Spreadsheet combines the functions of PENTOXSD and DEP's Toxics Screening Analysis. Stream pH and hardness inputs were based on data in the NPDES application.

This data was analyzed based on the guidelines found in DEP's Water Quality Toxics Management Strategy (Document No. 361-0100-003), DEP's SOP No. BCW-PMT-033 and BCW-PMT-037. The results are attached to this fact sheet. The Toxics Management Spreadsheet uses the following logic:

a. Establish average monthly and instantaneous maximum (IMAX) limits in the draft permit where the maximum reported concentration exceeds 50% of the WQBEL.
b. For non-conservative pollutants, establish monitoring requirements where the maximum reported concentration is between 25% - 50% of the WQBEL.

c. For conservative pollutants, establish monitoring requirements where the maximum reported concentration is between 10%-50% of the WQBEL.

Based on the effluent sampling reported for Lititz Borough Authority, monitoring requirements will be necessary for Total Selenium and Total Zinc. These monitoring requirements will be added to the permit with a monitoring frequency of 1/month, and will be sampled using a 24-Hr Composite.

Best Professional Judgement (BPJ) Limitations

Dissolved Oxygen
A minimum D.O. limit of 5.0 mg/L is a D.O. water quality criterion found in 25 Pa. Code § 93.7(a). This limit is included in the existing NPDES permit based BPJ. It is still recommended to include this limit in the draft permit to ensure that the facility continues to achieve compliance with DEP water quality standards.

Total Phosphorus
For Total Phosphorus (TP), the current NPDES permit requires the permittee to comply with average monthly and IMAX limits of 2.0 mg/L and 4.0 mg/L, respectively. Previously, DEP's Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams (Guidance No. 391-2000-018) was used to evaluate if phosphorus limitations were necessary. According to the guidance, phosphorus limits would be needed if contributions from this facility exceeded 0.25% of the total phosphorus load of all discharges in the Lower Susquehanna River Basin. The calculated 196 lbs/day was 5.1% of the loading after delivery rations to the lower Susquehanna River were applied; therefore, a TP limit of 2.0 mg/l was included in the permit. The existing TP limit of 2.0 mg/l will remain unchanged in the permit to protect the Lower Susquehanna River.

Additional Considerations

Chesapeake Bay Total Maximum Daily Load (TMDL)

DEP developed a strategy to comply with the EPA and Chesapeake Bay Foundation requirements by reducing point source loadings of Total Nitrogen (TN) and Total Phosphorus (TP). This strategy can be located in the Pennsylvania Chesapeake Watershed Implementation Plan (WIP), dated January 11, 2011. Subsequently, an update to the WIP was published as the Phase 2 WIP. As part of the Phase 2 WIP, a *Phase 2 Watershed Implementation Plan Wastewater Supplement* (Phase 2 Supplement) was developed, providing an update on TMDL implementation for point sources and DEP's current implementation strategy for wastewater. A new update to the WIP was published as the Phase 3 WIP in August 2019. As part of the Phase 3 WIP, a *Phase 3 Watershed Implementation Plan Wastewater Supplement* (Phase 3 Supplement) was developed, and was most recently revised on July 29, 2022, and is the basis for the development of any Chesapeake Bay related permit parameters. Sewage discharges have been prioritized based on their design flow to the Bay. The highest priority (Phases 1, 2, and 3) dischargers will receive annual Cap Loads based on their design flow on August 29, 2005 and concentrations of 6 mg/l TN and 0.8 mg/l TP. These limits may be achieved through a combination of treatment technology, credits, or offsets. For Phase 4 and 5 facilities, Cap Loads are not currently being implemented for renewed or amended permits for facilities that do not increase design flow.

Lititz Sewer Authority WWTP is a Phase 1 significant discharger. The facility's waste load allocation (WLA) is tracked under an individual WLA as a significant discharger in the Phase 3 Supplement. The following Cap Loads specified in the current Phase 3 Supplement will be included in the draft permit:

NPDES Permit No.	Phase	Facility	Latest Permit Issuance Date	Permit Expiration Date	Cap Load Compliance Start Date	TN Cap Load (lbs/yr)	TN Offsets Included in Cap Load (lbs/yr)	TP Cap Load (lbs/yr)	TN Delivery Ratio	TP Delivery Ratio
PA0020320	1	Lititz Sewer Authority	7/19/2019	6/30/2023	10/1/2010	70,319	-	9,376	0.593	0.581

These Cap Loads are unchanged from the previous renewal. The Phase 3 Supplement states that "the minimum monitoring frequency for TN species and TP in new or renewed NPDES permits for Significant Sewage dischargers is 2/week." This frequency is consistent with the existing permit requirements. DEP no longer offers any tools to calculate monthly loads for

Net TN and Net TP, and it is no longer needed since offsets and credits are applied manually. Therefore, this reporting requirement is no longer needed and will be removed from the permit.

Total Dissolved Solids (TDS)

Total Dissolved Solids and its major constituents including Bromide, Chloride, and Sulfate were monitored during the previous permit cycle. Effluent data for these parameters has been collected, and these parameters will no longer be monitored in the permit renewal.

Total Residual Chlorine

The attached computer printout utilizes the equations and calculations as presented in the Department's May 1, 2003 Implementation Guidance for Total Residual Chlorine (TRC) (ID No. 391-2000-015) for developing chlorine limitations. The Guidance references Chapter 92, Section 92.2d (3) which establishes a standard BAT limit of 0.5 mg/l unless a facility-specific BAT has been developed. The attached printout indicates that a water quality limit of 0.04 mg/l would be needed to prevent toxicity concerns. It is recommended that a TRC limit of 0.04 mg/l monthly average and 0.15 mg/l instantaneous maximum be applied this permit cycle. The existing instantaneous maximum limit of 0.14 mg/l is slightly more stringent, and will remain in the permit.

UV Monitoring

DEP's SOP No. BPNPSM-PMT-033 recommends at a minimum, routine monitoring of UV transmittance, dosage, or intensity when the facility is utilizing a UV disinfection system. The monitoring should occur at the same frequency as would be used for TRC. This recommendation was implemented as a part of the proper operation and maintenance requirement specified in Part B of the NPDES permit, requesting permittees to demonstrate the effectiveness of UV disinfection system. This approach has been assigned to other facilities equipped with similar technology. A parameter for UV intensity monitoring is included in the existing permit, and will remain in the renewal.

Fecal Coliform

PA Code § 92a.47.(a)(4) requires a monthly average limit of 200/100 mL as a geometric mean and an instantaneous maximum limit not greater than 1,000/100 mL from May through September for fecal coliform. PA Code § 92a.47.(a)(5) requires a monthly average limit of 2,000/100 mL as a geometric mean and an instantaneous maximum limit not greater than 10,000/100 mL from October through April for fecal coliform. The instantaneous maximum fecal coliform limits have been included in the permit.

E. Coli

PA Code § 92a.61 requires IMAX reporting of E. Coli. Per DEP's SOP No. BCW-PMT-033, sewage dischargers with a design flow of >= 1 mgd will include E. Coli monitoring with a frequency of 1/month. This parameter has been added to the renewal permit.

Sampling Frequency & Sample Type

The monitoring requirements were established based on the Best Professional Judgment (BPJ), Table 6-3, and/or Table 6-4 of DEP's Technical Guidance No. 362-0400-001.

Flow Monitoring

Flow monitoring is required by 25 PA Code § 92a.61 and 40 CFR § 122.44(i)(1)(ii).

Influent BOD_5 and Total Suspended Solids (TSS) Monitoring

As a result of negotiation with US EPA, influent monitoring of TSS and BOD_5 are required for any publicly owned treatment works (POTWs); therefore, influent sampling of BOD_5 and TSS will remain in the permit. A 24-hr composite sample type will be required to be consistent with the existing sampling frequency for effluent TSS and $CBOD_5$.

Anti-Degradation

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. No High Quality Waters are impacted by this discharge. No Exceptional Value Waters are impacted by this discharge.

303(d) Listed Streams

The discharge is located on a stream segment that is designated on the 303(d) list as impaired. There is a recreational impairment due to pathogens from an unknown source. There is an aquatic life impairment due to total suspended solids from urban runoff/storm sewers. The permit includes limits for both fecal coliform and TSS.

Class A Wild Trout Fisheries

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

Anti-Backsliding

Pursuant to 40 CFR § 122.44(l)(1), all proposed permit requirements addressed in this fact sheet are at least as stringent as the requirements implemented in the existing NPDES permit unless any exceptions addressed by DEP in this fact sheet.

Development of Effluent Limitations

Outfall No.	002, 003	**Design Flow (MGD)**	Variable (stormwater)
Latitude	40º 9' 5" (002) 40º 9' 7" (003)	**Longitude**	76º 17' 4" (002) 76º 17' 7" (003)

Wastewater Description: Stormwater

Stormwater Limitations

The application lists two (2) stormwater outfalls for this facility. The potential pollutant sources for Outfall 002 are rainfall flow over driveway, vehicle fluids, diesel fuel, liquid wastewater and/or treatment plant sludge, ferrous chloride, and polyaluminum chloride. The potential pollutant sources for Outfall 003 are onsite runoffs, vehicle fluid, fuel oil, grit/screenings, garbage, liquid wastewater and/or treatment sludge and other residential activities, runoffs, vehicle fluids, and agricultural activities. Outfall 002 drains an area of approximately 25,000 ft^2. Outfall 003 drains an area of approximately 85,000 ft^2. No effluent monitoring is needed for the stormwater outfalls since the SIC Code does not dictate NPDES coverage. Part C requirements for stormwater outfalls will be included in the permit.

Whole Effluent Toxicity (WET)

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

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

The dilution series used for the tests was: 100%, 90%, 80%, 40%, and 20%. The Target Instream Waste Concentration (TIWC) to be used for analysis of the results is: 80.

Summary of Four Most Recent Test Results

TST Data Analysis

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

Test Date	*Ceriodaphnia* Results (Pass/Fail)		*Pimephales* Results (Pass/Fail)	
	Survival	Reproduction	Survival	Growth
5/18/21	Pass	Pass	Pass	Pass
8/31/21	Pass	Pass	Pass	Pass
12/7/21	Pass	Pass	Pass	Pass
2/8/22	Pass	Pass	Pass	Pass

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

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

☐ **YES** ☒ **NO**

Comments: None

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

Acute Partial Mix Factor (PMFa): **1** Chronic Partial Mix Factor (PMFc): **1**

1. Determine IWC – Acute (IWCa):

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

[(3.85 MGD x 1.547) / ((1.51 cfs x 1) + (3.85 MGD x 1.547))] x 100 = **79.8%**

Is IWCa < 1%? ☐ **YES** ☒ **NO**

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

N/A

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

2a. Determine Target IWCa (If Acute Tests Required)

TIWCa = 1 / 0.3 = N/A**%**

2b. Determine Target IWCc (If Chronic Tests Required)

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

[(3.85 MGD x 1.547) / ((1.51 cfs x 1) + (3.85 MGD x 1.547))] x 100 = **79.8%**

3. Determine Dilution Series

(NOTE – check Attachment C of WET SOP for dilution series based on TIWCa or TIWCc, whichever applies).

Dilution Series = 100%, 90%, 80%, 40%, and 20%.

WET Limits

Has reasonable potential been determined? ☐ YES ☒ NO

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

If WET limits will be established, identify the species and the limit values for the permit (TU).

N/A

If WET limits will not be established, but reasonable potential was determined, indicate the rationale for not establishing WET limits:

N/A

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" (386-0400-001), SOPs and/or BPJ.

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

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Instantaneous Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.04	XXX	0.14	1/day	Grab
CBOD5 Nov 1 - Apr 30	480	720	XXX	15.0	22.5	30	2/week	24-Hr Composite
CBOD5 May 1 - Oct 31	320	480	XXX	10.0	15.0	20	2/week	24-Hr Composite
BOD5 Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	2/week	24-Hr Composite
TSS Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	2/week	24-Hr Composite
TSS	960	1445	XXX	30.0	45.0	60	2/week	24-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/week	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/week	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/month	Grab
UV Intensity (mW/cm²)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Recorded
Ammonia Nov 1 - Apr 30	145	XXX	XXX	4.5	XXX	9	2/week	24-Hr Composite

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

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Instantaneous Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Ammonia May 1 - Oct 31	48	XXX	XXX	1.5	XXX	3	2/week	24-Hr Composite
Total Phosphorus	64	XXX	XXX	2.0	XXX	4	2/week	24-Hr Composite
Total Selenium	XXX	XXX	XXX	Report	XXX	XXX	1/month	24-Hr Composite
Total Zinc	XXX	XXX	XXX	Report	XXX	XXX	1/month	24-Hr Composite

Compliance Sampling Location: At discharge from facility

Other Comments: None

Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, to comply with Pennsylvania's Chesapeake Bay Tributary Strategy.

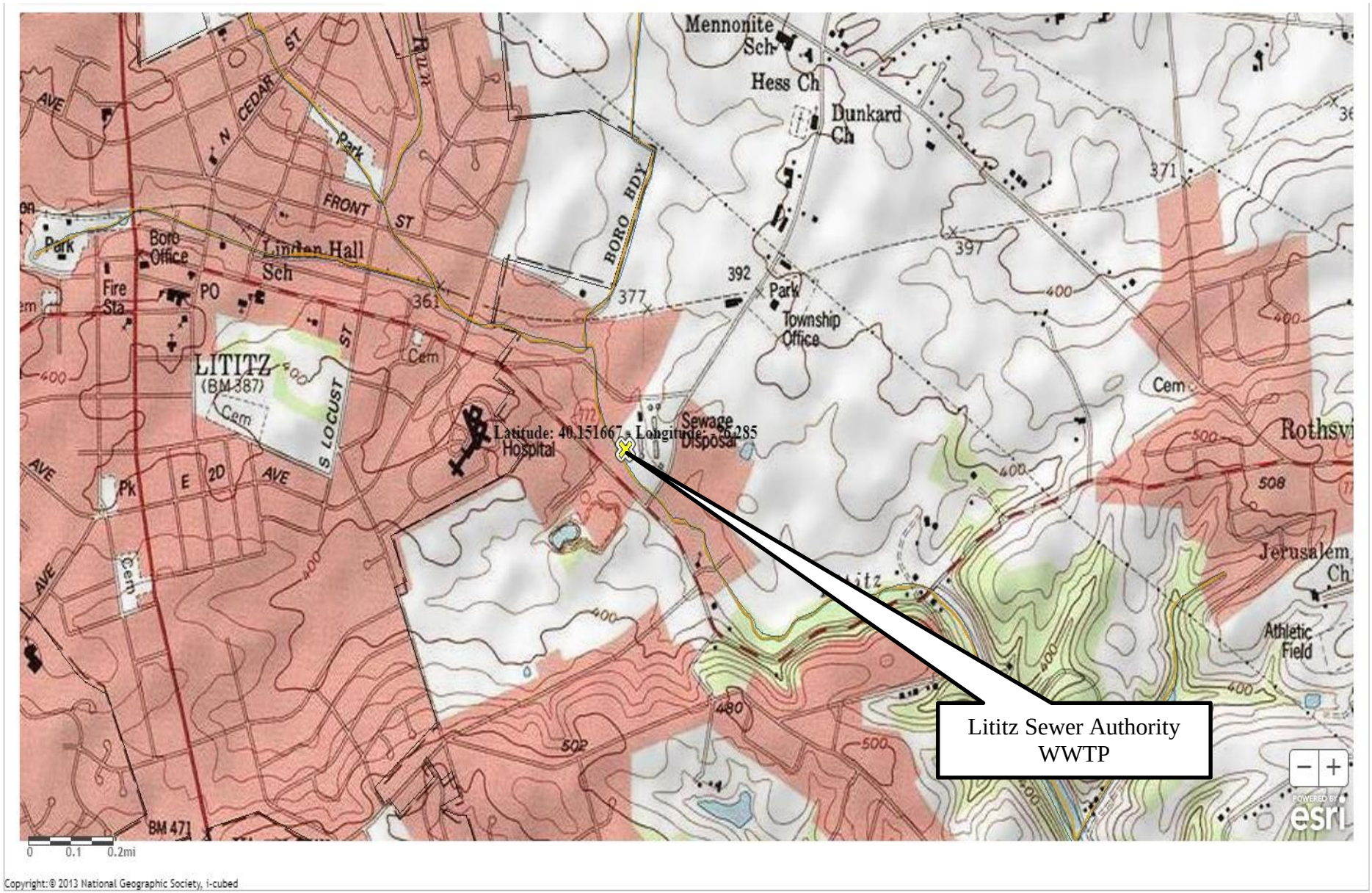
Outfall 001, Effective Period: Permit Effective Date through Permit Expiration Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Monthly	Annual	Monthly	Monthly Average	Maximum	Instant. Maximum		
Ammonia--N	Report	Report	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Kjeldahl--N	Report	XXX	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Nitrate-Nitrite as N	Report	XXX	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Total Nitrogen	Report	Report	XXX	Report	XXX	XXX	1/month	Calculation
Total Phosphorus	Report	Report	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Net Total Nitrogen	XXX	70,319	XXX	XXX	XXX	XXX	1/year	Calculation
Net Total Phosphorus	XXX	9,376	XXX	XXX	XXX	XXX	1/year	Calculation

