

Application Type Renewal  
 Facility Type Municipal  
 Major / Minor Minor

**NPDES PERMIT FACT SHEET  
INDIVIDUAL SEWAGE**

Application No. PA0081302  
 APS ID 276590  
 Authorization ID 1518508

**Applicant and Facility Information**

Applicant Name	<u>South Londonderry Township Municipal Authority</u>	Facility Name	<u>South Londonderry Campbelltown West STP</u>
Applicant Address	<u>20 W Market Street Campbelltown, PA 17010</u>	Facility Address	<u>777 S Lingle Road Campbelltown, PA 17010</u>
Applicant Contact	<u>Samuel Blauch</u>	Facility Contact	<u>Samuel Blauch</u>
Applicant Phone	<u>(717) 781-9238</u>	Facility Phone	<u>(717) 781-9238</u>
Client ID	<u>43038</u>	Site ID	<u>250911</u>
Ch 94 Load Status	<u>Not Overloaded</u>	Municipality	<u>South Londonderry Township</u>
Connection Status	<u>No Limitations</u>	County	<u>Lebanon</u>
Date Application Received	<u>March 4, 2025</u>	EPA Waived?	<u>Yes</u>
Date Application Accepted	<u>March 18, 2025</u>	If No, Reason	<u></u>
Purpose of Application	<u>Permit renewal for discharge of treated sewage.</u>		

**Summary of Review**

**1.0 General Discussion**

This fact sheet supports the renewal of an existing NPDES permit for discharge of treated domestic wastewater from Campbelltown West wastewater treatment plant located in South Londonderry Township, Lebanon County. South Londonderry Township Municipal Authority owns and operates the wastewater treatment plant, which provides sanitary services to South Londonderry Township. The sewer collection system is not combined and there is no bypasses or overflows approved in the collection system. The oxidation ditch treatment plant at the site has a hydraulic design capacity of 0.215 MGD and an organic design capacity of 453 lbs/day- BOD5. The facility discharge to Spring Creek which is classified as Warm Water Fishes (WWF). The existing NPDES permit was issued on August 06, 2020 with an effective date of September 1, 2020 and expiration date of August 31, 2025. The applicant submitted a timely NPDES renewal application to the Department and is currently operating under the terms and conditions in the existing permit under administrative extension provisions pending Department action on the renewal application. A topographic map showing the discharge location is presented in attachment A.

**1.1 Sludge use and disposal description and location(s):**

Digested sludge hauled out periodically to Annville Township STP for further processing.

**1.2 Public Participation**

Approve	Deny	Signatures	Date
X		<i>J. Pascal Kwedza</i> J. Pascal Kwedza, P.E. / Environmental Engineer	February 3, 2026
X		Daniel W. Martin Daniel W. Martin, P.E. / Environmental Engineer Manager	February 4, 2026

**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.

**1.3 Changes to the existing Permit.**

Quarterly monitoring of E. coli has been added to the permit.

1.4 Discharge, Receiving Waters and Water Supply Information			
Outfall No.	<u>001</u>	Design Flow (MGD)	<u>.215</u>
Latitude	<u>40° 16' 41.14"</u>	Longitude	<u>-76° 35' 14.88"</u>
Quad Name	<u>Palmyra</u>	Quad Code	<u>1633</u>
Wastewater Description: <u>Sewage Effluent</u>			
Receiving Waters	<u>Spring Creek</u>	Stream Code	<u>09507</u>
NHD Com ID	<u>56400739</u>	RMI	<u>6.5</u>
Drainage Area	<u>1.90</u>	Yield (cfs/mi <sup>2</sup> )	<u>0.14</u>
Q <sub>7-10</sub> Flow (cfs)	<u>0.20</u>	Q <sub>7-10</sub> Basis	<u>USGS Gage Station</u>
Elevation (ft)	<u>440</u>	Slope (ft/ft)	<u></u>
Watershed No.	<u>7-D</u>	Chapter 93 Class.	<u>WWF</u>
Existing Use	<u></u>	Existing Use Qualifier	<u></u>
Exceptions to Use	<u></u>	Exceptions to Criteria	<u></u>
Assessment Status	<u>Impaired</u>		
Cause(s) of Impairment	<u>Water/Flow Variability, Siltation</u>		
Source(s) of Impairment	<u>Natural Sources, Agriculture</u>		
TMDL Status	<u></u>	Name	<u></u>
Background/Ambient Data		Data Source	
pH (SU)	<u></u>		<u></u>
Temperature (°F)	<u></u>		<u></u>
Hardness (mg/L)	<u></u>		<u></u>
Other:	<u></u>		<u></u>
Nearest Downstream Public Water Supply Intake	<u>Suez Water</u>		
PWS Waters	<u>Swatara Creek</u>	Flow at Intake (cfs)	<u></u>
PWS RMI	<u></u>	Distance from Outfall (mi)	<u>&lt;16</u>

Changes Since Last Permit Issuance: None

**1.4.1 Water Supply Intake**

The nearest downstream water supply intake is approximately 16 miles downstream by Suez Water on Swatara Creek near Hummelstown, Dauphin County. No impact is expected from this discharge on the intake.

