pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southcentral Regional Office
CLEAN WATER PROGRAM

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Application Type	**Renewal**	Application No.	**PA0262137**
Facility Type	**Non-Municipal**	APS ID	**820007**
Major / Minor	**Minor**	Authorization ID	**1308381**

Applicant and Facility Information

Applicant Name	**Log Cabin Court Mobile Home Park**	Facility Name	**Log Cabin Court MHP**
Applicant Address	123 Gilpin Drive	Facility Address	Lobin Road
	West Chester, PA 19382		Earl Township, PA 17519
Applicant Contact	P.C.S. Chadaga	Facility Contact	P.C.S Chadaga
Applicant Phone	(484) 887-8247	Facility Phone	(484) 887-8247
Client ID	306529	Site ID	2332
Ch 94 Load Status	Not Overloaded	Municipality	Earl Township
Connection Status	No Limitations	County	Lancaster
Date Application Received	March 4, 2020	EPA Waived?	Yes
Date Application Accepted	March 13, 2020	If No, Reason	

Purpose of Application: NPDES Renewal.

Summary of Review

Log Cabin Court MHP 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 September 15, 2015 and became effective on October 1, 2015, authorizing discharge of treated sewage from the existing wastewater treatment plant (WWTP) located in Earl Township, Lancaster County into UNT to Conestoga River. The existing permit expiration date was September 30, 2020, and the permit has been administratively extended since that time.

Per the previous fact sheet, the WWTP has been designed to serve an existing 16.5 acre mobile home park, which contains 82 mobile home sites. A point of first use survey was performed by a DEP biologist on December 22, 2011. Three different potential discharge points were examined for the proposed facility. It was determined that the point of first use for all three sites was at the proposed discharge points. On January 25, 2012, DEP sent a letter to the Applicant which included preliminary effluent limitations for the three proposed outfall locations. The application received on August 2, 2013 indicated the intent to use proposed “Discharge Point C.” The previous permit limitations were developed for this discharge point.

Changes in this renewal: Monthly calculation of Net TN and Net TP has been removed from the permit. E.Coli monitoring has been added to the permit.

Sludge use and disposal description and location(s): Offsite WWTP

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

Public Participation

Approve	Deny	Signatures	Date
X		*Benjamin R. Lockwood* Benjamin R. Lockwood / Environmental Engineering Specialist	June 7, 2021
X		*Maria D. Bebenek for Daniel W. Martin* Daniel W. Martin, P.E. / Environmental Engineer Manager	June 15, 2021
X		*Maria D.Bebenek* Maria D. Bebenek, P.E. / Program Manager	June 15, 2021

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

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	.014
Latitude	40º 7' 45"	Longitude	76º 4' 44"
Quad Name	Terre Hill	Quad Code	1737
Wastewater Description:	Sewage Effluent		
Receiving Waters	Unnamed Tributary to Conestoga River (CWF, MF)	Stream Code	07792
NHD Com ID	57462453	RMI	1.6
Drainage Area	1.49 mi^2	Yield (cfs/mi^2)	0.039
Q_{7-10} Flow (cfs)	0.0585	Q_{7-10} Basis	USGS PA StreamStats
Elevation (ft)	369	Slope (ft/ft)	
Watershed No.	7-J	Chapter 93 Class.	CWF, MF
Existing Use	N/A	Existing Use Qualifier	N/A
Exceptions to Use	N/A	Exceptions to Criteria	N/A
Assessment Status	Impaired		
Cause(s) of Impairment	Pathogens, Pathogens, Nutrients		
Source(s) of Impairment	Agriculture, Urban Runoff/Storm Sewers, Agriculture		
TMDL Status	N/A	Name	N/A
Nearest Downstream Public Water Supply Intake	Lancaster City Water Bureau		
PWS Waters	Conestoga River	Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	22.5

Changes Since Last Permit Issuance: USGS PA StreamStats provided a drainage area of 1.49 mi^2 and a Q_{7-10} of 0.0585 cfs at the point of discharge.