Compliance Sampling Location: At discharge from facility

Other Comments: None

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, 386-0400-001, 10/97.
☐	Policy for Permitting Surface Water Diversions, 386-2000-019, 3/98.
☐	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 386-2000-018, 11/96.
☐	Technology-Based Control Requirements for Water Treatment Plant Wastes, 386-2183-001, 10/97.
☐	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 386-2183-002, 12/97.
☐	Pennsylvania CSO Policy, 386-2000-002, 9/08.
☐	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
☐	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 386-2000-008, 4/97.
☒	Determining Water Quality-Based Effluent Limits, 386-2000-004, 12/97.
☐	Implementation Guidance Design Conditions, 386-2000-007, 9/97.
☒	Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 386-2000-016, 6/2004.
☐	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 386-2000-012, 10/1997.
☐	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 386-2000-009, 3/99.
☐	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 386-2000-015, 5/2004.
☐	Implementation Guidance for Section 93.7 Ammonia Criteria, 386-2000-022, 11/97.
☐	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 386-2000-013, 4/2008.
☐	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 386-2000-011, 11/1994.
☐	Implementation Guidance for Temperature Criteria, 386-2000-001, 4/09.
☐	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 386-2000-021, 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, 386-2000-020, 10/97.
☐	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 386-2000-005, 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, 386-2000-010, 3/1999.
☐	Design Stream Flows, 386-2000-003, 9/98.
☐	Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics, 386-2000-006, 10/98.
☐	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 386-3200-001, 6/97.
☐	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
☒	SOP: SOP No. BCW-PMT-033
☐	Other: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Lititz Sewer Authority WWTP
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Lititz WWTP permit renewal extra sampling 2023

analyte

October		T. Selenium	units		T. Zinc	units
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21		0.0008	mg/l		0.126	mg/l
22		0.0003	mg/l		0.103	mg/l
23	<	0.0003	mg/l		0.094	mg/l
24						
25		0.0009	mg/l		0.115	mg/l
26						
27						
28						
29						
30		0.001	mg/l		0.089	mg/l
31		0.002	mg/l		0.133	mg/l
1-Nov		0.001	mg/l		0.136	mg/l
2						
3						
4						
5						
6		0.0009	mg/l		0.099	mg/l
7		0.0007	mg/l		0.088	mg/l
8		0.0008	mg/l		0.102	mg/l
min	<	0.0003	mg/l		0.088	mg/l
max		0.002	mg/l		0.136	mg/l
average	<	0.0009	mg/l		0.109	mg/l

M.J. Reider Associates, Inc.
ENVIRONMENTAL TESTING LABORATORY
U.S. EPA/PA DEP #06-00003

Certificate of Analysis

Laboratory No.: 2341944
Report: 10/26/23
Lab Contact: Richard A Wheeler

Attention: Nathan Laucks
Reported To: INFRAMARK - Lititz Services (Lititz), 50 Lititz Run Road Lititz, PA 17543

Project: NPDES - Se & Zn

Lab ID: 2341944-01 **Collected By:** Client **Sampled:** 10/22/23 07:20 **Received:** 10/24/23 14:14
Sample Desc: Effluent Comp **Sample Type:** Composite
Composite Begin: 10/21/23 7:18

	Result	Unit	MDL	Rep. Limit	Analysis Method	Analyzed	Notes	Analyst
Total Metals								
Selenium	0.0008	mg/l	0.0003	0.001	EPA 200.8 Rev 5.4	10/26/23	J	MPB
Zinc	0.126	mg/l	0.001	0.005	EPA 200.8 Rev 5.4	10/26/23		MPB

Preparation Methods

Specific Method	Preparation Method	Prep Batch	Prepared Date	Prepared By
2341944-01				
Total Metals				
EPA 200.8 Rev 5.4	EPA 200.2 Rev 2.8	B3J1685	10/25/2023	HRG

Notes and Definitions

J Estimated value.

107 Angelica Street ○ Reading, PA 19611 ○ www.mjreider.com ○ (610) 374-5129 ○ fax (610) 374-7234

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NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.
Additional accreditations by MD (261)

M.J. Reider Associates, Inc.
107 Angelica St, Reading PA, 19611
610-374-5129 www.mjreider.com

WORK ORDER
Chain of Custody

2341944

Client Code: 0988
Project Manager: Richard A Wheeler
Client: INFRAMARK - Lititz
Project: NPDES - Se & Zn
Report To: INFRAMARK - Lititz - Nathan Laucks - Services (Lititz), 50 Lititz Run Road, Lititz, PA 17543
Invoice To: INFRAMARK - Lititz - Nathan Laucks - Services (Lititz), 50 Lititz Run Road, Lititz, PA 17543

Collected By : (Full Name) Jason Shirhall

Comments:

2341944-01 Effluent Comp

Matrix: Non-Potable Water **Type:** Composite (Detailed) Date/Time: 10-22-23 / 0720

Composite Sample Start Date & Time: 10-21-23 / 0718 Equipment ID: eff. Set Up Initials: JT

Se EPA 200.8, Zn EPA 200.8

A - Pl 500ml HNO3

Relinquished By	Date/Time	Received By	Date/Time
10-24-23 1235		10.24.23 1235	
Relinquished By	Date/Time	Received By	Date/Time
Relinquished By	Date/Time	Received at Laboratory By	Date/Time
		OCT 24 2023 14:4	

Sample Kit Prepared By:	Date/Time
Sample Temp (°C):	3
Samples on Ice?	Yes No NA
Approved By:	JPF
Entered By:	CMC

The Client, by signing (or having the client's agent sign), agrees to MJRA's Terms and Conditions and to pay for the above requested services including any additional associated fees incurred

Page 1 of 1

Printed: 10/18/2023 2:27:20PM

Report Template: w

Page 2 of 3

M.J. Reider Associates, Inc.
ENVIRONMENTAL TESTING LABORATORY
U.S. EPA/PA DEP #06-00003

Certificate of Analysis

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Report: 10/26/23
Lab Contact: Richard A Wheeler

Attention: Nathan Laucks
Reported To: INFRAMARK - Lititz Services (Lititz), 50 Lititz Run Road Lititz, PA 17543

Project: NPDES - Se & Zn

Lab ID: 2341944-01 **Collected By:** Client **Sampled:** 10/22/23 07:20 **Received:** 10/24/23 14:14
Sample Desc: Effluent Comp **Sample Type:** Composite
Composite Begin: 10/21/23 7:18

	Result	Unit	MDL	Rep. Limit	Analysis Method	Analyzed	Notes	Analyst
Total Metals								
Selenium	0.0008	mg/l	0.0003	0.001	EPA 200.8 Rev 5.4	10/26/23	J	MPB
Zinc	0.126	mg/l	0.001	0.005	EPA 200.8 Rev 5.4	10/26/23		MPB

Preparation Methods

Specific Method	Preparation Method	Prep Batch	Prepared Date	Prepared By
2341944-01				
Total Metals				
EPA 200.8 Rev 5.4	EPA 200.2 Rev 2.8	B3J1685	10/25/2023	HRG

Notes and Definitions

J Estimated value.

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Additional accreditations by MD (261)

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WORK ORDER
Chain of Custody

2341945

Client Code: 0988
Client: INFRAMARK - Lititz
Project Manager: Richard A Wheeler
Project: NPDES - Se & Zn
Report To: INFRAMARK - Lititz - Nathan Laucks - Services (Lititz), 50 Lititz Run Road, Lititz, PA 17543
Invoice To: INFRAMARK - Lititz - Nathan Laucks - Services (Lititz), 50 Lititz Run Road, Lititz, PA 17543

Collected By : (Full Name) Joe Fiele

Comments:

2341945-01 Effluent Comp

Matrix: Non-Potable Water **Type:** Composite (Detailed) Date/Time: 10-23-23/ 0735

Composite Sample Start Date & Time: 10-22-23/ 0722 Equipment ID: EFF. Set Up Initials: JJS

Se EPA 200.8, Zn EPA 200.8

A - Pl 500ml HNO3

Relinquished By	Date/Time	Received By	Date/Time
	10-24-23 1235		10-24-23 1235
Relinquished By	Date/Time	Received By	Date/Time
Relinquished By	Date/Time	Received at Laboratory By	Date/Time
			OCT 24 2023 14:4

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Page 1 of 1

Printed: 10/18/2023 2:27:22PM

Sample Kit Prepared By:	Date/Time
Sample Temp (°C):	3
Samples on Ice?	(Yes) No NA
Approved By:	SAP
Entered By:	CML

Report Template: w

M.J. Reider Associates, Inc.
ENVIRONMENTAL TESTING LABORATORY
U.S. EPA/PA DEP #06-00003

Certificate of Analysis

Laboratory No.: 2341944
Report: 10/26/23
Lab Contact: Richard A Wheeler

Attention: Nathan Laucks
Reported To: INFRAMARK - Lititz Services (Lititz), 50 Lititz Run Road Lititz, PA 17543

Project: NPDES - Se & Zn

Lab ID: 2341944-01 **Collected By:** Client **Sampled:** 10/22/23 07:20 **Received:** 10/24/23 14:14
Sample Desc: Effluent Comp **Sample Type:** Composite
Composite Begin: 10/21/23 7:18

	Result	Unit	MDL	Rep. Limit	Analysis Method	Analyzed	Notes	Analyst
Total Metals								
Selenium	0.0008	mg/l	0.0003	0.001	EPA 200.8 Rev 5.4	10/26/23	J	MPB
Zinc	0.126	mg/l	0.001	0.005	EPA 200.8 Rev 5.4	10/26/23		MPB

Preparation Methods

Specific Method	Preparation Method	Prep Batch	Prepared Date	Prepared By
2341944-01				
Total Metals				
EPA 200.8 Rev 5.4	EPA 200.2 Rev 2.8	B3J1685	10/25/2023	HRG

Notes and Definitions

J Estimated value.

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WORK ORDER
Chain of Custody

2341946

Client Code: 0988
Project Manager: Richard A Wheeler
Client: INFRAMARK - Lititz
Project: NPDES - Se & Zn
Report To: INFRAMARK - Lititz - Nathan Laucks - Services (Lititz), 50 Lititz Run Road, Lititz, PA 17543
Invoice To: INFRAMARK - Lititz - Nathan Laucks - Services (Lititz), 50 Lititz Run Road, Lititz, PA 17543

Collected By : (Full Name) Joe Ickes
Comments:

2341946-01 Effluent Comp
Matrix: Non-Potable Water **Type:** Composite (Detailed) Date/Time: 10-24-23 0734
Composite Sample Start Date & Time: 10-23-23 0732 Equipment ID: Eff Set Up Initials: JI
Se EPA 200.8, Zn EPA 200.8
A - Pl 500ml HNO3

	Date/Time		Date/Time
Relinquished By	10-24-23 1235	Received By	10-24-23 1335
Relinquished By	Date/Time	Received By	Date/Time
Relinquished By	Date/Time	Received at Laboratory By	OCT 24 2023 14:4 Date/Time

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Page 1 of 1

Printed: 10/18/2023 2:27:24PM

Sample Kit Prepared By:	Date/Time
Sample Temp (°C):	3
Samples on Ice?	Yes No NA
Approved By:	
Entered By:	CML

Report Template: w

M.J. Reider Associates, Inc.
ENVIRONMENTAL TESTING LABORATORY
U.S. EPA/PA DEP #06-00003

Certificate of Analysis

Laboratory No.: 2341944
Report: 10/26/23
Lab Contact: Richard A Wheeler

Attention: Nathan Laucks
Reported To: INFRAMARK - Lititz Services (Lititz), 50 Lititz Run Road Lititz, PA 17543

Project: NPDES - Se & Zn

Lab ID: 2341944-01 **Collected By:** Client **Sampled:** 10/22/23 07:20 **Received:** 10/24/23 14:14
Sample Desc: Effluent Comp **Sample Type:** Composite
Composite Begin: 10/21/23 7:18

	Result	Unit	MDL	Rep. Limit	Analysis Method	Analyzed	Notes	Analyst
Total Metals								
Selenium	0.0008	mg/l	0.0003	0.001	EPA 200.8 Rev 5.4	10/26/23	J	MPB
Zinc	0.126	mg/l	0.001	0.005	EPA 200.8 Rev 5.4	10/26/23		MPB

Preparation Methods

Specific Method	Preparation Method	Prep Batch	Prepared Date	Prepared By
2341944-01				
Total Metals				
EPA 200.8 Rev 5.4	EPA 200.2 Rev 2.8	B3J1685	10/25/2023	HRG

Notes and Definitions

J Estimated value.

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WORK ORDER
Chain of Custody

2341948

Client Code: 0988
Client: INFRAMARK - Lititz
Project Manager: Richard A Wheeler
Project: NPDES - Se & Zn
Report To: INFRAMARK - Lititz - Nathan Laucks - Services (Lititz), 50 Lititz Run Road, Lititz, PA 17543
Invoice To: INFRAMARK - Lititz - Nathan Laucks - Services (Lititz), 50 Lititz Run Road, Lititz, PA 17543

Collected By : (Full Name) [signature]

Comments:

2341948-01 Effluent Comp

Matrix: Non-Potable Water **Type:** Composite (Detailed) Date/Time: 10-26-23/ 0751

Composite Sample Start Date & Time: 10-25-23/ 0738 Equipment ID: eff. Set Up Initials: JP

Se EPA 200.8, Zn EPA 200.8

A - Pl 500ml HNO3

Relinquished By	Date/Time	Received By	Date/Time
[signature]	10-26-23/ 1136	[signature]	10-26-23 1136

Received at Laboratory By: OCT 26 2023 1350

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Page 1 of 1

Printed: 10/18/2023 2:27:27PM

Sample Kit Prepared By:	Date/Time
Sample Temp (°C):	2
Samples on Ice?	(Yes) No NA
Approved By:	JNF
Entered By:	[signature]

Report Template: w

M.J. Reider Associates, Inc.
ENVIRONMENTAL TESTING LABORATORY
U.S. EPA/PA DEP #06-00003

Certificate of Analysis

Laboratory No.: 2341944
Report: 10/26/23
Lab Contact: Richard A Wheeler

Attention: Nathan Laucks
Reported To: INFRAMARK - Lititz Services (Lititz), 50 Lititz Run Road Lititz, PA 17543

Project: NPDES - Se & Zn

Lab ID: 2341944-01 **Collected By:** Client **Sampled:** 10/22/23 07:20 **Received:** 10/24/23 14:14
Sample Desc: Effluent Comp **Sample Type:** Composite
Composite Begin: 10/21/23 7:18

	Result	Unit	MDL	Rep. Limit	Analysis Method	Analyzed	Notes	Analyst
Total Metals								
Selenium	0.0008	mg/l	0.0003	0.001	EPA 200.8 Rev 5.4	10/26/23	J	MPB
Zinc	0.126	mg/l	0.001	0.005	EPA 200.8 Rev 5.4	10/26/23		MPB

Preparation Methods

Specific Method	Preparation Method	Prep Batch	Prepared Date	Prepared By
2341944-01				
Total Metals				
EPA 200.8 Rev 5.4	EPA 200.2 Rev 2.8	B3J1685	10/25/2023	HRG

Notes and Definitions

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WORK ORDER
Chain of Custody

2341950

Client Code: 0988
Client: INFRAMARK - Lititz
Project Manager: Richard A Wheeler
Project: NPDES - Se & Zn
Report To: INFRAMARK - Lititz - Nathan Laucks - Services (Lititz), 50 Lititz Run Road, Lititz, PA 17543
Invoice To: INFRAMARK - Lititz - Nathan Laucks - Services (Lititz), 50 Lititz Run Road, Lititz, PA 17543

Collected By : (Full Name) [signature]

Comments:

2341950-01 Effluent Comp

Matrix: Non-Potable Water **Type:** Composite (Detailed) Date/Time: 10-31-23/ 0734

Composite Sample Start Date & Time: 10-30-23/ 0730 Equipment ID: eff. Set Up Initials: JZ

Se EPA 200.8, Zn EPA 200.8

A - Pl 500ml HNO3

Relinquished By	Date/Time	Received By	Date/Time
[signature]	10-31-23/ 1047	[signature]	10/31/23 1049
		[signature]	10/31/23 1450

Received at Laboratory By

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Page 1 of 1

Printed: 10/18/2023 2:27:31PM

Sample Kit Prepared By:	Date/Time
Sample Temp (°C):	2.0
Samples on Ice?	(Yes) No NA
Approved By:	SGR
Entered By:	[signature]

Report Template

M.J. Reider Associates, Inc.
ENVIRONMENTAL TESTING LABORATORY
U.S. EPA/PA DEP #06-00003

Certificate of Analysis

Laboratory No.: 2341944
Report: 10/26/23
Lab Contact: Richard A Wheeler

Attention: Nathan Laucks
Reported To: INFRAMARK - Lititz Services (Lititz), 50 Lititz Run Road Lititz, PA 17543

Project: NPDES - Se & Zn

Lab ID: 2341944-01 **Collected By:** Client **Sampled:** 10/22/23 07:20 **Received:** 10/24/23 14:14
Sample Desc: Effluent Comp **Sample Type:** Composite
Composite Begin: 10/21/23 7:18