Treatment Facility Summary				
<b>Treatment Facility Name:</b> S Londonderry Campbell W STP				
<b>WQM Permit No.</b>		<b>Issuance Date</b>		
Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage			Gas Chlorine	0.215
Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.215	536	Not Overloaded		

Changes Since Last Permit Issuance: None

**2.1 Treatment Facility**

The treatment plant consists of muffin monster, bar screen as back-up, 1 oxidation ditch, 3 clarifiers 1 online and the rest used only during high flows, 1 chlorine contact tank, 1 de-chlorination tank, post aeration system, 2 sludge digesters and 4 reed beds. Ferric chloride is added for phosphorus removal, chlorine gas is used for disinfection, sulfur dioxide is added for de-chlorination and lime added for pH adjustment. Portions of the township's flow originally intended for the West Plant is pumped to the East plant via the Carriage Park Pump Station to preserve capacity at the West Plant for new development.

3.0 Existing Effluent Limitations and Monitoring Requirements

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) <sup>(1)</sup>		Concentrations (mg/L)				Minimum <sup>(2)</sup> 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 Inst Min	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	5.0 Daily Min	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.1	XXX	0.30	1/day	Grab
CBOD5 Nov 1 - Apr 30	44.8	71.7	XXX	25	40	50	1/week	24-Hr Composite
CBOD5 May 1 - Oct 31	35.8	53.7	XXX	20	30	40	1/week	24-Hr Composite
BOD5 Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	1/week	24-Hr Composite
TSS	53.7	80.6	XXX	30	45	60	1/week	24-Hr Composite
TSS Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	1/week	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/week	Grab
Nitrate-Nitrite	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/month	24-Hr Composite
Total Nitrogen	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/month	Calculation
Ammonia Nov 1 - Apr 30	16.1	XXX	XXX	9.0	XXX	18	1/week	24-Hr Composite
Ammonia May 1 - Oct 31	5.3	XXX	XXX	3.0	XXX	6	1/week	24-Hr Composite
TKN	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/month	24-Hr Composite

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) <sup>(1)</sup>		Concentrations (mg/L)				Minimum <sup>(2)</sup> Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Total Phosphorus	3.5	XXX	XXX	2.0	XXX	4	1/week	24-Hr Composite

**3.1 Compliance History**

**3.1.1 DMR Data for Outfall 001 (from December 1, 2024 to November 30, 2025)**

Parameter	NOV-25	OCT-25	SEP-25	AUG-25	JUL-25	JUN-25	MAY-25	APR-25	MAR-25	FEB-25	JAN-25	DEC-24
Flow (MGD) Average Monthly	0.121	0.116	0.117	0.117	0.129	0.131	0.128	0.115	0.119	0.113	0.115	0.123
Flow (MGD) Daily Maximum	0.152	0.147	0.147	0.150	0.273	0.329	0.198	0.145	0.149	0.155	0.141	0.154
pH (S.U.) Instantaneous Minimum	6.64	6.78	6.84	6.81	6.85	6.32	6.45	6.55	6.43	6.07	6.47	6.62
pH (S.U.) Instantaneous Maximum	7.32	7.28	7.37	7.31	7.36	7.29	7.16	7.20	7.11	7.09	7.23	7.21
DO (mg/L) Daily Minimum	5.67	6.36	6.00	5.78	5.44	5.32	5.43	5.08	5.55	5.87	5.81	5.25
TRC (mg/L) Average Monthly	< 0.02	< 0.03	< 0.03	< 0.02	< 0.03	< 0.02	< 0.02	< 0.03	< 0.02	< 0.02	< 0.03	< 0.02
TRC (mg/L) Instantaneous Maximum	0.11	0.14	0.28	0.18	0.13	0.14	0.06	0.08	0.09	0.10	0.10	0.09
CBOD5 (lbs/day) Average Monthly	3.22	< 2.14	< 2.56	< 2.22	< 2.56	3.40	4.51	2.98	4.66	2.63	2.95	< 3.08
CBOD5 (lbs/day) Weekly Average	4.84	3.07	3.23	3.25	4.26	4.43	6.61	3.68	6.89	3.33	4.04	3.77
CBOD5 (mg/L) Average Monthly	3.29	< 2.16	< 2.75	< 2.23	< 2.52	3.38	4.26	3.23	4.80	2.88	3.16	< 3.13

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South Londonderry Campbelltown West STP**