Other Comments: None

Treatment Facility Summary				
Waste Type	**Degree of Treatment**	**Process Type**	**Disinfection**	**Avg Annual Flow (MGD)**
Sewage	Secondary	Extended Aeration	Hypochlorite	0.014
Hydraulic Capacity (MGD)	**Organic Capacity (lbs/day)**	**Load Status**	**Biosolids Treatment**	**Biosolids Use/Disposal**
0.014	28	Not Overloaded	Sludge Holding	Other WWTP

Changes Since Last Permit Issuance: None

Other Comments: The WWTP process consists of the following:

Equalization Tank – 2 Aeration Tanks – Clarifier – Chlorine Contact Tank (with tablet feed) – Post Aeration Tank – Outfall 001 to UNT to Conestoga River.

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:	12/6/2017: A routine inspection was conducted. The treatment units appeared to be operating normally. No other issues were noted. 6/23/2020: An administrative inspection was conducted. The WWTP was operating normally, and all units were online. At the time of inspection there were no outstanding issues or needs at the facility.

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

Compliance History

DMR Data for Outfall 001 (from April 1, 2020 to March 31, 2021)

Parameter	MAR-21	FEB-21	JAN-21	DEC-20	NOV-20	OCT-20	SEP-20	AUG-20	JUL-20	JUN-20	MAY-20	APR-20
Flow (MGD) Average Monthly	0.0063	0.00612	0.00586	0.00693	0.00674	0.00611	0.00606	0.006597	0.00676	0.00627	0.006752	0.00686
Flow (MGD) Daily Maximum	0.00973	0.01346	0.0085	0.01369	0.01008	0.00976	0.01005	0.01312	0.0117	0.00817	0.011197	0.01118
pH (S.U.) Minimum	7.26	7.19	7.39	7.39	7.41	7.32	7.42	7.37	7.33	7.26	7.19	7.11
pH (S.U.) Maximum	7.57	7.68	7.74	7.66	7.65	7.67	7.71	7.74	7.84	7.65	7.8	7.82
DO (mg/L) Minimum	7.2	8.18	8.75	8.16	7.2	7.85	6.67	6.09	5.46	7.3	6.83	7.01
CBOD5 (mg/L) Average Monthly	5.1	2.6	< 2.1	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2.1	< 2.2
TSS (mg/L) Average Monthly	< 12	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4
Fecal Coliform (CFU/100 ml) Geometric Mean	552	2	< 1	< 50	< 1	< 1	< 1	< 6	< 1	< 1	< 1	< 1
Fecal Coliform (CFU/100 ml) Instantaneous Maximum	1200	3	< 1	2500	2	1	< 1	31	1	2	< 1	1
UV Intensity (mW/cm²) Minimum	19.47	11.27	18.48	20.79	20.79	22.88	24.9	20.79	22.11	24.09	24.41	22.11
UV Intensity (mW/cm²) Average Monthly	24.53	21.03	23.02	24.47	24.53	26.09	26.75	26.71	26.16	27.09	27.27	26.68
Nitrate-Nitrite (mg/L) Average Monthly	7.01	18.87	17.5	28.2	43.8	35	31.8	15.99	15.1	17.7	28.9	12.69
Nitrate-Nitrite (lbs) Total Monthly	11	24	22	49	66	50	44	21	28	27	32	18
Total Nitrogen (mg/L) Average Monthly	9.61	26.3	18.3	< 28.7	< 44.3	< 35.6	32.9	< 16.49	16.1	18.8	< 30.3	17.4
Total Nitrogen (lbs) Effluent Net Total Monthly	15	32	23	< 50	< 67	< 51	46	< 22	30	29	< 34	25
Total Nitrogen (lbs) Total Monthly	15	32	23	< 50	< 67	< 51	46	< 22	30	29	< 34	25

