pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Northwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0094676**
Facility Type	**Non-Municipal**	APS ID	**700235**
Major / Minor	**Minor**	Authorization ID	**1313956**

NPDES PERMIT FACT SHEET INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Twin Lakes Center Inc.**	Facility Name	**Twin Lakes Center**
Applicant Address	P.O. Box 909	Facility Address	224 Twin Lake Road
	Somerset, PA 15501		Somerset, PA 15501-7727
Applicant Contact	Nicholas Ash	Facility Contact	Matthew Hayman (Operator)
Applicant Phone	(814) 443-3639	Facility Phone	(814) 279-5301
Client ID	107526	Site ID	259423
Ch 94 Load Status	Not Overloaded	Municipality	Somerset Township
Connection Status		County	Somerset
Date Application Received	April 29, 2020	EPA Waived?	Yes
Date Application Accepted	May 11, 2020	If No, Reason	

Purpose of Application: Renewal of a NPDES Permit for an existing discharge of treated sewage.

Summary of Review

No changes to the discharge quality or quantity were proposed as part of this permit renewal.

The facility started using eDMR for reporting in August 2017.

There are currently no open violations listed in EFACTS for this permittee (2/26/2021).

Sludge use and disposal description and location(s): Hauled offsite to Summerset STP for further processing.

Public Participation

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

Approve	Deny	Signatures	Date
X		Adam Pesek Adam J. Pesek, E.I.T. / Environmental Engineering Specialist	March 1, 2021
X		Justin C. Dickey Justin C. Dickey, P.E. / Environmental Engineer Manager	March 3, 2021

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	0.0059
Latitude	40º 2' 22"	Longitude	-79º 5' 35"
Quad Name	Somerset	Quad Code	01813
Wastewater Description:	Sewage Effluent		
Receiving Waters	East Branch Coxes Creek	Stream Code	39032
NHD Com ID	69915319	RMI	2.13
Drainage Area	0.97	Yield (cfs/mi^2)	0.0367
Q_{7-10} Flow (cfs)	0.0356	Q_{7-10} Basis	Bulletin 12, Page 395, Coxes Creek Near Rock Wood STA # 03078800
Elevation (ft)	2128	Slope (ft/ft)	0.00266
Watershed No.	19-F	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	SILTATION		
Source(s) of Impairment	HIGHWAY/ROAD/BRIDGE RUNOFF (NON-CONSTRUCTION RELATED), URBAN RUNOFF/STORM SEWERS		
TMDL Status	Final	Name	Coxes Creek Watershed

Background/Ambient Data		Data Source
pH (SU)	7.4	Priority Water Body Survey Cores Crk E. Branch Station 2
Temperature (°C)	25	Default (WWF)
Hardness (mg/L)		
Other: $NH3_{-N}$	0.1	Default

Nearest Downstream Public Water Supply Intake		Ohiopyle Borough Municipal Water Works	
PWS Waters	Youghiogheny River	Flow at Intake (cfs)	
PWS RMI	62.85	Distance from Outfall (mi)	45.75

Changes Since Last Permit Issuance:

Other Comments: Previous Fact Sheets have stated that the discharge is actually to East Branch Coxes Creek, and not an unnamed tributary to East Branch Coxes Creek.

Treatment Facility Summary

Treatment Facility Name: Twin Lakes Center STP

WQM Permit No.	Issuance Date
Unknown	Unknown

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Extended Aeration	Chlorination	0.0059

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.0059	Unknown	Not Overloaded	N/A	Other STP

Changes Since Last Permit Issuance: None

Other Comments: Treatment units include a holding tank, comminutor, bar screen, aeration tank, settling tank, chlorinator, chlorine contact tank, and sludge holding tank.