**NPDES Permit No. PA0081302**

CBOD5 (mg/L) Weekly Average	4.80	2.67	3.80	2.80	3.90	4.50	5.70	3.90	7.00	3.80	4.40	4.00
BOD5 (lbs/day) Raw Sewage Influent   Average Monthly	145	124	137	162	193	193	231	212	203	177	238	271
BOD5 (lbs/day) Raw Sewage Influent   Daily Maximum	250	222	166	257	241	263	372	253	220	192	296	401
BOD5 (mg/L) Raw Sewage Influent   Average Monthly	152	123	146	163	194	191	218	229	211	192	253	273
TSS (lbs/day) Average Monthly	< 4.88	< 5.32	< 8.03	< 5.97	< 8.74	< 5.05	< 7.03	< 4.62	6.49	< 5.28	< 4.87	< 5.50
TSS (lbs/day) Raw Sewage Influent   Average Monthly	111	167	150	127	205	112	174	153	100	86	94	98
TSS (lbs/day) Raw Sewage Influent   Daily Maximum	134	253	212	174	329	162	236	231	188	114	142	212
TSS (lbs/day) Weekly Average	< 5.05	6.45	11.91	8.51	14.14	< 5.21	9.76	< 4.84	7.47	6.94	5.40	7.06
TSS (mg/L) Average Monthly	< 5.00	< 5.36	< 8.50	< 6.25	< 8.80	< 5.00	< 6.60	< 5.00	6.75	< 5.75	< 5.20	< 5.50
TSS (mg/L) Raw Sewage Influent   Average Monthly	115	173	161	129	206	110	163	165	104	91	101	98
TSS (mg/L) Weekly Average	< 5.00	5.90	12.00	10.00	15.00	5.00	9.00	5.00	8.00	8.00	6.00	7.00
Fecal Coliform (No./100 ml) Geometric Mean	3	11	6	6	9	10	7	38	3	8	9	20
Fecal Coliform (No./100 ml) Instantaneous Maximum	11	54	36	30	25	29	21	97	13	36	18	65
Nitrate-Nitrite (mg/L) Daily Maximum	45.40	43.60	34.00	32.70	27.60	37.90	43.00	37.50	37.60	39.20	37.20	35.80
Total Nitrogen (mg/L) Daily Maximum	< 46.40	< 44.60	< 35.00	< 33.70	< 28.60	< 38.90	< 44.00	< 38.50	< 38.60	< 40.20	< 38.20	< 36.80

Ammonia (lbs/day) Average Monthly	< 0.192	< 0.159	0.191	< 1.253	1.098	< 0.141	< 0.154	< 0.093	< 0.483	< 0.097	< 0.542	< 0.129
Ammonia (mg/L) Average Monthly	< 0.200	< 0.161	0.209	< 1.313	1.048	< 0.140	< 0.146	< 0.100	< 0.500	< 0.105	< 0.572	< 0.129
TKN (mg/L) Daily Maximum	< 1.00	< 1.00	1.60	< 1.00	4.40	1.50	1.30	< 1.00	2.80	< 1.00	2.50	< 1.00
Total Phosphorus (lbs/day) Average Monthly	0.36	0.50	0.57	0.67	1.17	1.08	0.89	0.41	0.63	0.24	0.36	0.37
Total Phosphorus (mg/L) Average Monthly	0.37	0.50	0.61	0.68	1.16	1.07	0.82	0.44	0.66	0.27	0.38	0.37

**3.1.2 Summary of DMRs:**

DMRs review for the facility for the last 12 months of operation, presented on the table above in section 3.1.1 indicates permit limits have been met consistently. No effluent violations noted during the period reviewed.

**3.1.3 Summary of Inspections:**

The facility has been inspected a couple of times during the previous permit cycle. No effluent violations were found during plant inspections. The facility is operated and maintained well.

**4.0 Development of Effluent Limitations**

<b>Outfall No.</b>	<u>001</u>	<b>Design Flow (MGD)</b>	<u>.215</u>
<b>Latitude</b>	<u>40° 16' 53.06"</u>	<b>Longitude</b>	<u>-76° 35' 27.31"</u>
<b>Wastewater Description:</b> <u>Sewage Effluent</u>			

**4.1 Basis for Effluent Limitations**

In general, the Clean Water Act (CWA) requires that the effluent limits for a particular pollutant be the more stringent of either technology-based limits or water quality-based limits. Technology-based limits are set according to the level of treatment that is achievable using available technology. A water quality-based effluent limit is designed to ensure that the water quality standards applicable to a waterbody are being met and may be more stringent than technology-based effluent limits.

**4.1.1 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 <sub>5</sub>	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)

**4.2 Mass-Based Limits**

The federal regulation at 40 CFR 122.45(f) requires that effluent limits be expressed in terms of mass, if possible. The regulation at 40 CFR 122.45(b) requires that effluent limitations for POTWs be calculated based on the design flow of the facility. The mass-based limits are expressed in pounds per day and are calculated as follows: Mass based limit (lb/day) = concentration limit (mg/L) × design flow (mgd) × 8.34.

**4.3 Water Quality-Based Limitations**

**4.3.1 WQM 7.0 Stream Model**

WQM 7.0 is a water quality model DEP utilizes to establish appropriate effluent limits for CBOD<sub>5</sub>, NH<sub>3</sub>-N and DO in permits. The model simulates mixing and degradation of NH<sub>3</sub>-N in the stream and compares calculated instream NH<sub>3</sub>-N concentrations to NH<sub>3</sub>-N water quality criteria and also simulates mixing and consumption of D.O. in the stream due to the degradation of CBOD<sub>5</sub> and NH<sub>3</sub>-N and compares calculated instream D.O. concentrations to D.O. water quality criteria and recommends effluent limits.

### 4.3.2 Receiving Stream

The receiving stream is Spring Creek. According to 25 PA § 93.9o, this stream is protected for Warm Water Fishes (WWF). It is located in Drainage List o and State Watershed 7-D. It has been assigned stream code 09507. According to the Department's Integrated Water Quality Monitoring and Assessment Report, Spring Creek is impaired due to siltation and flow variability. The Stream is listed as Category 4c Waterbodies, this pollution type does not require a TMDL. See 303d listed streams section of the report for further discussion.