	Result	Unit	MDL	Rep. Limit	Analysis Method	Analyzed	Notes	Analyst
Total Metals								
Selenium	0.0008	mg/l	0.0003	0.001	EPA 200.8 Rev 5.4	10/26/23	J	MPB
Zinc	0.126	mg/l	0.001	0.005	EPA 200.8 Rev 5.4	10/26/23		MPB

Preparation Methods

Specific Method	Preparation Method	Prep Batch	Prepared Date	Prepared By
2341944-01				
Total Metals				
EPA 200.8 Rev 5.4	EPA 200.2 Rev 2.8	B3J1685	10/25/2023	HRG

Notes and Definitions

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WORK ORDER
Chain of Custody

2341947

Client Code: 0988 **Client:** INFRAMARK - Lititz
Project Manager: Richard A Wheeler **Project:** NPDES - Se & Zn
Report To: INFRAMARK - Lititz - Nathan Laucks - Services (Lititz), 50 Lititz Run Road, Lititz, PA 17543
Invoice To: INFRAMARK - Lititz - Nathan Laucks - Services (Lititz), 50 Lititz Run Road, Lititz, PA 17543

Collected By : (Full Name) Jmd Gilree **Comments:**

2341947-01 Effluent Comp **Matrix:** Non-Potable Water **Type:** Composite (Detailed) Date/Time: 11-1-23 / 0736

Composite Sample Start Date & Time: 10-31-23/ 0735 Equipment ID: eff. Set Up Initials: JR

Se EPA 200.8, Zn EPA 200.8 A - Pl 500ml HNO3

Relinquished By	Date/Time	Received By	Date/Time
Jmd Gilree	11-2-23/1149		11/2/23 1149
			11/2/23 1340

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Page 1 of 1 Printed: 10/18/2023 2:27:26PM

Sample Kit Prepared By:	Date/Time
Sample Temp (°C):	5.0
Samples on Ice?	(Yes) No NA
Approved By:	
Entered By:	LEC

Report Template: Page 2 of 3

M.J. Reider Associates, Inc.
ENVIRONMENTAL TESTING LABORATORY
U.S. EPA/PA DEP #06-00003

Certificate of Analysis

Laboratory No.: 2341944
Report: 10/26/23
Lab Contact: Richard A Wheeler

Attention: Nathan Laucks
Reported To: INFRAMARK - Lititz Services (Lititz), 50 Lititz Run Road Lititz, PA 17543

Project: NPDES - Se & Zn

Lab ID: 2341944-01 **Collected By:** Client **Sampled:** 10/22/23 07:20 **Received:** 10/24/23 14:14
Sample Desc: Effluent Comp **Sample Type:** Composite
Composite Begin: 10/21/23 7:18

	Result	Unit	MDL	Rep. Limit	Analysis Method	Analyzed	Notes	Analyst
Total Metals								
Selenium	0.0008	mg/l	0.0003	0.001	EPA 200.8 Rev 5.4	10/26/23	J	MPB
Zinc	0.126	mg/l	0.001	0.005	EPA 200.8 Rev 5.4	10/26/23		MPB

Preparation Methods

Specific Method	Preparation Method	Prep Batch	Prepared Date	Prepared By
2341944-01				
Total Metals				
EPA 200.8 Rev 5.4	EPA 200.2 Rev 2.8	B3J1685	10/25/2023	HRG

Notes and Definitions

J Estimated value.

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WORK ORDER
Chain of Custody

2341949

Client Code: 0988 **Client:** INFRAMARK - Lititz
Project Manager: Richard A Wheeler **Project:** NPDES - Se & Zn
Report To: INFRAMARK - Lititz - Nathan Laucks - Services (Lititz), 50 Lititz Run Road, Lititz, PA 17543
Invoice To: INFRAMARK - Lititz - Nathan Laucks - Services (Lititz), 50 Lititz Run Road, Lititz, PA 17543

Collected By : (Full Name) Jmd Kibler

Comments:

2341949-01 Effluent Comp

Matrix: Non-Potable Water **Type:** Composite (Detailed) Date/Time: 11-2-23/0740

Composite Sample Start Date & Time: 11-1-23/0736 Equipment ID: eff. Set Up Initials: JR

Se EPA 200.8, Zn EPA 200.8

A - Pl 500ml HNO3

Relinquished By	Date/Time	Received By	Date/Time
Jmd Kibler	11-2-23/1149		11/2/23 1149
		Received at Laboratory By	11/2/23 1340

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Page 1 of 1

Printed: 10/18/2023 2:27:29PM

Sample Kit Prepared By:	Date/Time
Sample Temp (°C):	5.6
Samples on Ice?	(Yes) No NA
Approved By:	JR
Entered By:	LEC/CMM

Report Template: Page 2 of 3

M.J. Reider Associates, Inc.
ENVIRONMENTAL TESTING LABORATORY
U.S. EPA/PA DEP #06-00003

Certificate of Analysis

Laboratory No.: 2341944
Report: 10/26/23
Lab Contact: Richard A Wheeler

Attention: Nathan Laucks
Reported To: INFRAMARK - Lititz Services (Lititz), 50 Lititz Run Road Lititz, PA 17543

Project: NPDES - Se & Zn

Lab ID: 2341944-01 **Collected By:** Client **Sampled:** 10/22/23 07:20 **Received:** 10/24/23 14:14
Sample Desc: Effluent Comp **Sample Type:** Composite
Composite Begin: 10/21/23 7:18

	Result	Unit	MDL	Rep. Limit	Analysis Method	Analyzed	Notes	Analyst
Total Metals								
Selenium	0.0008	mg/l	0.0003	0.001	EPA 200.8 Rev 5.4	10/26/23	J	MPB
Zinc	0.126	mg/l	0.001	0.005	EPA 200.8 Rev 5.4	10/26/23		MPB

Preparation Methods

Specific Method	Preparation Method	Prep Batch	Prepared Date	Prepared By
2341944-01				
Total Metals				
EPA 200.8 Rev 5.4	EPA 200.2 Rev 2.8	B3J1685	10/25/2023	HRG

Notes and Definitions

J Estimated value.

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WORK ORDER
Chain of Custody

2341951

Client Code: 0988
Client: INFRAMARK - Lititz
Project Manager: Richard A Wheeler
Project: NPDES - Se & Zn
Report To: INFRAMARK - Lititz - Nathan Laucks - Services (Lititz), 50 Lititz Run Road, Lititz, PA 17543
Invoice To: INFRAMARK - Lititz - Nathan Laucks - Services (Lititz), 50 Lititz Run Road, Lititz, PA 17543

Collected By : (Full Name) Jmd Kibble
Comments:

2341951-01 Effluent Comp
Matrix: Non-Potable Water **Type:** Composite (Detailed) Date/Time: 11-7-23/ 0751
Composite Sample Start Date & Time: 11-6-23/ 0751 Equipment ID: eff. Set Up Initials: JR
Se EPA 200.8, Zn EPA 200.8
A - Pl 500ml HNO3

Relinquished By	Date/Time	Received By	Date/Time
Jmd Kibble	11-7-23/1108		11-7-23 1108
		NOV 07 2023	1300

Relinquished By / Date/Time / Received at Laboratory By / Date/Time

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Page 1 of 1

Printed: 10/18/2023 2:27:33PM

Sample Kit Prepared By:	Date/Time
Sample Temp (°C):	2
Samples on Ice?	Yes No NA
Approved By:	JPF
Entered By:	CMC

Report Template:

M.J. Reider Associates, Inc.
ENVIRONMENTAL TESTING LABORATORY
U.S. EPA/PA DEP #06-00003

Certificate of Analysis

Laboratory No.: 2341944
Report: 10/26/23
Lab Contact: Richard A Wheeler

Attention: Nathan Laucks
Reported To: INFRAMARK - Lititz Services (Lititz), 50 Lititz Run Road Lititz, PA 17543

Project: NPDES - Se & Zn

Lab ID: 2341944-01 **Collected By:** Client **Sampled:** 10/22/23 07:20 **Received:** 10/24/23 14:14
Sample Desc: Effluent Comp **Sample Type:** Composite
Composite Begin: 10/21/23 7:18

	Result	Unit	MDL	Rep. Limit	Analysis Method	Analyzed	Notes	Analyst
Total Metals								
Selenium	0.0008	mg/l	0.0003	0.001	EPA 200.8 Rev 5.4	10/26/23	J	MPB
Zinc	0.126	mg/l	0.001	0.005	EPA 200.8 Rev 5.4	10/26/23		MPB

Preparation Methods

Specific Method	Preparation Method	Prep Batch	Prepared Date	Prepared By
2341944-01				
Total Metals				
EPA 200.8 Rev 5.4	EPA 200.2 Rev 2.8	B3J1685	10/25/2023	HRG

Notes and Definitions

J Estimated value.

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WORK ORDER
Chain of Custody

2341953

Client Code: 0988
Project Manager: Richard A Wheeler
Client: INFRAMARK - Lititz
Project: NPDES - Se & Zn
Report To: INFRAMARK - Lititz - Nathan Laucks - Services (Lititz), 50 Lititz Run Road, Lititz, PA 17543
Invoice To: INFRAMARK - Lititz - Nathan Laucks - Services (Lititz), 50 Lititz Run Road, Lititz, PA 17543

Collected By : (Full Name) Joe Ingle
Comments:

2341953-01 Effluent Comp
Matrix: Non-Potable Water **Type:** Composite (Detailed) Date/Time: 11-8-23 0727
Composite Sample Start Date & Time: 11-7-23 0752 Equipment ID: Eff Set Up Initials: JF
Se EPA 200.8, Zn EPA 200.8
A - Pl 500ml HNO3

Relinquished By	11-9-23 1335 Date/Time	Received By	11-9-23 1335 Date/Time
Relinquished By	Date/Time	Received By	Date/Time
Relinquished By	Date/Time	Received at Laboratory By	NOV 09 2023 1520 Date/Time

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Page 1 of 1

Printed: 10/18/2023 2:27:37PM

Sample Kit Prepared By:	Date/Time
Sample Temp (°C):	2
Samples on Ice?	Yes No NA
Approved By:	JPE
Entered By:	CMW

Report Template

M.J. Reider Associates, Inc.
ENVIRONMENTAL TESTING LABORATORY
U.S. EPA/PA DEP #06-00003

Certificate of Analysis

Laboratory No.: 2341944
Report: 10/26/23
Lab Contact: Richard A Wheeler

Attention: Nathan Laucks
Reported To: INFRAMARK - Lititz Services (Lititz), 50 Lititz Run Road Lititz, PA 17543

Project: NPDES - Se & Zn

Lab ID: 2341944-01 **Collected By:** Client **Sampled:** 10/22/23 07:20 **Received:** 10/24/23 14:14
Sample Desc: Effluent Comp **Sample Type:** Composite
Composite Begin: 10/21/23 7:18

	Result	Unit	MDL	Rep. Limit	Analysis Method	Analyzed	Notes	Analyst
Total Metals								
Selenium	0.0008	mg/l	0.0003	0.001	EPA 200.8 Rev 5.4	10/26/23	J	MPB
Zinc	0.126	mg/l	0.001	0.005	EPA 200.8 Rev 5.4	10/26/23		MPB

Preparation Methods

Specific Method	Preparation Method	Prep Batch	Prepared Date	Prepared By
2341944-01				
Total Metals				
EPA 200.8 Rev 5.4	EPA 200.2 Rev 2.8	B3J1685	10/25/2023	HRG

Notes and Definitions

J Estimated value.

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WORK ORDER
Chain of Custody

2341952

Client Code: 0988
Project Manager: Richard A Wheeler
Client: INFRAMARK - Lititz
Project: NPDES - Se & Zn
Report To: INFRAMARK - Lititz - Nathan Laucks - Services (Lititz), 50 Lititz Run Road, Lititz, PA 17543
Invoice To: INFRAMARK - Lititz - Nathan Laucks - Services (Lititz), 50 Lititz Run Road, Lititz, PA 17543

Collected By : (Full Name) Joseph Fiorki

Comments:

2341952-01 Effluent Comp

Matrix: Non-Potable Water **Type:** Composite (Detailed) Date/Time: 11-9-23 0726

Composite Sample Start Date & Time: 11-8-23 0725 Equipment ID: Eff Set Up Initials: JF

Se EPA 200.8, Zn EPA 200.8

A - Pl 500ml HNO3

Relinquished By	Date/Time	Received By	Date/Time
	11-9-23 1335		11-9-23 1335
Relinquished By	Date/Time	Received By	Date/Time
Relinquished By	Date/Time	Received at Laboratory By	Date/Time
		NOV 09 2023 1520	

Sample Kit Prepared By:	Date/Time
Sample Temp (°C):	2
Samples on Ice?	(Yes) No NA
Approved By:	JPP
Entered By:	CMM

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Report Template: Page 2 of 3

Lititz WWTP permit renewal extra sampling 2023

analyte						
October		T. Selenium	units		T. Zinc	units
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21		0.0008	mg/l		0.126	mg/l
22		0.0003	mg/l		0.103	mg/l
23	<	0.0003	mg/l		0.094	mg/l
24						
25		0.0009	mg/l		0.115	mg/l
26						
27						
28						
29						
30		0.001	mg/l		0.089	mg/l
31		0.002	mg/l		0.133	mg/l
1-Nov		0.001	mg/l		0.136	mg/l
2						
3						
4						
5						
6		0.0009	mg/l		0.099	mg/l
7		0.0007	mg/l		0.088	mg/l
8		0.0008	mg/l		0.102	mg/l
min	<	0.0003	mg/l		0.088	mg/l
max		0.002	mg/l		0.136	mg/l
average	<	0.0009	mg/l		0.109	mg/l

M.J. Reider Associates, Inc.
ENVIRONMENTAL TESTING LABORATORY
U.S. EPA/PA DEP #06-00003

Certificate of Analysis

Laboratory No.: 2341944
Report: 10/26/23
Lab Contact: Richard A Wheeler

Attention: Nathan Laucks
Reported To: INFRAMARK - Lititz Services (Lititz), 50 Lititz Run Road Lititz, PA 17543

Project: NPDES - Se & Zn

Lab ID: 2341944-01 **Collected By:** Client **Sampled:** 10/22/23 07:20 **Received:** 10/24/23 14:14
Sample Desc: Effluent Comp **Sample Type:** Composite
Composite Begin: 10/21/23 7:18

	Result	Unit	MDL	Rep. Limit	Analysis Method	Analyzed	Notes	Analyst
Total Metals								
Selenium	0.0008	mg/l	0.0003	0.001	EPA 200.8 Rev 5.4	10/26/23	J	MPB
Zinc	0.126	mg/l	0.001	0.005	EPA 200.8 Rev 5.4	10/26/23		MPB

Preparation Methods

Specific Method	Preparation Method	Prep Batch	Prepared Date	Prepared By
2341944-01				
Total Metals				
EPA 200.8 Rev 5.4	EPA 200.2 Rev 2.8	B3J1685	10/25/2023	HRG

Notes and Definitions

J Estimated value.

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WORK ORDER
Chain of Custody

2341944

Client Code: 0988
Project Manager: Richard A Wheeler
Client: INFRAMARK - Lititz
Project: NPDES - Se & Zn
Report To: INFRAMARK - Lititz - Nathan Laucks - Services (Lititz), 50 Lititz Run Road, Lititz, PA 17543
Invoice To: INFRAMARK - Lititz - Nathan Laucks - Services (Lititz), 50 Lititz Run Road, Lititz, PA 17543

Collected By : (Full Name) Jason Shirhall

Comments:

2341944-01 Effluent Comp

Matrix: Non-Potable Water **Type:** Composite (Detailed) Date/Time: 10-22-23 / 0720

Composite Sample Start Date & Time: 10-21-23 / 0718 Equipment ID: eff. Set Up Initials: JT

Se EPA 200.8, Zn EPA 200.8

A - Pl 500ml HNO3

Relinquished By	Date/Time	Received By	Date/Time
10-24-23 1235		10.24.23 1235	
Relinquished By	Date/Time	Received By	Date/Time
Relinquished By	Date/Time	Received at Laboratory By	Date/Time
		OCT 24 2023 14:4	

Sample Kit Prepared By:	Date/Time
Sample Temp (°C):	3
Samples on Ice?	Yes No NA
Approved By:	JPF
Entered By:	CMC

The Client, by signing (or having the client's agent sign), agrees to MJRA's Terms and Conditions and to pay for the above requested services including any additional associated fees incurred

Page 1 of 1

Printed: 10/18/2023 2:27:20PM

Report Template: w

Page 2 of 3

M.J. Reider Associates, Inc.
ENVIRONMENTAL TESTING LABORATORY
U.S. EPA/PA DEP #06-00003

Certificate of Analysis

Laboratory No.: 2341944
Report: 10/26/23
Lab Contact: Richard A Wheeler

Attention: Nathan Laucks
Reported To: INFRAMARK - Lititz Services (Lititz), 50 Lititz Run Road Lititz, PA 17543

Project: NPDES - Se & Zn

Lab ID: 2341944-01 **Collected By:** Client **Sampled:** 10/22/23 07:20 **Received:** 10/24/23 14:14
Sample Desc: Effluent Comp **Sample Type:** Composite
Composite Begin: 10/21/23 7:18

	Result	Unit	MDL	Rep. Limit	Analysis Method	Analyzed	Notes	Analyst
Total Metals								
Selenium	0.0008	mg/l	0.0003	0.001	EPA 200.8 Rev 5.4	10/26/23	J	MPB
Zinc	0.126	mg/l	0.001	0.005	EPA 200.8 Rev 5.4	10/26/23		MPB

Preparation Methods

Specific Method	Preparation Method	Prep Batch	Prepared Date	Prepared By
2341944-01				
Total Metals				
EPA 200.8 Rev 5.4	EPA 200.2 Rev 2.8	B3J1685	10/25/2023	HRG

Notes and Definitions

J Estimated value.