Total Nitrogen (lbs) Effluent Net Total Annual							< NULL592					
Total Nitrogen (lbs) Total Annual							< 483					
Ammonia (mg/L) Average Monthly	0.79	4.72	< 0.11	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.5	< 3.4
Ammonia (lbs) Total Monthly	1	5	< 0.1	< 0.2	< 0.2	< 0.1	< 0.1	< 0.1	< 0.2	< 0.2	< 0.6	< 5
Ammonia (lbs) Total Annual							< 22					
TKN (mg/L) Average Monthly	2.61	7.4	0.81	< 0.5	< 0.5	< 0.6	1.15	< 0.5	0.96	1.12	< 1.44	4.7
TKN (lbs) Total Monthly	5	8	1	< 0.9	< 0.8	< 0.8	2	< 0.7	2	2	< 2.0	7
Total Phosphorus (mg/L) Average Monthly	0.56	0.23	0.23	0.14	0.14	0.21	0.32	0.68	0.8	0.64	0.57	0.69
Total Phosphorus (lbs) Effluent Net Total Monthly	1	0.2	0.3	0.2	0.2	0.3	0.4	1	1	1	0.6	1
Total Phosphorus (lbs) Total Monthly	1	0.2	0.3	0.2	0.2	0.3	0.4	1	1	1	0.6	1
Total Phosphorus (lbs) Effluent Net Total Annual							< NULL					
Total Phosphorus (lbs) Total Annual							< 8					

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) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Instantaneous Minimum	Average Monthly	Maximum	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
UV Intensity (mW/cm²)	XXX	XXX	Report	Report	XXX	XXX	1/day	Recorded
CBOD5	XXX	XXX	XXX	25	XXX	50	2/month	8-Hr Composite
TSS	XXX	XXX	XXX	30	XXX	60	2/month	8-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2,000 Geo Mean	XXX	10,000	2/month	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1,000	2/month	Grab
Ammonia Nov 1 - Apr 30	XXX	XXX	XXX	12	XXX	24	2/month	8-Hr Composite
Ammonia May 1 - Oct 31	XXX	XXX	XXX	4.0	XXX	8.0	2/month	8-Hr Composite
Total Phosphorus	XXX	XXX	XXX	0.8	XXX	1.6	2/month	8-Hr Composite

Compliance Sampling Location: At discharge from facility

Outfall 001

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		
Ammonia---N	Report	Report	XXX	Report	XXX	2/month	8-Hr Composite
Kjeldahl---N	Report	XXX	XXX	Report	XXX	2/month	8-Hr Composite
Nitrate-Nitrite as N	Report	XXX	XXX	Report	XXX	2/month	8-Hr Composite
Total Nitrogen	Report	Report	XXX	Report	XXX	2/month	Calculation
Total Phosphorus	Report	Report	XXX	Report	XXX	2/month	8-Hr Composite
Net Total Nitrogen	Report	0	XXX	XXX	XXX	1/month	Calculation
Net Total Phosphorus	Report	0	XXX	XXX	XXX	1/month	Calculation

Compliance Sampling Location: At discharge from facility

- The existing NPDES Permit authorizes the permittee to use 2,075 lbs/year as Total Nitrogen (TN) Offsets toward compliance with the Annual Net TN mass load limitations.

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** .014
Latitude 40º 7' 45" **Longitude** 76º 4' 44"
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

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. An existing discharge (Nexans Inc PA0084247) was included in the modeling, as it is located less than 0.01 miles away. The model output indicated a $CBOD_5$ average monthly limit of 25 mg/l, an NH_3-N average monthly limit of 4.82 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 is included as an attachment. Rounded in accordance with DEP's Technical Guidance No. 362-0400-001, an NH_3-N average monthly limit of 4.8 mg/l would be required. The $CBOD_5$ limit is the same as the limit in the existing permit, which will remain. The existing NH_3-N permit limit of 4.0 mg/l is more stringent and will remain in the permit.

There are no industrial/commercial users contributing industrial wastewater to the system and Log Cabin Court MHP does not currently have an EPA-approved pretreatment program. Accordingly, evaluating reasonable potential of toxic pollutants is not necessary as effluent levels of toxic pollutants are expected to be insignificant.

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. This limit will remain in the permit to ensure that the facility will 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 0.8 mg/l and 1.6 mg/l, respectively. Due to the nutrient-based impairment for the receiving stream, these limits were put into place with coordination from the permittee. The TP limit of 0.8 mg/l was used for operational reasons, as the small facility would be able to meet this limit more easily than a limit of 0.5 mg/l. These limits will remain in the renewal permit.