### 4.3.3 Stream flows

Streamflows for the water quality analysis were determined by correlating with the yield of USGS gage No. 01573560 on Swatara Creek near Hershey. The  $Q_{7-10}$  and drainage area at the gage is 67.7ft<sup>3</sup>/s and 483mi<sup>2</sup> respectively. The resulting yields are as follows:

- $Q_{7-10} = (67.7\text{ft}^3/\text{s})/483 \text{ mi}^2 = 0.14\text{ft}^3/\text{s}/ \text{mi}^2$
- $Q_{30-10} / Q_{7-10} = 0.89$
- $Q_{1-10} / Q_{7-10} = 1.23$

The drainage area at the point of discharge calculated using StreamStats = 1.53 mi<sup>2</sup>.

The summer  $Q_{7-10}$  at discharge = 1.53 mi<sup>2</sup> x 0.14 ft<sup>3</sup>/s/mi<sup>2</sup> = 0.21 ft<sup>3</sup>/s.

### 4.3.4 NH<sub>3</sub>N Calculations

NH<sub>3</sub>N calculations will be based on the Department's Implementation Guidance of Section 93.7 Ammonia Criteria, dated 11/4/97 (ID No. 391-2000-013). The following data is necessary to determine the instream NH<sub>3</sub>N criteria used in the attached computer model of the stream:

- Discharge pH = 6.6 (DMR median)
- Discharge Temperature = 25 ° C (Default)
- Stream pH = 7.0 ((Default)
- Stream Temperature = 20 °C ((Default)
- Background NH<sub>3</sub>-N = 0.0 (Default)
- Discharge flow = 0.02MGD

### 4.3.5 CBOD<sub>5</sub> & NH<sub>3</sub>-N

WQM7.0 is a steady state model that simplifies many natural processes into a reach-by-reach simulation was used for the water quality analysis. The attached result of the WQM 7.0 stream model (attachment B) indicates that an average monthly limit of 25mg/l is adequate to protect the water quality of the stream. However due to anti-backsliding, the previous permit limit of 20mg/l for the summer months and 25mg/l for winter months will remain. Past DMRs and inspection reports show that the STP has been consistently achieving these limits. . Mass limits are calculated for AMLs and AWLs following the formula listed in section 4.2 above.

The attached model results of the WQM 7.0 stream model (attachment B) also indicates that a summer limit of 3.0 mg/l NH<sub>3</sub> as a monthly average is necessary to protect the aquatic life from toxicity effects. Winter limit is 3 times the summer. This is consistent with the existing permit. Mass limits are calculated for AMLs following the formula listed in section 4.2 above.

### 4.3.6 Dissolved Oxygen

The existing permit contains a limit of 5 mg/l for Dissolved Oxygen (DO). DEP's Technical Guidance for the Development and Specification of Effluent Limitations (362-0400-001, 10/97) suggests that either the adopted minimum D.O. criteria for the receiving stream or the effluent level determined through water quality modeling be used for the limit. Since the WQM 7.0 model was run using a minimum D.O. of 5.0 mg/l as well, this limit will be continued in the renewed permit with a daily monitoring requirement per DEP guidance.

#### **4.3.7 Total Suspended Solids(TSS):**

There is no water quality criterion for TSS. The existing limit of 30 mg/l AML based on the minimum level of effluent quality attainable by secondary treatment as defined in 40 CFR 133.102b(1), 40 CFR 133.102b(1), 25 PA § 92a.47(a)(1) and 92a.47(a)(2) will remain in the permit. Mass limits are calculated for AMLs and AWLs following the formula listed in section 4.2 above.

#### **4.3.8 Chesapeake Bay Strategy:**

The Department formulated a strategy in April 2007, to comply with the EPA and Chesapeake Bay requirements to reduce point source loadings of Total Nitrogen (TN) and Total Phosphorus (TP) to the Bay. In the Strategy, sewage dischargers have been prioritized by DEP based on their delivered TN loadings to the Bay. The highest priority (Phases 1, 2, and 3) dischargers received annual loading caps based on their design flow on August 29, 2005 and concentrations of 6 mg/l TN and 0.8 mg/l TP. Phase 4 (0.2 -0.4mgd) and Phase 5(below 0.2mgd) are required to monitor and report TN and TP during permit renewal and any facility in Phases 4 and 5 that undergoes expansion is subjected to cap load right away. EPA published Chesapeake Bay TMDL in December of 2010. In order to address the TMDL, Pennsylvania developed Chesapeake Watershed Implementation Plan (WIP) Phase 1, Phase 2 and currently Phase 3 WIP and a supplement to the WIPs to be implemented with the original Chesapeake Bay Strategy.

Phase 3 WIP and the supplement to the WIP, indicates renewing permits for significant dischargers would follow the same phased approach formulated in the original Bay strategy whilst Phase 4 and Phase 5 will be required to monitor and report TN and TP during permit renewals. This facility is, classified as a phase 4, and had been monitoring and reporting Nitrate-Nitrite as N, Total Kjeldahl Nitrogen and Total Nitrogen monthly and will continue during this permit cycle. There is limitation on Total Phosphorus in the permit, no monitoring is required.