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WORK ORDER
Chain of Custody

2341945

Client Code: 0988
Client: INFRAMARK - Lititz
Project Manager: Richard A Wheeler
Project: NPDES - Se & Zn
Report To: INFRAMARK - Lititz - Nathan Laucks - Services (Lititz), 50 Lititz Run Road, Lititz, PA 17543
Invoice To: INFRAMARK - Lititz - Nathan Laucks - Services (Lititz), 50 Lititz Run Road, Lititz, PA 17543

Collected By : (Full Name) Joe Fiele

Comments:

2341945-01 Effluent Comp

Matrix: Non-Potable Water **Type:** Composite (Detailed) Date/Time: 10-23-23/ 0735

Composite Sample Start Date & Time: 10-22-23/ 0722 Equipment ID: EFF. Set Up Initials: JJS

Se EPA 200.8, Zn EPA 200.8

A - Pl 500ml HNO3

Relinquished By	Date/Time	Received By	Date/Time
	10-24-23 1235		10-24-23 1235
Relinquished By	Date/Time	Received By	Date/Time
Relinquished By	Date/Time	Received at Laboratory By	Date/Time
			OCT 24 2023 14:4

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Page 1 of 1

Printed: 10/18/2023 2:27:22PM

Sample Kit Prepared By:	Date/Time
Sample Temp (°C):	3
Samples on Ice?	(Yes) No NA
Approved By:	SAP
Entered By:	CML

Report Template: v

M.J. Reider Associates, Inc.
ENVIRONMENTAL TESTING LABORATORY
U.S. EPA/PA DEP #06-00003

Certificate of Analysis

Laboratory No.: 2341944
Report: 10/26/23
Lab Contact: Richard A Wheeler

Attention: Nathan Laucks
Reported To: INFRAMARK - Lititz Services (Lititz), 50 Lititz Run Road Lititz, PA 17543

Project: NPDES - Se & Zn

Lab ID: 2341944-01 **Collected By:** Client **Sampled:** 10/22/23 07:20 **Received:** 10/24/23 14:14
Sample Desc: Effluent Comp **Sample Type:** Composite
Composite Begin: 10/21/23 7:18

	Result	Unit	MDL	Rep. Limit	Analysis Method	Analyzed	Notes	Analyst
Total Metals								
Selenium	0.0008	mg/l	0.0003	0.001	EPA 200.8 Rev 5.4	10/26/23	J	MPB
Zinc	0.126	mg/l	0.001	0.005	EPA 200.8 Rev 5.4	10/26/23		MPB

Preparation Methods

Specific Method	Preparation Method	Prep Batch	Prepared Date	Prepared By
2341944-01				
Total Metals				
EPA 200.8 Rev 5.4	EPA 200.2 Rev 2.8	B3J1685	10/25/2023	HRG

Notes and Definitions

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WORK ORDER
Chain of Custody

2341946

Client Code: 0988
Project Manager: Richard A Wheeler
Client: INFRAMARK - Lititz
Project: NPDES - Se & Zn
Report To: INFRAMARK - Lititz - Nathan Laucks - Services (Lititz), 50 Lititz Run Road, Lititz, PA 17543
Invoice To: INFRAMARK - Lititz - Nathan Laucks - Services (Lititz), 50 Lititz Run Road, Lititz, PA 17543

Collected By : (Full Name) Joe Ickes
Comments:

2341946-01 Effluent Comp
Matrix: Non-Potable Water **Type:** Composite (Detailed) Date/Time: 10-24-23 0734
Composite Sample Start Date & Time: 10-23-23 0732 Equipment ID: Eff Set Up Initials: JI
Se EPA 200.8, Zn EPA 200.8
A - Pl 500ml HNO3

Relinquished By	Date/Time 10-24-23 1235	Received By	Date/Time 10-24-23 1335
Relinquished By	Date/Time	Received By	Date/Time
Relinquished By	Date/Time	Received at Laboratory By	Date/Time OCT 24 2023 14:4

Sample Kit Prepared By:	Date/Time
Sample Temp (°C):	3
Samples on Ice?	Yes No NA
Approved By:	JPF
Entered By:	CML

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ENVIRONMENTAL TESTING LABORATORY
U.S. EPA/PA DEP #06-00003

Certificate of Analysis

Laboratory No.: 2341944
Report: 10/26/23
Lab Contact: Richard A Wheeler

Attention: Nathan Laucks
Reported To: INFRAMARK - Lititz Services (Lititz), 50 Lititz Run Road Lititz, PA 17543

Project: NPDES - Se & Zn

Lab ID: 2341944-01 **Collected By:** Client **Sampled:** 10/22/23 07:20 **Received:** 10/24/23 14:14
Sample Desc: Effluent Comp **Sample Type:** Composite
Composite Begin: 10/21/23 7:18

	Result	Unit	MDL	Rep. Limit	Analysis Method	Analyzed	Notes	Analyst
Total Metals								
Selenium	0.0008	mg/l	0.0003	0.001	EPA 200.8 Rev 5.4	10/26/23	J	MPB
Zinc	0.126	mg/l	0.001	0.005	EPA 200.8 Rev 5.4	10/26/23		MPB

Preparation Methods

Specific Method	Preparation Method	Prep Batch	Prepared Date	Prepared By
2341944-01				
Total Metals				
EPA 200.8 Rev 5.4	EPA 200.2 Rev 2.8	B3J1685	10/25/2023	HRG

Notes and Definitions

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WORK ORDER
Chain of Custody

2341948

Client Code: 0988
Client: INFRAMARK - Lititz
Project Manager: Richard A Wheeler
Project: NPDES - Se & Zn
Report To: INFRAMARK - Lititz - Nathan Laucks - Services (Lititz), 50 Lititz Run Road, Lititz, PA 17543
Invoice To: INFRAMARK - Lititz - Nathan Laucks - Services (Lititz), 50 Lititz Run Road, Lititz, PA 17543

Collected By : (Full Name) [signature]

Comments:

2341948-01 Effluent Comp

Matrix: Non-Potable Water **Type:** Composite (Detailed) Date/Time: 10-26-23/ 0751

Composite Sample Start Date & Time: 10-25-23/ 0738 Equipment ID: eff. Set Up Initials: JP

Se EPA 200.8, Zn EPA 200.8

A - Pl 500ml HNO3

Relinquished By	Date/Time	Received By	Date/Time
[signature]	10-26-23/ 1136	[signature]	10-26-23 1136

Received at Laboratory By: OCT 26 2023 1350

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Page 1 of 1

Printed: 10/18/2023 2:27:27PM

Sample Kit Prepared By:	Date/Time
Sample Temp (°C):	2
Samples on Ice?	(Yes) No NA
Approved By:	JNF
Entered By:	[signature]

Report Template: w

M.J. Reider Associates, Inc.
ENVIRONMENTAL TESTING LABORATORY
U.S. EPA/PA DEP #06-00003

Certificate of Analysis

Laboratory No.: 2341944
Report: 10/26/23
Lab Contact: Richard A Wheeler

Attention: Nathan Laucks
Reported To: INFRAMARK - Lititz Services (Lititz), 50 Lititz Run Road Lititz, PA 17543

Project: NPDES - Se & Zn

Lab ID: 2341944-01 **Collected By:** Client **Sampled:** 10/22/23 07:20 **Received:** 10/24/23 14:14
Sample Desc: Effluent Comp **Sample Type:** Composite
Composite Begin: 10/21/23 7:18

	Result	Unit	MDL	Rep. Limit	Analysis Method	Analyzed	Notes	Analyst
Total Metals								
Selenium	0.0008	mg/l	0.0003	0.001	EPA 200.8 Rev 5.4	10/26/23	J	MPB
Zinc	0.126	mg/l	0.001	0.005	EPA 200.8 Rev 5.4	10/26/23		MPB

Preparation Methods

Specific Method	Preparation Method	Prep Batch	Prepared Date	Prepared By
2341944-01				
Total Metals				
EPA 200.8 Rev 5.4	EPA 200.2 Rev 2.8	B3J1685	10/25/2023	HRG

Notes and Definitions

J Estimated value.

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WORK ORDER
Chain of Custody

2341950

Client Code: 0988
Client: INFRAMARK - Lititz
Project Manager: Richard A Wheeler
Project: NPDES - Se & Zn
Report To: INFRAMARK - Lititz - Nathan Laucks - Services (Lititz), 50 Lititz Run Road, Lititz, PA 17543
Invoice To: INFRAMARK - Lititz - Nathan Laucks - Services (Lititz), 50 Lititz Run Road, Lititz, PA 17543

Collected By : (Full Name) [signature]

Comments:

2341950-01 Effluent Comp

Matrix: Non-Potable Water **Type:** Composite (Detailed) Date/Time: 10-31-23/ 0734

Composite Sample Start Date & Time: 10-30-23/ 0730 Equipment ID: eff. Set Up Initials: JZ

Se EPA 200.8, Zn EPA 200.8

A - Pl 500ml HNO3

Relinquished By	Date/Time	Received By	Date/Time
[signature]	10-31-23/ 1047	[signature]	10/31/23 1049
		[signature]	10/31/23 1450

Received at Laboratory By

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Page 1 of 1

Printed: 10/18/2023 2:27:31PM

Sample Kit Prepared By:	Date/Time
Sample Temp (°C):	2.0
Samples on Ice?	(Yes) No NA
Approved By:	SGR
Entered By:	[signature]

Report Template

M.J. Reider Associates, Inc.
ENVIRONMENTAL TESTING LABORATORY
U.S. EPA/PA DEP #06-00003

Certificate of Analysis

Laboratory No.: 2341944
Report: 10/26/23
Lab Contact: Richard A Wheeler

Attention: Nathan Laucks
Reported To: INFRAMARK - Lititz Services (Lititz), 50 Lititz Run Road Lititz, PA 17543

Project: NPDES - Se & Zn

Lab ID: 2341944-01 **Collected By:** Client **Sampled:** 10/22/23 07:20 **Received:** 10/24/23 14:14
Sample Desc: Effluent Comp **Sample Type:** Composite
Composite Begin: 10/21/23 7:18

	Result	Unit	MDL	Rep. Limit	Analysis Method	Analyzed	Notes	Analyst
Total Metals								
Selenium	0.0008	mg/l	0.0003	0.001	EPA 200.8 Rev 5.4	10/26/23	J	MPB
Zinc	0.126	mg/l	0.001	0.005	EPA 200.8 Rev 5.4	10/26/23		MPB

Preparation Methods

Specific Method	Preparation Method	Prep Batch	Prepared Date	Prepared By
2341944-01				
Total Metals				
EPA 200.8 Rev 5.4	EPA 200.2 Rev 2.8	B3J1685	10/25/2023	HRG

Notes and Definitions

J Estimated value.

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WORK ORDER
Chain of Custody

2341947

Client Code: 0988 **Client:** INFRAMARK - Lititz
Project Manager: Richard A Wheeler **Project:** NPDES - Se & Zn
Report To: INFRAMARK - Lititz - Nathan Laucks - Services (Lititz), 50 Lititz Run Road, Lititz, PA 17543
Invoice To: INFRAMARK - Lititz - Nathan Laucks - Services (Lititz), 50 Lititz Run Road, Lititz, PA 17543

Collected By : (Full Name) Jmd Gleiee **Comments:**

2341947-01 Effluent Comp **Matrix:** Non-Potable Water **Type:** Composite (Detailed) Date/Time: 11-1-23 / 0736

Composite Sample Start Date & Time: 10-31-23/ 0735 Equipment ID: eff. Set Up Initials: JR

Se EPA 200.8, Zn EPA 200.8 A - Pl 500ml HNO3

Relinquished By	Date/Time	Received By	Date/Time
Jmd Gleiee	11-2-23/1149		11/2/23 1149
			11/2/23 1340

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Page 1 of 1 Printed: 10/18/2023 2:27:26PM

Sample Kit Prepared By:	Date/Time
Sample Temp (°C):	5.0
Samples on Ice?	(Yes) No NA
Approved By:	
Entered By:	LEC

Report Template: Page 2 of 3

M.J. Reider Associates, Inc.
ENVIRONMENTAL TESTING LABORATORY
U.S. EPA/PA DEP #06-00003

Certificate of Analysis

Laboratory No.: 2341944
Report: 10/26/23
Lab Contact: Richard A Wheeler

Attention: Nathan Laucks
Reported To: INFRAMARK - Lititz Services (Lititz), 50 Lititz Run Road Lititz, PA 17543

Project: NPDES - Se & Zn

Lab ID: 2341944-01 **Collected By:** Client **Sampled:** 10/22/23 07:20 **Received:** 10/24/23 14:14
Sample Desc: Effluent Comp **Sample Type:** Composite
Composite Begin: 10/21/23 7:18

	Result	Unit	MDL	Rep. Limit	Analysis Method	Analyzed	Notes	Analyst
Total Metals								
Selenium	0.0008	mg/l	0.0003	0.001	EPA 200.8 Rev 5.4	10/26/23	J	MPB
Zinc	0.126	mg/l	0.001	0.005	EPA 200.8 Rev 5.4	10/26/23		MPB

Preparation Methods

Specific Method	Preparation Method	Prep Batch	Prepared Date	Prepared By
2341944-01				
Total Metals				
EPA 200.8 Rev 5.4	EPA 200.2 Rev 2.8	B3J1685	10/25/2023	HRG

Notes and Definitions

J Estimated value.

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WORK ORDER
Chain of Custody

2341949

Client Code: 0988 **Client:** INFRAMARK - Lititz
Project Manager: Richard A Wheeler **Project:** NPDES - Se & Zn
Report To: INFRAMARK - Lititz - Nathan Laucks - Services (Lititz), 50 Lititz Run Road, Lititz, PA 17543
Invoice To: INFRAMARK - Lititz - Nathan Laucks - Services (Lititz), 50 Lititz Run Road, Lititz, PA 17543

Collected By : (Full Name) Jmd Rhell **Comments:**

2341949-01 Effluent Comp **Matrix:** Non-Potable Water **Type:** Composite (Detailed) Date/Time: 11-2-23/0740

Composite Sample Start Date & Time: 11-1-23/0736 Equipment ID: eff. Set Up Initials: JR

Se EPA 200.8, Zn EPA 200.8 A - Pl 500ml HNO3

Relinquished By	Date/Time	Received By	Date/Time
Jmd Rhell	11-2-23/1149		11/2/23 1149
		Received at Laboratory By	11/2/23 1340

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Page 1 of 1 Printed: 10/18/2023 2:27:29PM

Sample Kit Prepared By:	Date/Time
Sample Temp (°C):	5.6
Samples on Ice?	(Yes) No NA
Approved By:	JR
Entered By:	LEC/CMM

Report Template: Page 2 of 3

M.J. Reider Associates, Inc.
ENVIRONMENTAL TESTING LABORATORY
U.S. EPA/PA DEP #06-00003

Certificate of Analysis

Laboratory No.: 2341944
Report: 10/26/23
Lab Contact: Richard A Wheeler

Attention: Nathan Laucks
Reported To: INFRAMARK - Lititz Services (Lititz), 50 Lititz Run Road Lititz, PA 17543

Project: NPDES - Se & Zn

Lab ID: 2341944-01 **Collected By:** Client **Sampled:** 10/22/23 07:20 **Received:** 10/24/23 14:14
Sample Desc: Effluent Comp **Sample Type:** Composite
Composite Begin: 10/21/23 7:18

	Result	Unit	MDL	Rep. Limit	Analysis Method	Analyzed	Notes	Analyst
Total Metals								
Selenium	0.0008	mg/l	0.0003	0.001	EPA 200.8 Rev 5.4	10/26/23	J	MPB
Zinc	0.126	mg/l	0.001	0.005	EPA 200.8 Rev 5.4	10/26/23		MPB

Preparation Methods

Specific Method	Preparation Method	Prep Batch	Prepared Date	Prepared By
2341944-01				
Total Metals				
EPA 200.8 Rev 5.4	EPA 200.2 Rev 2.8	B3J1685	10/25/2023	HRG

Notes and Definitions

J Estimated value.