Compliance History	
Summary of DMRs:	eDMRs have been submitted on time since they started using the eDMR system for reporting in August 2017. See section below for additional information.
Summary of Inspections:	The last site inspection was conducted on 11/04/2019 at the facility. Four effluent violations were noted during this inspection from January 2018 to October 2019. A NOV was sent to the permittee as a result of these violations. No other issues were noted in this report.

Other Comments:

Compliance History

DMR Data for Outfall 001 (from January 1, 2020 to December 31, 2020)

Parameter	DEC-20	NOV-20	OCT-20	SEP-20	AUG-20	JUL-20	JUN-20	MAY-20	APR-20	MAR-20	FEB-20	JAN-20
Flow (MGD) Average Monthly	0.0019	0.0017	0.0020	0.0021	0.0022	0.0018	0.0021	0.0020	0.0020	0.0030	0.0024	0.0024
pH (S.U.) Minimum	7.1	7.2	7.1	7.2	7.1	7.1	6.9	6.9	6.9	6.9	7.0	7.0
pH (S.U.) Maximum	7.3	7.3	7.3	7.3	7.6	7.2	7.1	7.0	7.0	7.1	7.1	7.1
DO (mg/L) Minimum	7.7	7.8	7.6	7.6	7.5	7.4	7.3	7.5	7.6	7.5	7.4	7.3
TRC (mg/L) Average Monthly	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.4
TRC (mg/L) Instantaneous Maximum	0.6	0.7	0.6	0.6	0.6	0.6	0.7	0.6	0.7	0.6	0.6	0.6
CBOD5 (mg/L) Average Monthly	2	< 2	< 2	< 3	< 2	< 3	< 2	4	< 2	< 2	< 2	< 2
CBOD5 (mg/L) Instantaneous Maximum	2	< 2	< 2	3	2	< 3	< 2	6	< 2	< 2	2	< 2
TSS (mg/L) Average Monthly	8	10	6	6	6	8	6	19	8	6	5	4
TSS (mg/L) Instantaneous Maximum	8	12	6	6	6	8	6	20	9	6	6	4
Fecal Coliform (CFU/100 ml) Geometric Mean	3.49	< 1.0	< 1.0	< 2.3	< 1.0	1.0	< 1.0	1.8	< 1.0	< 1.0	< 1.0	1.0
Fecal Coliform (CFU/100 ml) Instantaneous Maximum	12.2	< 1.0	< 1.0	5.2	< 1.0	< 1.0	< 1.0	3.1	1.0	< 1.0	< 1.0	1.0
Ammonia (mg/L) Average Monthly	0.12	1.4	0.22	1.0	1.0	3	6	1.0	1.1	1.3	4.5	3
Ammonia (mg/L) Instantaneous Maximum	0.13	2.47	0.52	1.1	1.6	3	10	1.7	1.32	1.3	5.5	3

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0.0059
Latitude 40º 2' 22.00" **Longitude** -79º 5' 35.00"
Wastewater Description: Treated 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

The following limitations were determined through water quality modeling (output files attached):

Parameter	Limit (mg/l)	SBC	Model
Ammonia Nitrogen May 1 - Oct 31	6.0	Average Monthly	WQAM 6.3 (previous modeling)

Comments: A seasonal multiplier of 3 is applied for ammonia nitrogen in accordance with the Department's SOP entitled "Establishing Effluent Limitations for Individual Sewage Permits."

Best Professional Judgment (BPJ) Limitations

Comments: Comments: A dissolved oxygen limit of a minimum of 4.0 mg/l and a total residual chlorine IMAX limit of 1.6 mg/l was placed in the permit in accordance with the Department's SOP entitled "Establishing Effluent Limitations for Individual Sewage Permits."

Additional Considerations

Monitoring for total nitrogen and total phosphorus was placed in the permit in accordance with the Department's SOP entitled "Establishing Effluent Limitations for Individual Sewage Permits."

There are no requirements applicable to this sewage discharge in the finalized Coxes Creek Watershed TMDL. The TMDL is focused on reduction of siltation from stormwater runoff. No additional requirements will be added to the permit for this discharge in conjunction with the TMDL.