#### **4.3.9 Phosphorus**

The existing phosphorus limitation of 2mg/l to control phosphorus discharges to the Lower Susquehanna River Basin is superseded by the Chesapeake Bay Strategy but would be continued due to anti-backsliding.

#### **4.3.10 Total Residual Chlorine:**

The attached computer printout presented in attachment C utilizes the equations and calculations as presented in the Department's 2003 Implementation Guidance for Residual Chlorine (TRC) (ID # 391-2000-015) for developing chlorine limitations. The results presented in attachment C indicates that a water quality limit of 0.09 mg/l and 0.31 mg/l IMAX would be needed to prevent toxicity concerns. The recommended limit is consistent with existing permit of <0.1 mg/l on an average and 0.30 mg/l maximum. Past DMRs document that the STP has been capable of achieving about 0.1 mg/l on an average and 0.3 mg/l maximum. Therefore, <0.1 mg/l on an average and 0.30 mg/l maximum is again recommended for the current permit renewal

#### **4.3.11 Toxics**

The facility treats mainly domestic sewage; there are no toxic parameters of concern associated with this discharge.

#### **4.3.12 Influent BOD and TSS Monitoring**

The permit will include influent BOD5 and TSS monitoring at the same frequency as is done for effluent in order to implement Chapter 94.12 and assess percent removal requirements.

#### **4.3.13 Fecal Coliform and E. Coli**

The existing Fecal Coliform limit is consistent with the technology limits recommended in 92a.47(a)(4) and (a)(5) and will remain in the permit. In March of 2021, EPA approved DEP's Triennial Review of Water Quality Standards, which included a new swimming season criterion for E. coli. As a result, DEP is including monitoring requirements for E. Coli in new and renewed sewage permits above 2000gpd. Monitoring frequency is based on annual average flow as follows: 1/month for design flows  $\geq$  1 MGD, 1/quarter for design flows  $\geq$  0.05 and  $<$  1 MGD and 1/year for design flows of 0.002 and  $<$  0.05 MGD. Your discharge of 0.215 MGD requires 1/quarter monitoring as included in the permit.

#### **4.3.13 Pretreatment Requirements**

The design annual average flow of the treatment plant is 0.215 MGD and the facility receives flow from no significant Industrial users. There is no approved pretreatment program for the facility, however, the permit contains standard conditions requiring the permittee to monitor and control industrial users if applicable.

#### **5.0 Other Requirements**

##### **5.1 Anti-backsliding**

Not applicable to this permit

##### **5.2 Stormwater:**

No storm water outfall is associated with this facility

##### **5.3 Special Permit Conditions**

The permit will contain the following special conditions:

1. Stormwater Prohibition. 2. Approval Contingencies, 3. Management of collected screenings, slurries, sludges and other solids 4. Restrictions on flow acceptance under certain conditions. 5. Chlorine minimization

##### **5.4 Anti-Degradation (93.4)**

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.

##### **5.5 Class A Wild Trout Fisheries**

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

##### **5.6 303d Listed Streams:**

The discharge is located on a 303d listed stream segment as impaired for aquatic life and recreational use due to pathogens, siltation and flow variability. The cause of the impairment for pathogens is unknown, siltation is agriculture and Urban Runoff/Storm Sewers. No action is warranted at this time.

##### **5.7 Basis for Effluent and Surface Water Monitoring**

Section 308 of the CWA and federal regulation 40 CFR 122.44(i) require monitoring in permits to determine compliance with effluent limitations. Monitoring may also be required to gather effluent and surface water data to determine if additional effluent limitations are required and/or to monitor effluent impacts on receiving water quality. The permittee is responsible for conducting the monitoring and for reporting results on Discharge Monitoring Reports (DMRs).

##### **5.8 Effluent Monitoring**

Monitoring frequencies are based on the nature and effect of the pollutant, as well as a determination of the minimum sampling necessary to adequately monitor the facility's performance. Permittees have the option of taking more frequent samples than are required under the permit. These samples can be used for averaging if they are conducted using EPA-approved test methods (generally found in 40 CFR 136) and if the Method Detection Limits are less than the effluent limits. The sampling location must be after the last treatment unit and prior to discharge to the receiving water. If no discharge occurs during the reporting period, "no discharge" shall be reported on the DMR.