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 December 17, 2019, 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. For new Phase 4 and 5 sewage dischargers, in general DEP will issue new permits containing Cap Loads of "0" and new facilities will be expected to purchase credits and/or apply offsets to achieve compliance.

This facility is considered a Phase 5 non-significant discharger with a design flow less than 0.2 MGD but greater than 0.002 MGD. As this was a new facility, per the Phase 3 Supplement, a Cap Load of "0" was placed in the permit for TN and TP. For TN, the use of offsets was allowed. The permit authorizes the use of 2,075 lbs/year as TN Offsets for the connection of on-lot sewage disposal systems to the WWTP serving 83 EDUs. These Cap Loads will remain in the renewal permit. DEP no longer offers any tools to calculate the monthly loads for Net TN and Net TP, and these calculations are no longer needed since offsets and credits are applied annually. Therefore, this reporting requirement is no longer needed and will be removed from the permit.

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. These limits are included in the existing permit, and will remain 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 0.002 – 0.05 mgd will include E. Coli monitoring with a frequency of 1/year. This parameter has been added to the renewal 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. The existing permit has a monitoring requirement for UV intensity, which will remain in the permit.

Sampling Frequency & Sample Type

The monitoring requirements were established based on the BPJ and/or Table 6-3 of DEP's technical guidance No. 362-0400-001.

Flow Monitoring

Flow monitoring is recommended by DEP's technical guidance and is also required by 25 PA Code §§ 92a.27 and 92a.61.

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 for pathogens due to agriculture and urban/runoff storm sewers. There is an aquatic life impairment for nutrients due to agriculture.

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.

Proposed Effluent Limitations and Monitoring Requirements

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

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

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Instantaneous Minimum	Average Monthly	Maximum	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
CBOD5	XXX	XXX	XXX	25	XXX	50	2/month	8-Hr Composite
TSS	XXX	XXX	XXX	30	XXX	60	2/month	8-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2,000 Geo Mean	XXX	10,000	2/month	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1,000	2/month	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/year	Grab
UV Intensity (mW/cm^2)	XXX	XXX	Report	Report	XXX	XXX	1/day	Recorded
Ammonia Nov 1 - Apr 30	XXX	XXX	XXX	12	XXX	24	2/month	8-Hr Composite
Ammonia May 1 - Oct 31	XXX	XXX	XXX	4.0	XXX	8.0	2/month	8-Hr Composite
Total Phosphorus	XXX	XXX	XXX	0.8	XXX	1.6	2/month	8-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.