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WORK ORDER
Chain of Custody

2341951

Client Code: 0988
Client: INFRAMARK - Lititz
Project Manager: Richard A Wheeler
Project: NPDES - Se & Zn
Report To: INFRAMARK - Lititz - Nathan Laucks - Services (Lititz), 50 Lititz Run Road, Lititz, PA 17543
Invoice To: INFRAMARK - Lititz - Nathan Laucks - Services (Lititz), 50 Lititz Run Road, Lititz, PA 17543

Collected By : (Full Name) Jmd Hilbish
Comments:

2341951-01 Effluent Comp

Matrix: Non-Potable Water **Type:** Composite (Detailed) Date/Time: 11-7-23/ 0751

Composite Sample Start Date & Time: 11-6-23/ 0751 Equipment ID: eff. Set Up Initials: JR

Se EPA 200.8, Zn EPA 200.8

A - Pl 500ml HNO3

Relinquished By	Date/Time	Received By	Date/Time
Jmd Hilbish	11-7-23/1108		11-7-23 1108
		NOV 07 2023	1300

Relinquished By / Date/Time / Received at Laboratory By / Date/Time

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Page 1 of 1

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Sample Kit Prepared By:	Date/Time
Sample Temp (°C):	2
Samples on Ice?	(Yes) No NA
Approved By:	JPF
Entered By:	CMC

Report Template: Page 2 of 3

M.J. Reider Associates, Inc.
ENVIRONMENTAL TESTING LABORATORY
U.S. EPA/PA DEP #06-00003

Certificate of Analysis

Laboratory No.: 2341944
Report: 10/26/23
Lab Contact: Richard A Wheeler

Attention: Nathan Laucks
Reported To: INFRAMARK - Lititz Services (Lititz), 50 Lititz Run Road Lititz, PA 17543

Project: NPDES - Se & Zn

Lab ID: 2341944-01 **Collected By:** Client **Sampled:** 10/22/23 07:20 **Received:** 10/24/23 14:14
Sample Desc: Effluent Comp **Sample Type:** Composite
Composite Begin: 10/21/23 7:18

	Result	Unit	MDL	Rep. Limit	Analysis Method	Analyzed	Notes	Analyst
Total Metals								
Selenium	0.0008	mg/l	0.0003	0.001	EPA 200.8 Rev 5.4	10/26/23	J	MPB
Zinc	0.126	mg/l	0.001	0.005	EPA 200.8 Rev 5.4	10/26/23		MPB

Preparation Methods

Specific Method	Preparation Method	Prep Batch	Prepared Date	Prepared By
2341944-01				
Total Metals				
EPA 200.8 Rev 5.4	EPA 200.2 Rev 2.8	B3J1685	10/25/2023	HRG

Notes and Definitions

J Estimated value.

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WORK ORDER
Chain of Custody

2341953

Client Code: 0988
Project Manager: Richard A Wheeler
Client: INFRAMARK - Lititz
Project: NPDES - Se & Zn
Report To: INFRAMARK - Lititz - Nathan Laucks - Services (Lititz), 50 Lititz Run Road, Lititz, PA 17543
Invoice To: INFRAMARK - Lititz - Nathan Laucks - Services (Lititz), 50 Lititz Run Road, Lititz, PA 17543

Collected By : (Full Name) Joe Ingalls
Comments:

2341953-01 Effluent Comp
Matrix: Non-Potable Water **Type:** Composite (Detailed) Date/Time: 11-8-23 0727
Composite Sample Start Date & Time: 11-7-23 0752 Equipment ID: Eff Set Up Initials: JF
Se EPA 200.8, Zn EPA 200.8
A - Pl 500ml HNO3

Relinquished By	11-9-23 1335 Date/Time	Received By	11-9-23 1335 Date/Time
Relinquished By	Date/Time	Received By	Date/Time
Relinquished By	Date/Time	Received at Laboratory By	NOV 09 2023 1520 Date/Time

The Client, by signing (or having the client's agent sign), agrees to MJRA's Terms and Conditions and to pay for the above requested services including any additional associated fees incurred.

Page 1 of 1

Printed: 10/18/2023 2:27:37PM

Sample Kit Prepared By:	Date/Time
Sample Temp (°C):	2
Samples on Ice?	Yes No NA
Approved By:	JPE
Entered By:	

Report Template

M.J. Reider Associates, Inc.
ENVIRONMENTAL TESTING LABORATORY
U.S. EPA/PA DEP #06-00003

Certificate of Analysis

Laboratory No.: 2341944
Report: 10/26/23
Lab Contact: Richard A Wheeler

Attention: Nathan Laucks
Reported To: INFRAMARK - Lititz Services (Lititz), 50 Lititz Run Road Lititz, PA 17543

Project: NPDES - Se & Zn

Lab ID: 2341944-01 **Collected By:** Client **Sampled:** 10/22/23 07:20 **Received:** 10/24/23 14:14
Sample Desc: Effluent Comp **Sample Type:** Composite
Composite Begin: 10/21/23 7:18

	Result	Unit	MDL	Rep. Limit	Analysis Method	Analyzed	Notes	Analyst
Total Metals								
Selenium	0.0008	mg/l	0.0003	0.001	EPA 200.8 Rev 5.4	10/26/23	J	MPB
Zinc	0.126	mg/l	0.001	0.005	EPA 200.8 Rev 5.4	10/26/23		MPB

Preparation Methods

Specific Method	Preparation Method	Prep Batch	Prepared Date	Prepared By
2341944-01				
Total Metals				
EPA 200.8 Rev 5.4	EPA 200.2 Rev 2.8	B3J1685	10/25/2023	HRG

Notes and Definitions

J Estimated value.

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WORK ORDER
Chain of Custody

2341952

Client Code: 0988
Project Manager: Richard A Wheeler
Client: INFRAMARK - Lititz
Project: NPDES - Se & Zn
Report To: INFRAMARK - Lititz - Nathan Laucks - Services (Lititz), 50 Lititz Run Road, Lititz, PA 17543
Invoice To: INFRAMARK - Lititz - Nathan Laucks - Services (Lititz), 50 Lititz Run Road, Lititz, PA 17543

Collected By : (Full Name) Joseph Fiorelli

Comments:

2341952-01 Effluent Comp

Matrix: Non-Potable Water **Type:** Composite (Detailed) Date/Time: 11-9-23 0726

Composite Sample Start Date & Time: 11-8-23 0725 Equipment ID: EFF Set Up Initials: JI

Se EPA 200.8, Zn EPA 200.8

A - Pl 500ml HNO3

Relinquished By	Date/Time	Received By	Date/Time
	11-9-23 1335		11-9-23 1335
Relinquished By	Date/Time	Received By	Date/Time
Relinquished By	Date/Time	Received at Laboratory By	Date/Time
		NOV 09 2023 1520	

Sample Kit Prepared By:	Date/Time
Sample Temp (°C):	2
Samples on Ice?	(Yes) No NA
Approved By:	JAP
Entered By:	CMM

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Page 1 of 1

Printed: 10/18/2023 2:27:35PM

Report Template: Page 2 of 3

Lititz WWTP permit renewal extra sampling 2023

October		4,4'-DDT	units		3,3-Dichlorobenzidine	units		Bis(2-Ethylhexyl)phthalate	units	Antimony	units		Cadmium	units	Cobalt	units		Thallium	units
1																			
2																			
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			
11																			
12																			
13																			
14																			
15																			
16																			
17																			
18																			
19																			
20																			
21																			
22	<	0.004	ug/l	<	1.1	ug/l	<	3.1	ug/l	0.0004	mg/l	<	0.0002	mg/l	0.0003	mg/l	<	0.0001	mg/l
23																			
24																			
25	<	0.004	ug/l	<	1.1	ug/l	<	3.1	ug/l	0.0005	mg/l	<	0.0002	mg/l	0.0003	mg/l	<	0.0001	mg/l
26																			
27																			
28																			
29																			
30	<	0.004	ug/l	<	1.1	ug/l	<	3.1	ug/l	0.0005	mg/l	<	0.0002	mg/l	0.0002	mg/l	<	0.0001	mg/l
31																			
min	<	0.004	ug/l	<	1.1	ug/l	<	3.1	ug/l	0.0004	mg/l	<	0.0002	mg/l	0.0002	mg/l	<	0.0001	mg/l
max	<	0.004	ug/l	<	1.1	ug/l	<	3.1	ug/l	0.0005	mg/l	<	0.0002	mg/l	0.0003	mg/l	<	0.0001	mg/l
average	<	0.004	ug/l	<	1.1	ug/l	<	3.1	ug/l	0.0005	mg/l	<	0.0002	mg/l	0.000267	mg/l	<	0.0001	mg/l

M.J. Reider Associates, Inc.
ENVIRONMENTAL TESTING LABORATORY
U.S. EPA/PA DEP #06-00003

Certificate of Analysis

Laboratory No.: 2341944
Report: 10/26/23
Lab Contact: Richard A Wheeler

Attention: Nathan Laucks
Reported To: INFRAMARK - Lititz Services (Lititz), 50 Lititz Run Road Lititz, PA 17543

Project: NPDES - Se & Zn

Lab ID: 2341944-01 **Collected By:** Client **Sampled:** 10/22/23 07:20 **Received:** 10/24/23 14:14
Sample Desc: Effluent Comp **Sample Type:** Composite
Composite Begin: 10/21/23 7:18

	Result	Unit	MDL	Rep. Limit	Analysis Method	Analyzed	Notes	Analyst
Total Metals								
Selenium	0.0008	mg/l	0.0003	0.001	EPA 200.8 Rev 5.4	10/26/23	J	MPB
Zinc	0.126	mg/l	0.001	0.005	EPA 200.8 Rev 5.4	10/26/23		MPB

Preparation Methods

Specific Method	Preparation Method	Prep Batch	Prepared Date	Prepared By
2341944-01				
Total Metals				
EPA 200.8 Rev 5.4	EPA 200.2 Rev 2.8	B3J1685	10/25/2023	HRG

Notes and Definitions

J Estimated value.

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WORK ORDER
Chain of Custody

2341961

Client Code: 0988
Client: INFRAMARK - Lititz
Project Manager: Richard A Wheeler
Project: NPDES NPW Permit Renewal - Resamples
Report To: INFRAMARK - Lititz - Nathan Laucks - Services (Lititz), 50 Lititz Run Road, Lititz, PA 17543
Invoice To: INFRAMARK - Lititz - Nathan Laucks - Services (Lititz), 50 Lititz Run Road, Lititz, PA 17543

Collected By : (Full Name) Joe Iglicki
Comments:

2341961-01 Effluent Comp

Matrix: Non-Potable Water **Type:** Composite (Detailed) Date/Time: 10-23-23 0725

Composite Sample Start Date & Time: 10-22-23 0722 Equipment ID: ECC Set Up Initials: JG

Cd EPA 200.8, Co EPA 200.8, Pesticides EPA 608.3, Sb EPA 200.8, Semi-VOA EPA 625.1 NPDES, Tl EPA 200.8

A - Pl 500ml HNO3
B - AG Liter NM NP
C - AG Liter NM NP
D - AG Liter NM NP
E - AG Liter NM NP
F - AG Liter NM NP

Relinquished By	Date/Time	Received By	Date/Time
	10-24-23 1235		10-24-23 1235
		OCT 24 2023	14:4

Received at Laboratory By

Sample Kit Prepared By:	Date/Time
Sample Temp (°C):	3
Samples on Ice?	Yes No NA
Approved By:	SPF
Entered By:	CML

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Page 1 of 1

Printed: 10/18/2023 2:29:49PM

Report Template

Page 2 of 3

M.J. Reider Associates, Inc.
ENVIRONMENTAL TESTING LABORATORY
U.S. EPA/PA DEP #06-00003

Certificate of Analysis

Laboratory No.: 2341944
Report: 10/26/23
Lab Contact: Richard A Wheeler

Attention: Nathan Laucks
Reported To: INFRAMARK - Lititz Services (Lititz), 50 Lititz Run Road Lititz, PA 17543

Project: NPDES - Se & Zn

Lab ID: 2341944-01 **Collected By:** Client **Sampled:** 10/22/23 07:20 **Received:** 10/24/23 14:14
Sample Desc: Effluent Comp **Sample Type:** Composite
Composite Begin: 10/21/23 7:18

	Result	Unit	MDL	Rep. Limit	Analysis Method	Analyzed	Notes	Analyst
Total Metals								
Selenium	0.0008	mg/l	0.0003	0.001	EPA 200.8 Rev 5.4	10/26/23	J	MPB
Zinc	0.126	mg/l	0.001	0.005	EPA 200.8 Rev 5.4	10/26/23		MPB

Preparation Methods

Specific Method	Preparation Method	Prep Batch	Prepared Date	Prepared By
2341944-01				
Total Metals				
EPA 200.8 Rev 5.4	EPA 200.2 Rev 2.8	B3J1685	10/25/2023	HRG

Notes and Definitions

J Estimated value.

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WORK ORDER
Chain of Custody

2341959

Client Code: 0988
Client: INFRAMARK - Lititz
Project Manager: Richard A Wheeler
Project: NPDES NPW Permit Renewal - Resamples
Report To: INFRAMARK - Lititz - Nathan Laucks - Services (Lititz), 50 Lititz Run Road, Lititz, PA 17543
Invoice To: INFRAMARK - Lititz - Nathan Laucks - Services (Lititz), 50 Lititz Run Road, Lititz, PA 17543

Collected By : (Full Name) Jared Gilbert

Comments:

2341959-01 Effluent Comp

Matrix: Non-Potable Water **Type:** Composite (Detailed) Date/Time: 10-26-23/ 0751

Composite Sample Start Date & Time: 10-25-23/ 0738 Equipment ID: eff. Set Up Initials: JG

Cd EPA 200.8, Co EPA 200.8, Pesticides EPA 608.3, Sb EPA 200.8, Semi-VOA EPA 625.1 NPDES, Tl EPA 200.8

A - Pl 500ml HNO3
B - AG Liter NM NP
C - AG Liter NM NP
D - AG Liter NM NP
E - AG Liter NM NP
F - AG Liter NM NP

Relinquished By	Date/Time	Received By	Date/Time
Jared Gilbert	10-26-23/1136	[signature]	10-26-23 1136
		OCT 26 2023 1350	

Received at Laboratory By

Sample Kit Prepared By:	Date/Time
Sample Temp (°C):	2
Samples on Ice?	(Yes) No NA
Approved By:	MF
Entered By:	

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Printed: 10/18/2023 2:29:45PM

Report Template: w

M.J. Reider Associates, Inc.
ENVIRONMENTAL TESTING LABORATORY
U.S. EPA/PA DEP #06-00003

Certificate of Analysis

Laboratory No.: 2341960
Report: 11/17/23
Lab Contact: Richard A Wheeler

Attention: Nathan Laucks
Reported To: INFRAMARK - Lititz Services (Lititz), 50 Lititz Run Road Lititz, PA 17543

Project Info: NPDES NPW Permit Renewal - Resamples

Lab ID: 2341960-01 **Collected By:** Client **Sampled:** 10/31/23 07:34 **Received:** 10/31/23 14:50
Sample Desc: Effluent Comp **Sample Type:** Composite
Composite Begin: 10/30/23 7:30

	Result	Unit	Rep. Limit	Analysis Method	Analyzed	Notes	Analyst
Organics							
4,4'-DDT	<0.004	ug/l	0.036	EPA 608.3	11/16/23	U	TWH
Semivolatiles							
3,3-Dichlorobenzidine	<1.1	ug/l	5.0	EPA 625.1	11/10/23	U	EJR
Bis(2-Ethylhexyl)phthalate	<3.1	ug/l	5.0	EPA 625.1	11/10/23	U	EJR
Total Metals							
Antimony	0.0005	mg/l	0.003	EPA 200.8 Rev 5.4	11/01/23	J	MPB
Cadmium	<0.0002	mg/l	0.0010	EPA 200.8 Rev 5.4	11/01/23		MPB
Cobalt	0.0002	mg/l	0.005	EPA 200.8 Rev 5.4	11/01/23	J	MPB
Thallium	<0.0001	mg/l	0.003	EPA 200.8 Rev 5.4	11/01/23	U	MPB

Preparation Methods

Specific Method	Preparation Method	Prep Batch	Prepared Date	Prepared By
2341960-01				
Organics				
EPA 608.3	EPA 3510 C	B3K0309	11/06/2023	BKM
Semivolatiles				
EPA 625.1	EPA 3510 C	B3K0404	11/07/2023	JLS
Total Metals				
EPA 200.8 Rev 5.4	EPA 200.2 Rev 2.8	B3K0003	11/01/2023	HRG

Notes and Definitions

J Estimated value.
U Analyte was not detected above the indicated value.