**6.0 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) <sup>(1)</sup>		Concentrations (mg/L)				Minimum <sup>(2)</sup> 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 Inst Min	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	5.0 Daily Min	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.1	XXX	0.30	1/day	Grab
CBOD5 Nov 1 - Apr 30	44.8	71.7	XXX	25	40	50	1/week	24-Hr Composite
CBOD5 May 1 - Oct 31	35.8	53.7	XXX	20	30	40	1/week	24-Hr Composite
BOD5 Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	1/week	24-Hr Composite
TSS	53.7	80.6	XXX	30	45	60	1/week	24-Hr Composite
TSS Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	1/week	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/week	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/quarter	Grab
Nitrate-Nitrite	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/month	24-Hr Composite

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

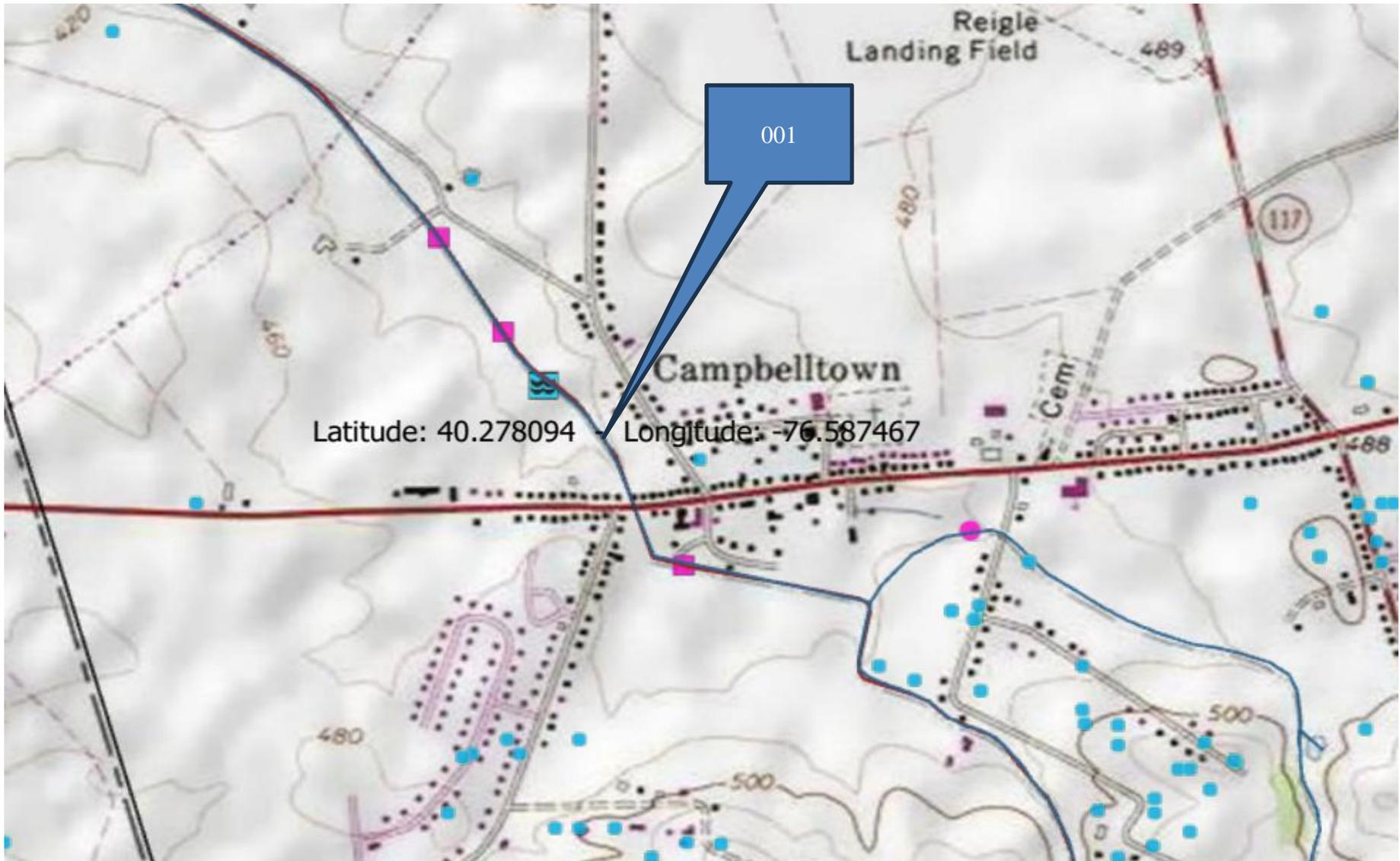
Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) <sup>(1)</sup>		Concentrations (mg/L)				Minimum <sup>(2)</sup> Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Total Nitrogen	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/month	Calculation
Ammonia Nov 1 - Apr 30	16.1	XXX	XXX	9.0	XXX	18	1/week	24-Hr Composite
Ammonia May 1 - Oct 31	5.3	XXX	XXX	3.0	XXX	6	1/week	24-Hr Composite
TKN	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/month	24-Hr Composite
Total Phosphorus	3.5	XXX	XXX	2.0	XXX	4	1/week	24-Hr Composite