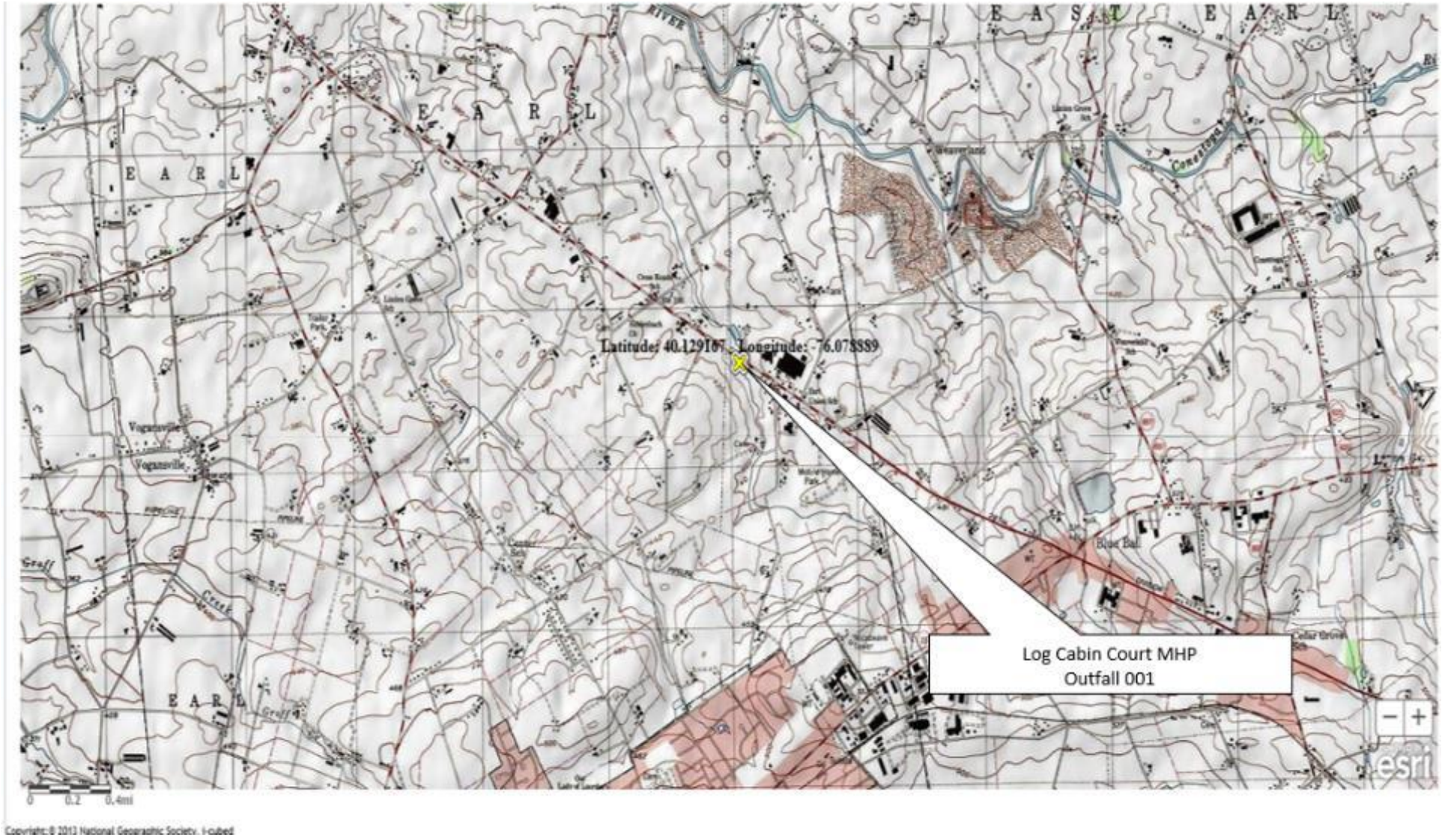
Outfall 001, Effective Period: Permit Effective Date through Permit Expiration Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs) (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/month	8-Hr Composite
Kjeldahl-N	Report	XXX	XXX	Report	XXX	XXX	2/month	8-Hr Composite
Nitrate-Nitrite as N	Report	XXX	XXX	Report	XXX	XXX	2/month	8-Hr Composite
Total Nitrogen	Report	Report	XXX	Report	XXX	XXX	1/month	Calculation
Total Phosphorus	Report	Report	XXX	Report	XXX	XXX	2/month	8-Hr Composite
Net Total Nitrogen	XXX	0	XXX	XXX	XXX	XXX	1/year	Calculation
Net Total Phosphorus	XXX	0	XXX	XXX	XXX	XXX	1/year	Calculation

Compliance Sampling Location: At discharge from facility

Other Comments: 2,075 lbs/year of TN Offsets are approved to be used for compliance with the TN Cap Load of 0 lbs/year.

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



Enter report title:

Log Cabin Court MHP PA0262137 Outfall 001

Enter comments:

Some comments here

Log Cabin Court MHP PA0262137 Outfall 001

Region ID:	PA
Workspace ID:	PA20210506111945333000
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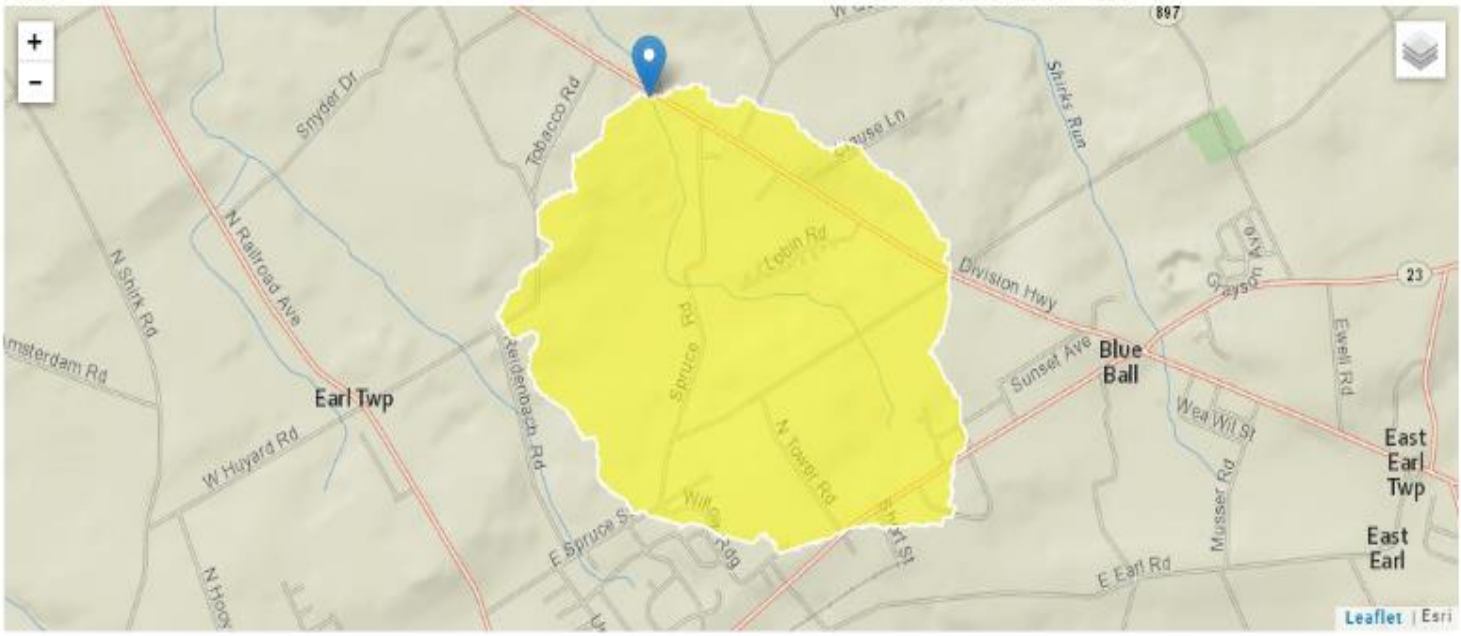
Time:	2021-05-06 07:19:57 -0400



Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	1.49	square miles
BSLOPD	Mean basin slope measured in degrees	2.0273	degrees
ROCKDEP	Depth to rock	5	feet
URBAN	Percentage of basin with urban development	14.0822	percent

Low-Flow Statistics Parameters [Low Flow Region 1]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	1.49	square miles	4.78	1150
BSLOPD	Mean Basin Slope degrees	2.0273	degrees	1.7	6.4
ROCKDEP	Depth to Rock	5	feet	4.13	5.21
URBAN	Percent Urban	14.0822	percent	0	89

Low-Flow Statistics Disclaimers [Low Flow Region 1]

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

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

Statistic	Value	Unit
7 Day 2 Year Low Flow	0.165	ft^3/s
30 Day 2 Year Low Flow	0.253	ft^3/s
7 Day 10 Year Low Flow	0.0585	ft^3/s
30 Day 10 Year Low Flow	0.0937	ft^3/s
90 Day 10 Year Low Flow	0.213	ft^3/s

Low-Flow Statistics Citations

Stuckey, M.H.,2006, Low-flow, base-flow, and mean-flow regression equations for Pennsylvania streams: U.S. Geological Survey Scientific Investigations Report 2006-5130, 84 p.