Anti-Backsliding

None. Modeling done for the renewal using WQM 7.0 Version 1.0b showed results relatively close to previous modeling.

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	Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	1/week	Measured
pH (S.U.)	XXX	XXX	6.0 Daily Min	XXX	9.0 Daily Max	XXX	1/day	Grab
DO	XXX	XXX	4.0 Daily Min	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.5	XXX	1.6	1/day	Grab
CBOD5	XXX	XXX	XXX	25.0	XXX	50	2/month	Grab
TSS	XXX	XXX	XXX	30.0	XXX	60	2/month	Grab
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/month	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	100	2/month	Grab
Ammonia Nov 1 - Apr 30	XXX	XXX	XXX	18.0	XXX	36	2/month	Grab
Ammonia May 1 - Oct 31	XXX	XXX	XXX	6.0	XXX	12	2/month	Grab
Total Nitrogen	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	Grab
Total Phosphorus	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	Grab

Compliance Sampling Location: Outfall 001 (after disinfection)

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
19F	39032	Trib 39032 to East Branch Coxes Cr	**2.130**	2128.00	0.97	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	0.037	0.00	0.00	0.000	0.000	0.0	0.00	0.00	25.00	7.40	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
Twin Lakes Ctr	PA0094676	0.0059	0.0000	0.0000	0.000	20.00	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	4.00	7.54	0.00	0.00
NH3-N	25.00	0.10	0.00	0.70

Permit No. PA0094676

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
19F	39032	Trib 39032 to East Branch Coxes Cr	**1.560**	2120.00	1.75	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	0.037	0.00	0.00	0.000	0.000	0.0	0.00	0.00	25.00	7.40	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
Somerset Est	PA0094846	0.0650	0.0000	0.0000	0.000	20.00	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	4.00	7.54	0.00	0.00
NH3-N	25.00	0.10	0.00	0.70

Permit No. PA0094676

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
19F	39032	Trib 39032 to East Branch Coxes Cr	**1.190**	2117.00	1.80	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	0.037	0.00	0.00	0.000	0.000	0.0	0.00	0.00	25.00	7.40	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

Permit No. PA0094676

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
19F	39032	Trib 39032 to East Branch Coxes Cr

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												
2.130	0.04	0.00	0.04	.0091	0.00266	.316	4.02	12.73	0.04	0.989	23.98	7.28
1.560	0.06	0.00	0.06	.1097	0.00154	.399	6.9	17.3	0.06	0.358	21.85	7.11
Q1-10 Flow												
2.130	0.02	0.00	0.02	.0091	0.00266	NA	NA	NA	0.03	1.195	23.57	7.24
1.560	0.04	0.00	0.04	.1097	0.00154	NA	NA	NA	0.06	0.387	21.36	7.08
Q30-10 Flow												
2.130	0.05	0.00	0.05	.0091	0.00266	NA	NA	NA	0.04	0.859	24.21	7.31
1.560	0.09	0.00	0.09	.1097	0.00154	NA	NA	NA	0.07	0.333	22.22	7.13

Permit No. PA0094676

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		

Permit No. PA0094676

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
19F	39032	Trib 39032 to East Branch Coxes Cr

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
2.130	Twin Lakes Ctr	6.11	21.12	6.11	21.12	0	0
1.560	Somerset Est	8.2	11.5	8.28	11.5	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
2.130	Twin Lakes Ctr	1.19	6.95	1.19	6.71	2	3
1.560	Somerset Est	1.49	2.7	1.51	2.61	2	3

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)		
2.13	Twin Lakes Ctr	25	25	6.71	6.71	4	4	0	0
1.56	Somerset Est	25	25	2.61	2.61	4	4	0	0

Permit No. PA0094676

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
19F	39032	Trib 39032 to East Branch Coxes Cr