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WORK ORDER
Chain of Custody

2341960

Client Code: 0988
Client: INFRAMARK - Lititz
Project Manager: Richard A Wheeler
Project: NPDES NPW Permit Renewal - Resamples
Report To: INFRAMARK - Lititz - Nathan Laucks - Services (Lititz), 50 Lititz Run Road, Lititz, PA 17543
Invoice To: INFRAMARK - Lititz - Nathan Laucks - Services (Lititz), 50 Lititz Run Road, Lititz, PA 17543

Collected By : (Full Name) [signature]
Comments:

2341960-01 Effluent Comp

Matrix: Non-Potable Water **Type:** Composite (Detailed) Date/Time: 10-31-23/ 0734

Composite Sample Start Date & Time: 10-30-23/ 0730 Equipment ID: eff Set Up Initials: JSR

Cd EPA 200.8, Co EPA 200.8, Pesticides EPA 608.3, Sb EPA 200.8, Tl EPA 200.8, Semi-VOA EPA 625.1 NPDES

A - Pl 500ml HNO3
B - AG Liter NM NP
C - AG Liter NM NP
D - AG Liter NM NP
E - AG Liter NM NP
F - AG Liter NM NP

Relinquished By	Date/Time	Received By	Date/Time
[signature]	10-31-23/1049	[signature]	10/31/23 1049
		[signature]	10/31/23 1450

Received at Laboratory By

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Page 1 of 1

Printed: 10/18/2023 2:29:47PM

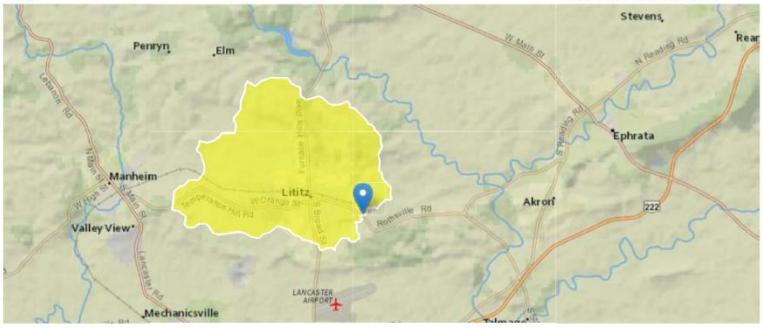
Sample Kit Prepared By:	Date/Time
Sample Temp (°C):	2.0
Samples on Ice?	(Yes) No NA
Approved By:	JSR
Entered By:	[signature]

Report Template:

Page 2 of 3

Lititz Borough Authority PA0020320 Outfall 001

Region ID:	PA
Workspace ID:	PA20231006123128644000
Clicked Point (Latitude, Longitude):	40.15139, -76.28511
Time:	2023-10-06 08:31:53 -0400



Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
BSLOPD	Mean basin slope measured in degrees	2.2019	degrees
DRNAREA	Area that drains to a point on a stream	12.6	square miles
ROCKDEP	Depth to rock	5	feet
URBAN	Percentage of basin with urban development	16.7691	percent

Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 1]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	12.6	square miles	4.78	1150
BSLOPD	Mean Basin Slope degrees	2.2019	degrees	1.7	6.4
ROCKDEP	Depth to Rock	5	feet	4.13	5.21
URBAN	Percent Urban	16.7691	percent	0	89

Low-Flow Statistics Flow Report [Low Flow Region 1]

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

Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	1.65	ft^3/s	46	46
30 Day 2 Year Low Flow	2.44	ft^3/s	38	38
7 Day 10 Year Low Flow	0.672	ft^3/s	51	51
30 Day 10 Year Low Flow	1.01	ft^3/s	46	46
90 Day 10 Year Low Flow	2.13	ft^3/s	41	41

Low-Flow Statistics Citations

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

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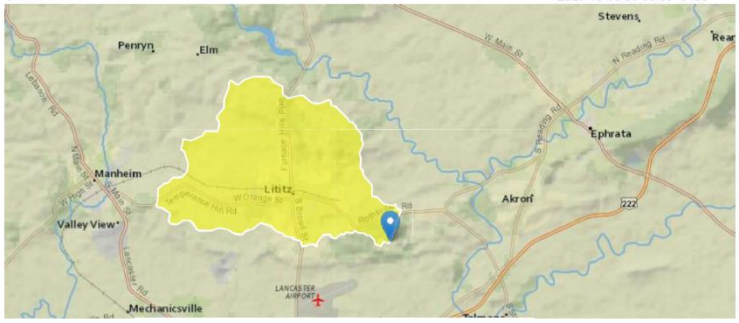
Application Version: 4.17.0
StreamStats Services Version: 1.2.22
NSS Services Version: 2.2.1

Lititz Borough Authority PA0020320 Downstream Point RMI = 3.1

Region ID:	PA
Workspace ID:	PA20231006123634451000
Clicked Point (Latitude, Longitude):	40.14122, -76.26473
Time:	2023-10-06 08:36:58 -0400



Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
BSLOPD	Mean basin slope measured in degrees	2.4222	degrees
DRNAREA	Area that drains to a point on a stream	13.6	square miles
ROCKDEP	Depth to rock	4.8	feet
URBAN	Percentage of basin with urban development	16.0791	percent

Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 1]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	13.6	square miles	4.78	1150
BSLOPD	Mean Basin Slope degrees	2.4222	degrees	1.7	6.4
ROCKDEP	Depth to Rock	4.8	feet	4.13	5.21
URBAN	Percent Urban	16.0791	percent	0	89

Low-Flow Statistics Flow Report [Low Flow Region 1]

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

Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	1.67	ft^3/s	46	46
30 Day 2 Year Low Flow	2.47	ft^3/s	38	38
7 Day 10 Year Low Flow	0.677	ft^3/s	51	51
30 Day 10 Year Low Flow	1.03	ft^3/s	46	46
90 Day 10 Year Low Flow	2.12	ft^3/s	41	41

Low-Flow Statistics Citations

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

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Application Version: 4.17.0

StreamStats Services Version: 1.2.22

NSS Services Version: 2.2.1

TRC_CALC

1A	B	C	D	E	F	G
2	**TRC EVALUATION**					
3	Input appropriate values in B4:B8 and E4:E7					
4	1.51	= Q stream (cfs)		0.5	= CV Daily	
5	3.85	= Q discharge (MGD)		0.5	= CV Hourly	
6	30	= no. samples		1	= AFC_Partial Mix Factor	
7	0.3	= Chlorine Demand of Stream		1	= CFC_Partial Mix Factor	
8	0	= Chlorine Demand of Discharge		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 = 0.100		1.3.2.iii	WLA cfc = 0.090
12	PENTOXSD TRG	5.1a	LTAMULT afc = 0.373		5.1c	LTAMULT cfc = 0.581
13	PENTOXSD TRG	5.1b	LTA_afc= 0.037		5.1d	LTA_cfc = 0.052
14						
15	Source		Effluent Limit Calculations			
16	PENTOXSD TRG	5.1f	AML MULT = 1.231			
17	PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.046		AFC	
18			INST MAX LIMIT (mg/l) = 0.150			

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)**

Page 1

WET Summary and Evaluation

Facility Name	Lititz Sewer Authority WWTP
Permit No.	PA0020320
Design Flow (MGD)	3.85
Q_{7-10} Flow (cfs)	1.51
PMF_a	1
PMF_c	1

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	**Endpoint**	5/18/21	8/31/21	12/7/21	2/8/22
Pimephales	Survival	PASS	PASS	PASS	PASS

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	**Endpoint**	5/18/21	8/31/21	12/7/21	2/8/22
Pimephales	Growth	PASS	PASS	PASS	PASS

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	**Endpoint**	5/18/21	8/30/21	12/6/21	3/1/22
Ceriodaphnia	Survival	PASS	PASS	PASS	PASS

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	**Endpoint**	5/18/21	8/30/21	12/6/21	3/1/22
Ceriodaphnia	Reproduction	PASS	PASS	PASS	PASS

Reasonable Potential? NO

Permit Recommendations

Test Type	**Chronic**
TIWC	**80** % Effluent
Dilution Series	**20, 40, 80, 90, 100** % Effluent
Permit Limit	**None**
Permit Limit Species	

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
07J	7646	LITITZ RUN	**4.600**	349.00	12.60	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	0.100	0.00	0.67	0.000	0.000	0.0	0.00	0.00	20.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
Lititz Boro	PA0020320	3.8500	3.8500	3.8500	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	25.00	0.00	0.00	0.70

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
07J	7646	LITITZ RUN	**3.100**	334.00	13.60	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	0.100	0.00	0.68	0.000	0.000	0.0	0.00	0.00	20.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
		0.0000	0.0000	0.0000	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	3.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
07J	7646	LITITZ 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												
4.600	0.67	0.00	0.67	5.9559	0.00189	.677	30.58	45.16	0.32	0.286	24.49	7.00
Q1-10 Flow												
4.600	0.43	0.00	0.43	5.9559	0.00189	NA	NA	NA	0.31	0.292	24.66	7.00
Q30-10 Flow												
4.600	0.91	0.00	0.91	5.9559	0.00189	NA	NA	NA	0.33	0.281	24.33	7.00

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 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
07J	7646	LITITZ 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
4.600	Lititz Boro	11.39	12.21	11.39	12.21	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
4.600	Lititz Boro	1.43	1.65	1.43	1.65	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)		
4.60	Lititz Boro	12.96	12.96	1.65	1.65	5	5	0	0

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WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
07J	7646	LITITZ RUN

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
4.600	3.850	24.493	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
30.577	0.677	45.155	0.320
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
11.85	0.762	1.48	0.989
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
5.329	6.409	Tsivoglou	5
Reach Travel Time (days)			
0.286			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.029	11.53	1.44	5.25
0.057	11.23	1.40	5.20
0.086	10.93	1.36	5.18
0.115	10.64	1.32	5.17
0.143	10.36	1.28	5.18
0.172	10.08	1.25	5.20
0.200	9.82	1.21	5.24
0.229	9.56	1.18	5.28
0.258	9.30	1.15	5.33
0.286	9.06	1.11	5.38

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WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
07J	7646	LITITZ 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)
4.600	Lititz Boro	PA0020320	3.850	CBOD5	12.96		
				NH3-N	1.65	3.3	
				Dissolved Oxygen			5

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Toxics Management Spreadsheet
Version 1.4, May 2023

Discharge Information

Instructions | Discharge | Stream

Facility: **Lititz Sewer Authority WWTP** NPDES Permit No.: **PA0020320** Outfall No.: **001**

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

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
3.85	364	7.88						

					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		12,200									
	Chloride (PWS)	mg/L		637									
	Bromide	mg/L		3									
	Sulfate (PWS)	mg/L		58.6									
	Fluoride (PWS)	mg/L											
Group 2	Total Aluminum	µg/L	<	20									
	Total Antimony	µg/L		0.5									
	Total Arsenic	µg/L	<	1									
	Total Barium	µg/L		38									
	Total Beryllium	µg/L		1									
	Total Boron	µg/L	<	200									
	Total Cadmium	µg/L	<	0.2									
	Total Chromium (III)	µg/L		1.3									
	Hexavalent Chromium	µg/L	<	0.25									
	Total Cobalt	µg/L	<	0.3									
	Total Copper	µg/L		0.008									
	Free Cyanide	µg/L	<	1									
	Total Cyanide	µg/L	<	10									
	Dissolved Iron	µg/L		20									
	Total Iron	µg/L		30									
	Total Lead	µg/L											
	Total Manganese	µg/L											
	Total Mercury	µg/L	<	0.2									
	Total Nickel	µg/L		3.2									
	Total Phenols (Phenolics) (PWS)	µg/L		5									
	Total Selenium	µg/L		0.9									
	Total Silver	µg/L	<	1									
	Total Thallium	µg/L	<	0.1									
	Total Zinc	µg/L		99									
	Total Molybdenum	µg/L	<	3									
	Acrolein	µg/L	<	2									
	Acrylamide	µg/L	<										
	Acrylonitrile	µg/L	<	2									
	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		0.5									
	Chloroethane	µg/L	<	0.5									
	2-Chloroethyl Vinyl Ether	µg/L	<	5									
	Chloroform	µg/L		0.5									
	Dichlorobromomethane	µg/L		0.5									
	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	<	5									
	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	<	0.5									
	1,1,1-Trichloroethane	µg/L	<	0.5									
	1,1,2-Trichloroethane	µg/L	<	0.5									
	Trichloroethylene	µg/L	<	0.5									
	Vinyl Chloride	µg/L	<	0.5									
Group 4	2-Chlorophenol	µg/L	<	10									
	2,4-Dichlorophenol	µg/L	<	10									
	2,4-Dimethylphenol	µg/L	<	10									
	4,6-Dinitro-o-Cresol	µg/L	<	10									
	2,4-Dinitrophenol	µg/L	<	10									
	2-Nitrophenol	µg/L	<	10									
	4-Nitrophenol	µg/L	<	10									
	p-Chloro-m-Cresol	µg/L	<	10									
	Pentachlorophenol	µg/L	<	10									
	Phenol	µg/L	<	10									
	2,4,6-Trichlorophenol	µg/L	<	10									
Group 5	Acenaphthene	µg/L	<	2.5									
	Acenaphthylene	µg/L	<	2.5									
	Anthracene	µg/L	<	2.5									
	Benzidine	µg/L	<	50									
	Benzo(a)Anthracene	µg/L	<	2.5									
	Benzo(a)Pyrene	µg/L	<	2.5									
	3,4-Benzofluoranthene	µg/L	<	2.5									
	Benzo(ghi)Perylene	µg/L	<	2.5									
	Benzo(k)Fluoranthene	µg/L	<	2.5									
	Bis(2-Chloroethoxy)Methane	µg/L	<	5									
	Bis(2-Chloroethyl)Ether	µg/L	<	5									
	Bis(2-Chloroisopropyl)Ether	µg/L	<	5									
	Bis(2-Ethylhexyl)Phthalate	µg/L	<	3.1									
	4-Bromophenyl Phenyl Ether	µg/L	<	5									
	Butyl Benzyl Phthalate	µg/L	<	5									
	2-Chloronaphthalene	µg/L	<	5									
	4-Chlorophenyl Phenyl Ether	µg/L	<	5									
	Chrysene	µg/L	<	2.5									
	Dibenzo(a,h)Anthrancene	µg/L	<	2.5									
	1,2-Dichlorobenzene	µg/L	<	0.5									
	1,3-Dichlorobenzene	µg/L	<	0.5									
	1,4-Dichlorobenzene	µg/L	<	0.5									
	3,3-Dichlorobenzidine	µg/L	<	1.1									
	Diethyl Phthalate	µg/L	<	5									
	Dimethyl Phthalate	µg/L	<	5									
	Di-n-Butyl Phthalate	µg/L	<	5									
	2,4-Dinitrotoluene	µg/L	<	5									

	2,6-Dinitrotoluene	µg/L	<	5									
	Di-n-Octyl Phthalate	µg/L	<	5									
	1,2-Diphenylhydrazine	µg/L	<	5									
	Fluoranthene	µg/L	<	2.5									
	Fluorene	µg/L	<	2.5									
	Hexachlorobenzene	µg/L	<	5									
	Hexachlorobutadiene	µg/L	<	0.5									
	Hexachlorocyclopentadiene	µg/L	<	5									
	Hexachloroethane	µg/L	<	5									
	Indeno(1,2,3-cd)Pyrene	µg/L	<	2.5									
	Isophorone	µg/L	<	5									
	Naphthalene	µg/L	<	5									
	Nitrobenzene	µg/L	<	5									
	n-Nitrosodimethylamine	µg/L	<	5									
	n-Nitrosodi-n-Propylamine	µg/L	<	5									
	n-Nitrosodiphenylamine	µg/L	<	5									
	Phenanthrene	µg/L	<	2.5									
	Pyrene	µg/L	<	2.5									
	1,2,4-Trichlorobenzene	µg/L	<	0.5									
Group 6	Aldrin	µg/L	<	0.05									
	alpha-BHC	µg/L	<	0.05									
	beta-BHC	µg/L	<	0.05									
	gamma-BHC	µg/L	<	0.05									
	delta BHC	µg/L	<	0.05									
	Chlordane	µg/L	<	0.5									
	4,4-DDT	µg/L	<	0.004									
	4,4-DDE	µg/L	<	0.05									
	4,4-DDD	µg/L	<	0.05									
	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	<	0.05									
	Heptachlor	µg/L	<	0.05									
	Heptachlor Epoxide	µg/L	<	0.05									
	PCB-1016	µg/L	<										
	PCB-1221	µg/L	<										
	PCB-1232	µg/L	<										
	PCB-1242	µg/L	<										
	PCB-1248	µg/L	<										
	PCB-1254	µg/L	<										
	PCB-1260	µg/L	<										
	PCBs, Total	µg/L	<										
	Toxaphene	µg/L	<	0.5									
	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 1.4, May 2023

Stream / Surface Water Information

Lititz Sewer Authority WWTP, NPDES Permit No. PA0020320, Outfall 001

Instructions | Discharge | *Stream*

Receiving Surface Water Name: **Lititz Run**

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	007646	4.6	349	12.6			Yes
End of Reach 1	007646	3.1	334	13.6			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	4.6	0.12	1.51									364	7		
End of Reach 1	3.1	0.12	1.63									364	7		

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	4.6														
End of Reach 1	3.1														

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Toxics Management Spreadsheet
Version 1.4, May 2023

Model Results

Lititz Sewer Authority WWTP, NPDES Permit No. PA0020320, Outfall 001

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

☐ ***Hydrodynamics***

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 2.280 PMF: 1 Analysis Hardness (mg/l): 364 Analysis pH: 7.51