Application Version: 4.5.2
StreamStats Services Version: 1.2.22
NSS Services Version: 2.1.1

Enter report title:

Log Cabin Court MHP PA0262137 Downstream Point RMI = 0.0

Enter comments:

Some comments here

Log Cabin Court MHP PA0262137 Downstream Point RMI = 0.0

Region ID:	PA
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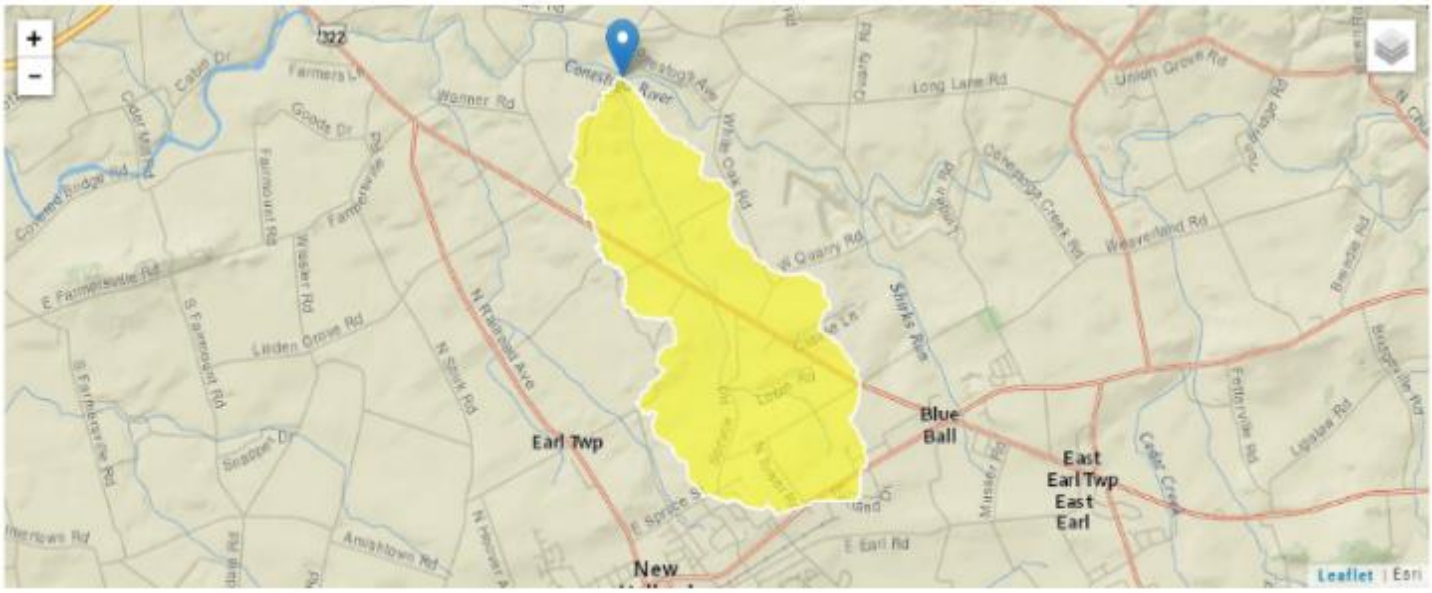

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	2.74	square miles
BSLOPD	Mean basin slope measured in degrees	1.8089	degrees
ROCKDEP	Depth to rock	5	feet
URBAN	Percentage of basin with urban development	8.0522	percent

Low-Flow Statistics Parameters [Low Flow Region 1]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	2.74	square miles	4.78	1150
BSLOPD	Mean Basin Slope degrees	1.8089	degrees	1.7	6.4
ROCKDEP	Depth to Rock	5	feet	4.13	5.21
URBAN	Percent Urban	8.0522	percent	0	89

Low-Flow Statistics Disclaimers [Low Flow Region 1]

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

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

Statistic	Value	Unit
7 Day 2 Year Low Flow	0.237	ft^3/s
30 Day 2 Year Low Flow	0.37	ft^3/s
7 Day 10 Year Low Flow	0.0805	ft^3/s
30 Day 10 Year Low Flow	0.132	ft^3/s
90 Day 10 Year Low Flow	0.315	ft^3/s

Low-Flow Statistics Citations

Stuckey, M.H.,2006, Low-flow, base-flow, and mean-flow regression equations for Pennsylvania streams: U.S. Geological Survey Scientific Investigations Report 2006-5130, 84 p.