Compliance Sampling Location: At Outfall 001

<b>7.0 Tools and References Used to Develop Permit</b>	
<input checked="" type="checkbox"/>	WQM for Windows Model (see Attachment <b>B</b> )
<input type="checkbox"/>	Toxics Management Spreadsheet (see Attachment <span style="background-color: yellow;">      </span> )
<input checked="" type="checkbox"/>	TRC Model Spreadsheet (see Attachment <b>C</b> )
<input type="checkbox"/>	Temperature Model Spreadsheet (see Attachment <span style="background-color: yellow;">      </span> )
<input checked="" type="checkbox"/>	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
<input checked="" type="checkbox"/>	Technical Guidance for the Development and Specification of Effluent Limitations, 386-0400-001, 10/97.
<input type="checkbox"/>	Policy for Permitting Surface Water Diversions, 386-2000-019, 3/98.
<input type="checkbox"/>	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 386-2000-018, 11/96.
<input type="checkbox"/>	Technology-Based Control Requirements for Water Treatment Plant Wastes, 386-2183-001, 10/97.
<input type="checkbox"/>	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 386-2183-002, 12/97.
<input type="checkbox"/>	Pennsylvania CSO Policy, 386-2000-002, 9/08.
<input checked="" type="checkbox"/>	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
<input type="checkbox"/>	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 386-2000-008, 4/97.
<input checked="" type="checkbox"/>	Determining Water Quality-Based Effluent Limits, 386-2000-004, 12/97.
<input type="checkbox"/>	Implementation Guidance Design Conditions, 386-2000-007, 9/97.
<input checked="" type="checkbox"/>	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.
<input type="checkbox"/>	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 386-2000-012, 10/1997.
<input type="checkbox"/>	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 386-2000-009, 3/99.
<input type="checkbox"/>	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 386-2000-015, 5/2004.
<input checked="" type="checkbox"/>	Implementation Guidance for Section 93.7 Ammonia Criteria, 386-2000-022, 11/97.
<input type="checkbox"/>	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 386-2000-013, 4/2008.
<input checked="" type="checkbox"/>	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 386-2000-011, 11/1994.
<input type="checkbox"/>	Implementation Guidance for Temperature Criteria, 386-2000-001, 4/09.
<input checked="" type="checkbox"/>	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 386-2000-021, 10/97.
<input type="checkbox"/>	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.
<input type="checkbox"/>	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 386-2000-005, 3/99.
<input checked="" type="checkbox"/>	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.
<input checked="" type="checkbox"/>	Design Stream Flows, 386-2000-003, 9/98.
<input type="checkbox"/>	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.
<input type="checkbox"/>	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 386-3200-001, 6/97.
<input checked="" type="checkbox"/>	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
<input checked="" type="checkbox"/>	SOP: Establishing Effluent limitations for individual sewage permit.
<input type="checkbox"/>	Other: <span style="background-color: yellow;">      </span>

Attachments

A. Topographical Map



**B. WQM Model Results**

**WQM 7.0 Effluent Limits**

<u>SWP Basin</u>		<u>Stream Code</u>	<u>Stream Name</u>				
07D		9507	SPRING CREEK				
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)
6.500	Campbelltown W	PA0081302	0.215	CBOD5	25		
				NH3-N	3.11	6.22	
				Dissolved Oxygen			5

**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
07D	9507	SPRING CREEK	6.500	440.00	1.53	0.00000	0.00	<input checked="" type="checkbox"/>

**Stream Data**

Design Cond.	LFY	Trib Flow	Stream Flow	Rch Trav Time	Rch Velocity	WD Ratio	Rch Width	Rch Depth	Tributary Temp	pH	Stream Temp	pH
	(cfsm)	(cfs)	(cfs)	(days)	(fps)		(ft)	(ft)	(°C)		(°C)	
Q7-10	0.140	0.00	0.00	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
Campbelltown W	PA0081302	0.2150	0.2150	0.2150	0.000	25.00	6.50

**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
07D	9507	SPRING CREEK	3.500	400.00	5.10	0.00000	0.00	<input checked="" type="checkbox"/>

**Stream Data**

Design Cond.	LFY	Trib Flow	Stream Flow	Rch Trav Time	Rch Velocity	WD Ratio	Rch Width	Rch Depth	Tributary Temp	pH	Stream Temp	pH
	(cfsm)	(cfs)	(cfs)	(days)	(fps)		(ft)	(ft)	(°C)		(°C)	
Q7-10	0.140	0.00	0.00	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**

<u>SWP Basin</u>		<u>Stream Code</u>			<u>Stream Name</u>							
07D		9507			SPRING CREEK							
RMI	Stream Flow	PWS With	Net Stream Flow	Disc Analysis Flow	Reach Slope	Depth	Width	W/D Ratio	Velocity	Reach Trav Time	Analysis Temp	Analysis pH
	(cfs)	(cfs)	(cfs)	(cfs)	(ft/ft)	(ft)	(ft)		(fps)	(days)	(°C)	
<b>Q7-10 Flow</b>												
6.500	0.21	0.00	0.21	.3326	0.00253	.469	9.05	19.3	0.13	1.422	23.04	6.64
<b>Q1-10 Flow</b>												
6.500	0.19	0.00	0.19	.3326	0.00253	NA	NA	NA	0.13	1.457	23.18	6.62
<b>Q30-10 Flow</b>												
6.500	0.26	0.00	0.26	.3326	0.00253	NA	NA	NA	0.14	1.355	22.79	6.66

**WQM 7.0 Modeling Specifications**

Parameters	Both	Use Inputted Q1-10 and Q30-10 Flows	<input checked="" type="checkbox"/>
WLA Method	EMPR	Use Inputted W/D Ratio	<input type="checkbox"/>
Q1-10/Q7-10 Ratio	0.89	Use Inputted Reach Travel Times	<input type="checkbox"/>
Q30-10/Q7-10 Ratio	1.23	Temperature Adjust Kr	<input checked="" type="checkbox"/>
D.O. Saturation	90.00%	Use Balanced Technology	<input checked="" type="checkbox"/>
D.O. Goal	5		