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	750	750	940	
Total Antimony	0	0		0	1,100	1,100	1,379	
Total Arsenic	0	0		0	340	340	426	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	26,324	
Total Boron	0	0		0	8,100	8,100	10,154	
Total Cadmium	0	0		0	7.060	7.93	9.94	Chem Translator of 0.89 applied
Total Chromium (III)	0	0		0	1641.484	5,195	6,512	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	20.4	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	119	
Total Copper	0	0		0	45.398	47.3	59.3	Chem Translator of 0.96 applied
Free Cyanide	0	0		0	22	22.0	27.6	
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	2.06	Chem Translator of 0.85 applied
Total Nickel	0	0		0	1396.871	1,400	1,755	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	29.683	34.9	43.8	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	81.5	
Total Zinc	0	0		0	350.168	358	449	Chem Translator of 0.978 applied
Acrolein	0	0		0	3	3.0	3.76	
Acrylonitrile	0	0		0	650	650	815	
Benzene	0	0		0	640	640	802	

Bromoform	0	0		0	1,800	1,800	1,800	2,256		
Carbon Tetrachloride	0	0		0	2,800	2,800	2,800	3,510		
Chlorobenzene	0	0		0	1,200	1,200	1,200	1,504		
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	N/A		
2-Chloroethyl Vinyl Ether	0	0		0	18,000	18,000	18,000	22,564		
Chloroform	0	0		0	1,900	1,900	1,900	2,382		
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	N/A		
1,2-Dichloroethane	0	0		0	15,000	15,000	15,000	18,803		
1,1-Dichloroethylene	0	0		0	7,500	7,500	7,500	9,401		
1,2-Dichloropropane	0	0		0	11,000	11,000	11,000	13,789		
1,3-Dichloropropylene	0	0		0	310	310	310	389		
Ethylbenzene	0	0		0	2,900	2,900	2,900	3,635		
Methyl Bromide	0	0		0	550	550	550	689		
Methyl Chloride	0	0		0	28,000	28,000	28,000	35,099		
Methylene Chloride	0	0		0	12,000	12,000	12,000	15,042		
1,1,2,2-Tetrachloroethane	0	0		0	1,000	1,000	1,000	1,254		
Tetrachloroethylene	0	0		0	700	700	700	877		
Toluene	0	0		0	1,700	1,700	1,700	2,131		
1,2-trans-Dichloroethylene	0	0		0	6,800	6,800	6,800	8,524		
1,1,1-Trichloroethane	0	0		0	3,000	3,000	3,000	3,761		
1,1,2-Trichloroethane	0	0		0	3,400	3,400	3,400	4,262		
Trichloroethylene	0	0		0	2,300	2,300	2,300	2,883		
Vinyl Chloride	0	0		0	N/A	N/A	N/A	N/A		
2-Chlorophenol	0	0		0	560	560	560	702		
2,4-Dichlorophenol	0	0		0	1,700	1,700	1,700	2,131		
2,4-Dimethylphenol	0	0		0	660	660	660	827		
4,6-Dinitro-o-Cresol	0	0		0	80	80.0	80.0	100		
2,4-Dinitrophenol	0	0		0	660	660	660	827		
2-Nitrophenol	0	0		0	8,000	8,000	8,000	10,028		
4-Nitrophenol	0	0		0	2,300	2,300	2,300	2,883		
p-Chloro-m-Cresol	0	0		0	160	160	160	201		
Pentachlorophenol	0	0		0	14.597	14.6	18.3			
Phenol	0	0		0	N/A	N/A	N/A			
2,4,6-Trichlorophenol	0	0		0	460	460	577			
Acenaphthene	0	0		0	83	83.0	104			
Anthracene	0	0		0	N/A	N/A	N/A			
Benzidine	0	0		0	300	300	376			
Benzo(a)Anthracene	0	0		0	0.5	0.5	0.63			
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	37,606			
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A			
Bis(2-Ethylhexyl)Phthalate	0	0		0	4,500	4,500	5,641			
4-Bromophenyl Phenyl Ether	0	0		0	270	270	338			
Butyl Benzyl Phthalate	0	0		0	140	140	175			
2-Chloronaphthalene	0	0		0	N/A	N/A	N/A			
Chrysene	0	0		0	N/A	N/A	N/A			

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Dibenzo(a,h)Anthrancene	0	0		0	N/A	N/A	N/A		
1,2-Dichlorobenzene	0	0		0	820	820	1,028		
1,3-Dichlorobenzene	0	0		0	350	350	439		
1,4-Dichlorobenzene	0	0		0	730	730	915		
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A		
Diethyl Phthalate	0	0		0	4,000	4,000	5,014		
Dimethyl Phthalate	0	0		0	2,500	2,500	3,134		
Di-n-Butyl Phthalate	0	0		0	110	110	138		
2,4-Dinitrotoluene	0	0		0	1,600	1,600	2,006		
2,6-Dinitrotoluene	0	0		0	990	990	1,241		
1,2-Diphenylhydrazine	0	0		0	15	15.0	18.8		
Fluoranthene	0	0		0	200	200	251		
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	12.5		
Hexachlorocyclopentadiene	0	0		0	5	5.0	6.27		
Hexachloroethane	0	0		0	60	60.0	75.2		
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A		
Isophorone	0	0		0	10,000	10,000	12,535		
Naphthalene	0	0		0	140	140	175		
Nitrobenzene	0	0		0	4,000	4,000	5,014		
n-Nitrosodimethylamine	0	0		0	17,000	17,000	21,310		
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A		
n-Nitrosodiphenylamine	0	0		0	300	300	376		
Phenanthrene	0	0		0	5	5.0	6.27		
Pyrene	0	0		0	N/A	N/A	N/A		
1,2,4-Trichlorobenzene	0	0		0	130	130	163		
Aldrin	0	0		0	3	3.0	3.76		
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	1.19		
Chlordane	0	0		0	2.4	2.4	3.01		
4,4-DDT	0	0		0	1.1	1.1	1.38		
4,4-DDE	0	0		0	1.1	1.1	1.38		
4,4-DDD	0	0		0	1.1	1.1	1.38		
Dieldrin	0	0		0	0.24	0.24	0.3		
alpha-Endosulfan	0	0		0	0.22	0.22	0.28		
beta-Endosulfan	0	0		0	0.22	0.22	0.28		
Endosulfan Sulfate	0	0		0	N/A	N/A	N/A		
Endrin	0	0		0	0.086	0.086	0.11		
Endrin Aldehyde	0	0		0	N/A	N/A	N/A		
Heptachlor	0	0		0	0.52	0.52	0.65		
Heptachlor Epoxide	0	0		0	0.5	0.5	0.63		
Toxaphene	0	0		0	0.73	0.73	0.92		

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☑ **CFC** CCT (min): 2.280 PMF: 1 Analysis Hardness (mg/l): 364 Analysis pH: 7.51

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	220	220	276	
Total Arsenic	0	0		0	150	150	188	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	5,139	
Total Boron	0	0		0	1,600	1,600	2,006	
Total Cadmium	0	0		0	0.603	0.7	0.88	Chem Translator of 0.855 applied
Total Chromium (III)	0	0		0	213.523	248	311	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	13.0	Chem Translator of 0.962 applied
Total Cobalt	0	0		0	19	19.0	23.8	
Total Copper	0	0		0	27.012	28.1	35.3	Chem Translator of 0.96 applied
Free Cyanide	0	0		0	5.2	5.2	6.52	
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	1,500	1,500	1,880	WQC = 30 day average; PMF = 1
Total Mercury	0	0		0	0.770	0.91	1.14	Chem Translator of 0.85 applied
Total Nickel	0	0		0	155.149	156	195	Chem Translator of 0.997 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	4.600	4.99	6.25	Chem Translator of 0.922 applied
Total Silver	0	0		0	N/A	N/A	N/A	Chem Translator of 1 applied
Total Thallium	0	0		0	13	13.0	16.3	
Total Zinc	0	0		0	353.032	358	449	Chem Translator of 0.986 applied
Acrolein	0	0		0	3	3.0	3.76	
Acrylonitrile	0	0		0	130	130	163	
Benzene	0	0		0	130	130	163	
Bromoform	0	0		0	370	370	464	
Carbon Tetrachloride	0	0		0	560	560	702	
Chlorobenzene	0	0		0	240	240	301	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	3,500	3,500	4,387	
Chloroform	0	0		0	390	390	489	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	3,100	3,100	3,886	
1,1-Dichloroethylene	0	0		0	1,500	1,500	1,880	
1,2-Dichloropropane	0	0		0	2,200	2,200	2,758	
1,3-Dichloropropylene	0	0		0	61	61.0	76.5	
Ethylbenzene	0	0		0	580	580	727	
Methyl Bromide	0	0		0	110	110	138	
Methyl Chloride	0	0		0	5,500	5,500	6,894	
Methylene Chloride	0	0		0	2,400	2,400	3,008	

1,1,2,2-Tetrachloroethane	0	0		0	210	210	263		
Tetrachloroethylene	0	0		0	140	140	175		
Toluene	0	0		0	330	330	414		
1,2-trans-Dichloroethylene	0	0		0	1,400	1,400	1,755		
1,1,1-Trichloroethane	0	0		0	610	610	765		
1,1,2-Trichloroethane	0	0		0	680	680	852		
Trichloroethylene	0	0		0	450	450	564		
Vinyl Chloride	0	0		0	N/A	N/A	N/A		
2-Chlorophenol	0	0		0	110	110	138		
2,4-Dichlorophenol	0	0		0	340	340	426		
2,4-Dimethylphenol	0	0		0	130	130	163		
4,6-Dinitro-o-Cresol	0	0		0	16	16.0	20.1		
2,4-Dinitrophenol	0	0		0	130	130	163		
2-Nitrophenol	0	0		0	1,600	1,600	2,006		
4-Nitrophenol	0	0		0	470	470	589		
p-Chloro-m-Cresol	0	0		0	500	500	627		
Pentachlorophenol	0	0		0	11.199	11.2	14.0		
Phenol	0	0		0	N/A	N/A	N/A		
2,4,6-Trichlorophenol	0	0		0	91	91.0	114		
Acenaphthene	0	0		0	17	17.0	21.3		
Anthracene	0	0		0	N/A	N/A	N/A		
Benzidine	0	0		0	59	59.0	74.0		
Benzo(a)Anthracene	0	0		0	0.1	0.1	0.13		
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	7,521		
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A		
Bis(2-Ethylhexyl)Phthalate	0	0		0	910	910	1,141		
4-Bromophenyl Phenyl Ether	0	0		0	54	54.0	67.7		
Butyl Benzyl Phthalate	0	0		0	35	35.0	43.9		
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	201		
1,3-Dichlorobenzene	0	0		0	69	69.0	86.5		
1,4-Dichlorobenzene	0	0		0	150	150	188		
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A		
Diethyl Phthalate	0	0		0	800	800	1,003		
Dimethyl Phthalate	0	0		0	500	500	627		
Di-n-Butyl Phthalate	0	0		0	21	21.0	26.3		
2,4-Dinitrotoluene	0	0		0	320	320	401		
2,6-Dinitrotoluene	0	0		0	200	200	251		
1,2-Diphenylhydrazine	0	0		0	3	3.0	3.76		
Fluoranthene	0	0		0	40	40.0	50.1		

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Fluorene	0	0			0	N/A	N/A	N/A		
Hexachlorobenzene	0	0			0	N/A	N/A	N/A		
Hexachlorobutadiene	0	0			0	2	2.0	2.51		
Hexachlorocyclopentadiene	0	0			0	1	1.0	1.25		
Hexachloroethane	0	0			0	12	12.0	15.0		
Indeno(1,2,3-cd)Pyrene	0	0			0	N/A	N/A	N/A		
Isophorone	0	0			0	2,100	2,100	2,632		
Naphthalene	0	0			0	43	43.0	53.9		
Nitrobenzene	0	0			0	810	810	1,015		
n-Nitrosodimethylamine	0	0			0	3,400	3,400	4,262		
n-Nitrosodi-n-Propylamine	0	0			0	N/A	N/A	N/A		
n-Nitrosodiphenylamine	0	0			0	59	59.0	74.0		
Phenanthrene	0	0			0	1	1.0	1.25		
Pyrene	0	0			0	N/A	N/A	N/A		
1,2,4-Trichlorobenzene	0	0			0	26	26.0	32.6		
Aldrin	0	0			0	0.1	0.1	0.13		
alpha-BHC	0	0			0	N/A	N/A	N/A		
beta-BHC	0	0			0	N/A	N/A	N/A		
gamma-BHC	0	0			0	N/A	N/A	N/A		
Chlordane	0	0			0	0.0043	0.004	0.005		
4,4-DDT	0	0			0	0.001	0.001	0.001		
4,4-DDE	0	0			0	0.001	0.001	0.001		
4,4-DDD	0	0			0	0.001	0.001	0.001		
Dieldrin	0	0			0	0.056	0.056	0.07		
alpha-Endosulfan	0	0			0	0.056	0.056	0.07		
beta-Endosulfan	0	0			0	0.056	0.056	0.07		
Endosulfan Sulfate	0	0			0	N/A	N/A	N/A		
Endrin	0	0			0	0.036	0.036	0.045		
Endrin Aldehyde	0	0			0	N/A	N/A	N/A		
Heptachlor	0	0			0	0.0038	0.004	0.005		
Heptachlor Epoxide	0	0			0	0.0038	0.004	0.005		
Toxaphene	0	0			0	0.0002	0.0002	0.0003		

☑ ***THH*** CCT (min): 2.280 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	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	5.6	5.6	7.02	

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Total Arsenic	0	0		0	10	10.0	12.5		
Total Barium	0	0		0	2,400	2,400	3,008		
Total Boron	0	0		0	3,100	3,100	3,886		
Total Cadmium	0	0		0	N/A	N/A	N/A		
Total Chromium (III)	0	0		0	N/A	N/A	N/A		
Hexavalent Chromium	0	0		0	N/A	N/A	N/A		
Total Cobalt	0	0		0	N/A	N/A	N/A		
Total Copper	0	0		0	N/A	N/A	N/A		
Free Cyanide	0	0		0	4	4.0	5.01		
Dissolved Iron	0	0		0	300	300	376		
Total Iron	0	0		0	N/A	N/A	N/A		
Total Mercury	0	0		0	0.050	0.05	0.063		
Total Nickel	0	0		0	610	610	765		
Total Phenols (Phenolics) (PWS)	0	0		0	5	5.0	N/A		
Total Selenium	0	0		0	N/A	N/A	N/A		
Total Silver	0	0		0	N/A	N/A	N/A		
Total Thallium	0	0		0	0.24	0.24	0.3		
Total Zinc	0	0		0	N/A	N/A	N/A		
Acrolein	0	0		0	3	3.0	3.76		
Acrylonitrile	0	0		0	N/A	N/A	N/A		
Benzene	0	0		0	N/A	N/A	N/A		
Bromoform	0	0		0	N/A	N/A	N/A		
Carbon Tetrachloride	0	0		0	N/A	N/A	N/A		
Chlorobenzene	0	0		0	100	100.0	125		
Chlorodibromomethane	0	0		0	N/A	N/A	N/A		
2-Chloroethyl Vinyl Ether	0	0		0	N/A	N/A	N/A		
Chloroform	0	0		0	5.7	5.7	7.15		
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	41.4		
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	85.2		
Methyl Bromide	0	0		0	100	100.0	125		
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	71.5		
1,2-trans-Dichloroethylene	0	0		0	100	100.0	125		
1,1,1-Trichloroethane	0	0		0	10,000	10,000	12,535		
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	37.6		

2,4-Dichlorophenol	0	0		0	10	10.0	12.5			
2,4-Dimethylphenol	0	0		0	100	100.0	125			
4,6-Dinitro-o-Cresol	0	0		0	2	2.0	2.51			
2,4-Dinitrophenol	0	0		0	10	10.0	12.5			
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	5,014			
2,4,6-Trichlorophenol	0	0		0	N/A	N/A	N/A			
Acenaphthene	0	0		0	70	70.0	87.7			
Anthracene	0	0		0	300	300	376			
Benzidine	0	0		0	N/A	N/A	N/A			
Benzo(a)Anthracene	0	0		0	N/A	N/A	N/A			
Benzo(a)Pyrene	0	0		0	N/A	N/A	N/A			
3,4-Benzofluoranthene	0	0		0	N/A	N/A	N/A			
Benzo(k)Fluoranthene	0	0		0	N/A	N/A	N/A			
Bis(2-Chloroethyl)Ether	0	0		0	N/A	N/A	N/A			
Bis(2-Chloroisopropyl)Ether	0	0		0	200	200	251			
Bis(2-Ethylhexyl)Phthalate	0	0		0	N/A	N/A	N/A			
4-Bromophenyl Phenyl Ether	0	0		0	N/A	N/A	N/A			
Butyl Benzyl Phthalate	0	0		0	0.1	0.1	0.13			
2-Chloronaphthalene	0	0		0	800	800	1,003			
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	1,254			
1,3-Dichlorobenzene	0	0		0	7	7.0	8.77			
1,4-Dichlorobenzene	0	0		0	300	300	376			
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A			
Diethyl Phthalate	0	0		0	600	600	752			
Dimethyl Phthalate	0	0		0	2,000	2,000	2,507			
Di-n-Butyl Phthalate	0	0		0	20	20.0	25.1			
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	25.1			
Fluorene	0	0		0	50	50.0	62.7			
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	5.01			
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	42.6			
Naphthalene	0	0		0	N/A	N/A	N/A			
Nitrobenzene	0	0		0	10	10.0	12.5			