Application Version: 4.5.2
StreamStats Services Version: 1.2.22
NSS Services Version: 2.1.1

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	7792	Trib 07792 to Conestoga River	1.600	369.00	1.49	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	0.06	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
Log Cabin	PA0262137	0.0140	0.0140	0.0140	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	7792	Trib 07792 to Conestoga River	1.590	368.00	1.50	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	0.06	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
Nexans Inc.	PA0084247	0.0075	0.0075	0.0075	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	7792	Trib 07792 to Conestoga River	0.000	338.00	2.74	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	0.08	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	0.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	5.00	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	7792	Trib 07792 to Conestoga River

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												
1.600	0.06	0.00	0.06	.0217	0.01894	.338	4.53	13.4	0.05	0.012	21.35	7.00
1.590	0.06	0.00	0.06	.0333	0.00357	.355	5.44	15.33	0.05	1.906	21.69	7.00
Q1-10 Flow												
1.600	0.04	0.00	0.04	.0217	0.01894	NA	NA	NA	0.04	0.014	21.83	7.00
1.590	0.04	0.00	0.04	.0333	0.00357	NA	NA	NA	0.04	2.220	22.22	7.00
Q30-10 Flow												
1.600	0.08	0.00	0.08	.0217	0.01894	NA	NA	NA	0.06	0.010	21.07	7.00
1.590	0.09	0.00	0.09	.0333	0.00357	NA	NA	NA	0.06	1.691	21.37	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	6		

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
07J	7792	Trib 07792 to Conestoga River

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
1.600	Log Cabin	14.4	39.29	14.4	28.84	2	27
1.590	Nexans Inc.	15.31	50	13.94	36.71	2	27

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
1.600	Log Cabin	1.76	8.23	1.76	4.82	2	41
1.590	Nexans Inc.	1.82	15.67	1.73	9.18	2	41

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)		
1.60	Log Cabin	25	25	4.82	4.82	5	5	0	0
1.59	Nexans Inc.	25	25	9.18	9.18	5	5	0	0

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
07J	7792	Trib 07792 to Conestoga River

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
1.600	0.014	21.351	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
4.532	0.338	13.405	0.052
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
8.21	1.231	1.30	0.777
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
7.367	23.067	Owens	6
Reach Travel Time (days)			
0.012			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.001	8.20	1.30	7.38
0.002	8.19	1.30	7.40
0.004	8.18	1.30	7.42
0.005	8.16	1.30	7.44
0.006	8.15	1.30	7.45
0.007	8.14	1.30	7.47
0.008	8.13	1.30	7.48
0.009	8.11	1.29	7.50
0.011	8.10	1.29	7.51
0.012	8.09	1.29	7.53

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
1.590	0.022	21.692	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
5.437	0.355	15.332	0.051
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
9.68	0.765	2.14	0.797
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
7.275	20.929	Owens	6
Reach Travel Time (days)			
1.906			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.191	8.27	1.84	7.99
0.381	7.06	1.58	7.99
0.572	6.03	1.36	7.99
0.763	5.15	1.16	7.99
0.953	4.40	1.00	7.99
1.144	3.76	0.86	7.99
1.334	3.21	0.74	7.99
1.525	2.74	0.63	7.99
1.716	2.34	0.54	7.99
1.906	2.00	0.47	7.99

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
07J	7792	Trib 07792 to Conestoga River

RMI	Name	Permit Number	Disc Flow (mgd)	Parameter	Effl. Limit 30-day Ave. (mg/L)	Effl. Limit Maximum (mg/L)	Effl. Limit Minimum (mg/L)
1.600	Log Cabin	PA0262137	0.014	CBOD5	25		
				NH3-N	4.82	9.64	
				Dissolved Oxygen			5

RMI	Name	Permit Number	Disc Flow (mgd)	Parameter	Effl. Limit 30-day Ave. (mg/L)	Effl. Limit Maximum (mg/L)	Effl. Limit Minimum (mg/L)
1.590	Nexans Inc.	PA0084247	0.007	CBOD5	25		
				NH3-N	9.18	18.36	
				Dissolved Oxygen			5