**WQM 7.0 Wasteload Allocations**

SWP Basin    Stream Code                      Stream Name  
 07D                      9507    SPRING CREEK

**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
	6.500 Campbelltown W	16.53	26	16.53	26	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
	6.500 Campbelltown W	1.73	3.11	1.73	3.11	0	0

**Dissolved Oxygen Allocations**

RMI	Discharge Name	<u>CBOD5</u>		<u>NH3-N</u>		<u>Dissolved Oxygen</u>		Critical Reach	Percent Reduction
		Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)		
	6.50 Campbelltown W	25	25	3.11	3.11	5	5	0	0

**WQM 7.0 D.O. Simulation**

<u>SWP Basin</u>	<u>Stream Code</u>	<u>Stream Name</u>		
07D	9507	SPRING CREEK		
<u>RMI</u>	<u>Total Discharge Flow (mgd)</u>	<u>Analysis Temperature (°C)</u>	<u>Analysis pH</u>	
6.500	0.215	23.041	6.635	
<u>Reach Width (ft)</u>	<u>Reach Depth (ft)</u>	<u>Reach WDRatio</u>	<u>Reach Velocity (fps)</u>	
9.048	0.469	19.304	0.129	
<u>Reach CBOD5 (mg/L)</u>	<u>Reach Kc (1/days)</u>	<u>Reach NH3-N (mg/L)</u>	<u>Reach Kn (1/days)</u>	
15.99	1.244	1.89	0.885	
<u>Reach DO (mg/L)</u>	<u>Reach Kr (1/days)</u>	<u>Kr Equation</u>	<u>Reach DO Goal (mg/L)</u>	
6.270	24.017	Owens	5	
<u>Reach Travel Time (days)</u>	<u>Subreach Results</u>			
1.422	<u>TravTime (days)</u>	<u>CBOD5 (mg/L)</u>	<u>NH3-N (mg/L)</u>	<u>D.O. (mg/L)</u>
	0.142	13.05	1.67	7.12
	0.284	10.65	1.47	7.40
	0.427	8.69	1.30	7.61
	0.569	7.09	1.14	7.79
	0.711	5.78	1.01	7.80
	0.853	4.72	0.89	7.80
	0.995	3.85	0.78	7.80
	1.138	3.14	0.69	7.80
	1.280	2.56	0.61	7.80
	1.422	2.09	0.54	7.80

C. TRC Calculations Results

1A	B	C	D	E	F	G
2	<b>TRC EVALUATION</b>		<b>Enter Facility Name in E3</b>			
3	<b>Input appropriate values in B4:B8 and E4:E7</b>					
4	0.2	= Q stream (cfs)	0.5	= CV Daily		
5	0.215	= 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)		
		= % Factor of Safety (FOS)		=Decay Coefficient (K)		
10	<b>Source</b>	<b>Reference</b>	<b>AFC Calculations</b>		<b>Reference</b>	<b>CFC Calculations</b>
11	TRC	1.3.2.iii	WLA afc = 0.211		1.3.2.iii	WLA cfc = 0.198
12	PENTOXSD TRC	5.1a	LTAMULT afc = 0.373		5.1c	LTAMULT cfc = 0.581
13	PENTOXSD TRC	5.1b	LTA_afc = 0.079		5.1d	LTA_cfc = 0.115
14						
15	<b>Source</b>	<b>Effluent Limit Calculations</b>				
16	PENTOXSD TRC	5.1f	AML MULT = 1.231			
17	PENTOXSD TRC	5.1g	AVG MON LIMIT (mg/l) = 0.097		AFC	
18			INST MAX LIMIT (mg/l) = 0.316			
	WLA afc	$(.019/e^{-k \cdot AFC\_tc}) + [(AFC\_Yc \cdot Qs \cdot .019 / Qd \cdot e^{-k \cdot AFC\_tc}) \dots + Xd + (AFC\_Yc \cdot Qs \cdot Xs / Qd)] \cdot (1 - FOS / 100)$				
	LTAMULT afc	$EXP((0.5 \cdot LN(cvh^2 + 1)) - 2.326 \cdot LN(cvh^2 + 1)^{0.5})$				
	LTA_afc	wla_afc * LTAMULT_afc				
	WLA_cfc	$(.011/e^{-k \cdot CFC\_tc}) + [(CFC\_Yc \cdot Qs \cdot .011 / Qd \cdot e^{-k \cdot CFC\_tc}) \dots + Xd + (CFC\_Yc \cdot Qs \cdot Xs / Qd)] \cdot (1 - FOS / 100)$				
	LTAMULT_cfc	$EXP((0.5 \cdot LN(cvd^2 / no\_samples + 1)) - 2.326 \cdot LN(cvd^2 / no\_samples + 1)^{0.5})$				
	LTA_cfc	wla_cfc * LTAMULT_cfc				
	AML MULT	$EXP(2.326 \cdot LN((cvd^2 / no\_samples + 1)^{0.5}) - 0.5 \cdot LN(cvd^2 / no\_samples + 1))$				
	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)				