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	25.1		
1,2,4-Trichlorobenzene	0	0		0	0.07	0.07	0.088		
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	5.26		
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	25.1		
beta-Endosulfan	0	0		0	20	20.0	25.1		
Endosulfan Sulfate	0	0		0	20	20.0	25.1		
Endrin	0	0		0	0.03	0.03	0.038		
Endrin Aldehyde	0	0		0	1	1.0	1.25		
Heptachlor	0	0		0	N/A	N/A	N/A		
Heptachlor Epoxide	0	0		0	N/A	N/A	N/A		
Toxaphene	0	0		0	N/A	N/A	N/A		

☑ ***CRL*** CCT (min): 13.529 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	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	N/A	N/A	N/A	
Total Arsenic	0	0		0	N/A	N/A	N/A	
Total Barium	0	0		0	N/A	N/A	N/A	
Total Boron	0	0		0	N/A	N/A	N/A	
Total Cadmium	0	0		0	N/A	N/A	N/A	
Total Chromium (III)	0	0		0	N/A	N/A	N/A	
Hexavalent Chromium	0	0		0	N/A	N/A	N/A	
Total Cobalt	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Free Cyanide	0	0		0	N/A	N/A	N/A	

Dissolved Iron	0	0		0	N/A	N/A	N/A		
Total Iron	0	0		0	N/A	N/A	N/A		
Total Mercury	0	0		0	N/A	N/A	N/A		
Total Nickel	0	0		0	N/A	N/A	N/A		
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A		
Total Selenium	0	0		0	N/A	N/A	N/A		
Total Silver	0	0		0	N/A	N/A	N/A		
Total Thallium	0	0		0	N/A	N/A	N/A		
Total Zinc	0	0		0	N/A	N/A	N/A		
Acrolein	0	0		0	N/A	N/A	N/A		
Acrylonitrile	0	0		0	0.06	0.06	0.17		
Benzene	0	0		0	0.58	0.58	1.62		
Bromoform	0	0		0	7	7.0	19.5		
Carbon Tetrachloride	0	0		0	0.4	0.4	1.12		
Chlorobenzene	0	0		0	N/A	N/A	N/A		
Chlorodibromomethane	0	0		0	0.8	0.8	2.23		
2-Chloroethyl Vinyl Ether	0	0		0	N/A	N/A	N/A		
Chloroform	0	0		0	N/A	N/A	N/A		
Dichlorobromomethane	0	0		0	0.95	0.95	2.65		
1,2-Dichloroethane	0	0		0	9.9	9.9	27.6		
1,1-Dichloroethylene	0	0		0	N/A	N/A	N/A		
1,2-Dichloropropane	0	0		0	0.9	0.9	2.51		
1,3-Dichloropropylene	0	0		0	0.27	0.27	0.75		
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	55.8		
1,1,2,2-Tetrachloroethane	0	0		0	0.2	0.2	0.56		
Tetrachloroethylene	0	0		0	10	10.0	27.9		
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	1.53		
Trichloroethylene	0	0		0	0.6	0.6	1.67		
Vinyl Chloride	0	0		0	0.02	0.02	0.056		
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	0.084		
Phenol	0	0		0	N/A	N/A	N/A		

2,4,6-Trichlorophenol	0	0			0	1.5	1.5	4.18		
Acenaphthene	0	0			0	N/A	N/A	N/A		
Anthracene	0	0			0	N/A	N/A	N/A		
Benzidine	0	0			0	0.0001	0.0001	0.0003		
Benzo(a)Anthracene	0	0			0	0.001	0.001	0.003		
Benzo(a)Pyrene	0	0			0	0.0001	0.0001	0.0003		
3,4-Benzofluoranthene	0	0			0	0.001	0.001	0.003		
Benzo(k)Fluoranthene	0	0			0	0.01	0.01	0.028		
Bis(2-Chloroethyl)Ether	0	0			0	0.03	0.03	0.084		
Bis(2-Chloroisopropyl)Ether	0	0			0	N/A	N/A	N/A		
Bis(2-Ethylhexyl)Phthalate	0	0			0	0.32	0.32	0.89		
4-Bromophenyl Phenyl Ether	0	0			0	N/A	N/A	N/A		
Butyl Benzyl Phthalate	0	0			0	N/A	N/A	N/A		
2-Chloronaphthalene	0	0			0	N/A	N/A	N/A		
Chrysene	0	0			0	0.12	0.12	0.33		
Dibenzo(a,h)Anthrancene	0	0			0	0.0001	0.0001	0.0003		
1,2-Dichlorobenzene	0	0			0	N/A	N/A	N/A		
1,3-Dichlorobenzene	0	0			0	N/A	N/A	N/A		
1,4-Dichlorobenzene	0	0			0	N/A	N/A	N/A		
3,3-Dichlorobenzidine	0	0			0	0.05	0.05	0.14		
Diethyl Phthalate	0	0			0	N/A	N/A	N/A		
Dimethyl Phthalate	0	0			0	N/A	N/A	N/A		
Di-n-Butyl Phthalate	0	0			0	N/A	N/A	N/A		
2,4-Dinitrotoluene	0	0			0	0.05	0.05	0.14		
2,6-Dinitrotoluene	0	0			0	0.05	0.05	0.14		
1,2-Diphenylhydrazine	0	0			0	0.03	0.03	0.084		
Fluoranthene	0	0			0	N/A	N/A	N/A		
Fluorene	0	0			0	N/A	N/A	N/A		
Hexachlorobenzene	0	0			0	0.00008	0.00008	0.0002		
Hexachlorobutadiene	0	0			0	0.01	0.01	0.028		
Hexachlorocyclopentadiene	0	0			0	N/A	N/A	N/A		
Hexachloroethane	0	0			0	0.1	0.1	0.28		
Indeno(1,2,3-cd)Pyrene	0	0			0	0.001	0.001	0.003		
Isophorone	0	0			0	N/A	N/A	N/A		
Naphthalene	0	0			0	N/A	N/A	N/A		
Nitrobenzene	0	0			0	N/A	N/A	N/A		
n-Nitrosodimethylamine	0	0			0	0.0007	0.0007	0.002		
n-Nitrosodi-n-Propylamine	0	0			0	0.005	0.005	0.014		
n-Nitrosodiphenylamine	0	0			0	3.3	3.3	9.2		
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	0.000002		
alpha-BHC	0	0			0	0.0004	0.0004	0.001		
beta-BHC	0	0			0	0.008	0.008	0.022		

gamma-BHC	0	0		0	N/A	N/A	N/A	
Chlordane	0	0		0	0.0003	0.0003	0.0008	
4,4-DDT	0	0		0	0.00003	0.00003	0.00008	
4,4-DDE	0	0		0	0.00002	0.00002	0.00006	
4,4-DDD	0	0		0	0.0001	0.0001	0.0003	
Dieldrin	0	0		0	0.000001	0.000001	0.000003	
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	0.00002	
Heptachlor Epoxide	0	0		0	0.00003	0.00003	0.00008	
Toxaphene	0	0		0	0.0007	0.0007	0.002	

☑ ***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
Total Selenium	Report	Report	Report	Report	Report	µg/L	6.25	CFC	Discharge Conc > 10% WQBEL (no RP)
Total Zinc	Report	Report	Report	Report	Report	µg/L	358	AFC	Discharge Conc > 10% WQBEL (no RP)

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

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

Pollutants	Governing WQBEL	Units	Comments
Total Dissolved Solids (PWS)	N/A	N/A	PWS Not Applicable

Chloride (PWS)	N/A	N/A	PWS Not Applicable
Bromide	N/A	N/A	No WQS
Sulfate (PWS)	N/A	N/A	PWS Not Applicable
Total Aluminum	750	µg/L	Discharge Conc ≤ 10% WQBEL
Total Antimony	7.02	µg/L	Discharge Conc ≤ 10% WQBEL
Total Arsenic	N/A	N/A	Discharge Conc < TQL
Total Barium	3,008	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Boron	2,006	µg/L	Discharge Conc < TQL
Total Cadmium	0.88	µg/L	Discharge Conc < TQL
Total Chromium (III)	311	µg/L	Discharge Conc ≤ 10% WQBEL
Hexavalent Chromium	13.0	µg/L	Discharge Conc < TQL
Total Cobalt	23.8	µg/L	Discharge Conc < TQL
Total Copper	35.3	µg/L	Discharge Conc ≤ 10% WQBEL
Free Cyanide	5.01	µg/L	Discharge Conc < TQL
Total Cyanide	N/A	N/A	No WQS
Dissolved Iron	376	µg/L	Discharge Conc ≤ 10% WQBEL
Total Iron	1,880	µg/L	Discharge Conc ≤ 10% WQBEL
Total Mercury	0.063	µg/L	Discharge Conc < TQL
Total Nickel	195	µg/L	Discharge Conc ≤ 10% WQBEL
Total Phenols (Phenolics) (PWS)		µg/L	PWS Not Applicable
Total Silver	34.9	µg/L	Discharge Conc ≤ 10% WQBEL
Total Thallium	0.3	µg/L	Discharge Conc < TQL
Total Molybdenum	N/A	N/A	No WQS
Acrolein	3.0	µg/L	Discharge Conc < TQL
Acrylonitrile	0.17	µg/L	Discharge Conc < TQL
Benzene	1.62	µg/L	Discharge Conc < TQL
Bromoform	19.5	µg/L	Discharge Conc < TQL
Carbon Tetrachloride	1.12	µg/L	Discharge Conc < TQL
Chlorobenzene	125	µg/L	Discharge Conc < TQL
Chlorodibromomethane	2.23	µg/L	Discharge Conc ≤ 25% WQBEL
Chloroethane	N/A	N/A	No WQS
2-Chloroethyl Vinyl Ether	4,387	µg/L	Discharge Conc < TQL
Chloroform	7.15	µg/L	Discharge Conc ≤ 25% WQBEL
Dichlorobromomethane	2.65	µg/L	Discharge Conc ≤ 25% WQBEL
1,1-Dichloroethane	N/A	N/A	No WQS
1,2-Dichloroethane	27.6	µg/L	Discharge Conc < TQL
1,1-Dichloroethylene	41.4	µg/L	Discharge Conc < TQL
1,2-Dichloropropane	2.51	µg/L	Discharge Conc < TQL
1,3-Dichloropropylene	0.75	µg/L	Discharge Conc < TQL
1,4-Dioxane	N/A	N/A	No WQS
Ethylbenzene	85.2	µg/L	Discharge Conc < TQL
Methyl Bromide	125	µg/L	Discharge Conc < TQL
Methyl Chloride	6,894	µg/L	Discharge Conc < TQL
Methylene Chloride	55.8	µg/L	Discharge Conc < TQL

Model Results

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1,1,2,2-Tetrachloroethane	0.56	µg/L	Discharge Conc < TQL
Tetrachloroethylene	27.9	µg/L	Discharge Conc < TQL
Toluene	71.5	µg/L	Discharge Conc < TQL
1,2-trans-Dichloroethylene	125	µg/L	Discharge Conc < TQL
1,1,1-Trichloroethane	765	µg/L	Discharge Conc < TQL
1,1,2-Trichloroethane	1.53	µg/L	Discharge Conc < TQL
Trichloroethylene	1.67	µg/L	Discharge Conc < TQL
Vinyl Chloride	0.056	µg/L	Discharge Conc < TQL
2-Chlorophenol	37.6	µg/L	Discharge Conc < TQL
2,4-Dichlorophenol	12.5	µg/L	Discharge Conc < TQL
2,4-Dimethylphenol	125	µg/L	Discharge Conc < TQL
4,6-Dinitro-o-Cresol	2.51	µg/L	Discharge Conc < TQL
2,4-Dinitrophenol	12.5	µg/L	Discharge Conc < TQL
2-Nitrophenol	2,006	µg/L	Discharge Conc < TQL
4-Nitrophenol	589	µg/L	Discharge Conc < TQL
p-Chloro-m-Cresol	160	µg/L	Discharge Conc < TQL
Pentachlorophenol	0.084	µg/L	Discharge Conc < TQL
Phenol	5,014	µg/L	Discharge Conc < TQL
2,4,6-Trichlorophenol	4.18	µg/L	Discharge Conc < TQL
Acenaphthene	21.3	µg/L	Discharge Conc < TQL
Acenaphthylene	N/A	N/A	No WQS
Anthracene	376	µg/L	Discharge Conc < TQL
Benzidine	0.0003	µg/L	Discharge Conc < TQL
Benzo(a)Anthracene	0.003	µg/L	Discharge Conc < TQL
Benzo(a)Pyrene	0.0003	µg/L	Discharge Conc < TQL
3,4-Benzofluoranthene	0.003	µg/L	Discharge Conc < TQL
Benzo(ghi)Perylene	N/A	N/A	No WQS
Benzo(k)Fluoranthene	0.028	µg/L	Discharge Conc < TQL
Bis(2-Chloroethoxy)Methane	N/A	N/A	No WQS
Bis(2-Chloroethyl)Ether	0.084	µg/L	Discharge Conc < TQL
Bis(2-Chloroisopropyl)Ether	251	µg/L	Discharge Conc < TQL
Bis(2-Ethylhexyl)Phthalate	0.89	µg/L	Discharge Conc < TQL
4-Bromophenyl Phenyl Ether	67.7	µg/L	Discharge Conc < TQL
Butyl Benzyl Phthalate	0.13	µg/L	Discharge Conc < TQL
2-Chloronaphthalene	1,003	µg/L	Discharge Conc < TQL
4-Chlorophenyl Phenyl Ether	N/A	N/A	No WQS
Chrysene	0.33	µg/L	Discharge Conc < TQL
Dibenzo(a,h)Anthrancene	0.0003	µg/L	Discharge Conc < TQL
1,2-Dichlorobenzene	201	µg/L	Discharge Conc < TQL
1,3-Dichlorobenzene	8.77	µg/L	Discharge Conc < TQL
1,4-Dichlorobenzene	188	µg/L	Discharge Conc < TQL
3,3-Dichlorobenzidine	0.14	µg/L	Discharge Conc < TQL
Diethyl Phthalate	752	µg/L	Discharge Conc < TQL
Dimethyl Phthalate	627	µg/L	Discharge Conc < TQL
Di-n-Butyl Phthalate	25.1	µg/L	Discharge Conc < TQL

2,4-Dinitrotoluene	0.14	µg/L	Discharge Conc < TQL
2,6-Dinitrotoluene	0.14	µg/L	Discharge Conc < TQL
Di-n-Octyl Phthalate	N/A	N/A	No WQS
1,2-Diphenylhydrazine	0.084	µg/L	Discharge Conc < TQL
Fluoranthene	25.1	µg/L	Discharge Conc < TQL
Fluorene	62.7	µg/L	Discharge Conc < TQL
Hexachlorobenzene	0.0002	µg/L	Discharge Conc < TQL
Hexachlorobutadiene	0.028	µg/L	Discharge Conc < TQL
Hexachlorocyclopentadiene	1.25	µg/L	Discharge Conc < TQL
Hexachloroethane	0.28	µg/L	Discharge Conc < TQL
Indeno(1,2,3-cd)Pyrene	0.003	µg/L	Discharge Conc < TQL
Isophorone	42.6	µg/L	Discharge Conc < TQL
Naphthalene	53.9	µg/L	Discharge Conc ≤ 25% WQBEL
Nitrobenzene	12.5	µg/L	Discharge Conc < TQL
n-Nitrosodimethylamine	0.002	µg/L	Discharge Conc < TQL
n-Nitrosodi-n-Propylamine	0.014	µg/L	Discharge Conc < TQL
n-Nitrosodiphenylamine	9.2	µg/L	Discharge Conc < TQL
Phenanthrene	1.25	µg/L	Discharge Conc < TQL
Pyrene	25.1	µg/L	Discharge Conc < TQL
1,2,4-Trichlorobenzene	0.088	µg/L	Discharge Conc < TQL
Aldrin	0.000002	µg/L	Discharge Conc < TQL
alpha-BHC	0.001	µg/L	Discharge Conc < TQL
beta-BHC	0.022	µg/L	Discharge Conc < TQL
gamma-BHC	0.95	µg/L	Discharge Conc < TQL
delta BHC	N/A	N/A	No WQS
Chlordane	0.0008	µg/L	Discharge Conc < TQL
4,4-DDT	0.00008	µg/L	Discharge Conc < TQL
4,4-DDE	0.00006	µg/L	Discharge Conc < TQL
4,4-DDD	0.0003	µg/L	Discharge Conc < TQL
Dieldrin	0.000003	µg/L	Discharge Conc < TQL
alpha-Endosulfan	0.07	µg/L	Discharge Conc < TQL
beta-Endosulfan	0.07	µg/L	Discharge Conc < TQL
Endosulfan Sulfate	25.1	µg/L	Discharge Conc < TQL
Endrin	0.038	µg/L	Discharge Conc < TQL
Endrin Aldehyde	1.25	µg/L	Discharge Conc < TQL
Heptachlor	0.00002	µg/L	Discharge Conc < TQL
Heptachlor Epoxide	0.00008	µg/L	Discharge Conc < TQL
Toxaphene	0.0003	µg/L	Discharge Conc < TQL