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
2.130	0.006	23.980	7.283
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
4.020	0.316	12.725	0.035
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
6.69	0.846	1.45	0.951
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
6.818	21.367	Owens	5
Reach Travel Time (days)			
0.989			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.099	6.05	1.32	7.54
0.198	5.48	1.20	7.54
0.297	4.95	1.09	7.54
0.396	4.48	0.99	7.54
0.494	4.05	0.91	7.54
0.593	3.66	0.82	7.54
0.692	3.31	0.75	7.54
0.791	3.00	0.68	7.54
0.890	2.71	0.62	7.54
0.989	2.45	0.57	7.54

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
1.560	0.071	21.847	7.109
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
6.897	0.399	17.296	0.063
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
15.41	1.404	1.67	0.807
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
5.493	19.536	Owens	5
Reach Travel Time (days)			
0.358			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.036	14.60	1.62	6.14
0.072	13.82	1.57	6.52
0.107	13.08	1.53	6.75
0.143	12.39	1.49	6.92
0.179	11.73	1.44	7.04
0.215	11.11	1.40	7.15
0.250	10.51	1.36	7.24
0.286	9.96	1.32	7.32
0.322	9.43	1.29	7.40
0.358	8.92	1.25	7.47

Permit No. PA0094676

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
19F	39032	Trib 39032 to East Branch Coxes Cr

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)
2.130	Twin Lakes Ctr	PA0094676	0.006	CBOD5	25		
				NH3-N	6.71	13.42	
				Dissolved Oxygen			4

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)
1.560	Somerset Est	PA0094846	0.065	CBOD5	25		
				NH3-N	2.61	5.22	
				Dissolved Oxygen			4

Permit No. PA0094676

	B	C	D	E	F	G
2	**TRC EVALUATION**			Twin Lakes Center - PA0094676		
3	Input appropriate values in B4:B8 and E4:E7					
4	0.0356	= Q stream (cfs)		0.5	= CV Daily	
5	0.0059	= 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)		0	=Decay Coefficient (K)	
10	Source	Reference	AFC Calculations		Reference	CFC Calculations
11	TRC	1.3.2.iii	WLA afc = 1.263		1.3.2.iii	WLA cfc = 1.224
12	PENTOXSD TRG	5.1a	LTAMULT afc = 0.373		5.1c	LTAMULT cfc = 0.581
13	PENTOXSD TRG	5.1b	LTA_afc= 0.471		5.1d	LTA_cfc = 0.712
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) = 0.500		BAT/BPJ	
18			INST MAX LIMIT (mg/l) = 1.635			

WLA afc	**(.019/e(-k*AFC_tc)) + [(AFC_Yc*Qs*.019/Qd*e(-k*AFC_tc))...**
	...+ Xd + (AFC_Yc*Qs*Xs/Qd)]*(1-FOS/100)
LTAMULT afc	EXP((0.5*LN(cvh^2+1))-2.326*LN(cvh^2+1)^0.5)
LTA_afc	wla_afc*LTAMULT_afc
WLA_cfc	**(.011/e(-k*CFC_tc) + [(CFC_Yc*Qs*.011/Qd*e(-k*CFC_tc))...**
	...+ Xd + (CFC_Yc*Qs*Xs/Qd)]*(1-FOS/100)
LTAMULT_cfc	EXP((0.5*LN(cvd^2/no_samples+1))-2.326*LN(cvd^2/no_samples+1)^0.5)
LTA_cfc	wla_cfc*LTAMULT_cfc
AML MULT	EXP(2.326*LN((cvd^2/no_samples+1)^0.5)-0.5*LN(cvd^2/no_samples+1))
AVG MON LIMIT	MIN(BAT_BPJ,MIN(LTA_afc,LTA_cfc)*AML_MULT)
INST MAX LIMIT	**1.5*((av_mon_limit/AML_MULT)/LTAMULT_afc)**