pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southwest Regional Office
CLEAN WATER PROGRAM

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Application Type	**Renewal**	Application No.	**PA0043435**
Facility Type	**Non-Municipal**	APS ID	**776863**
Major / Minor	**Minor**	Authorization ID	**1205073**

Applicant and Facility Information

Applicant Name	**L & S Wastewater, Inc.**	Facility Name	**L & S Wastewater Inc. STP**
Applicant Address	PO Box 254	Facility Address	Parkwood Circle
	Cecil, PA 15321-1206		Cecil, PA 15321-1206
Applicant Contact	Mr. Jack H. Lang	Facility Contact	Same as Applicant
Applicant Phone	(412) 257-4163	Facility Phone	Same as Applicant
Client ID	251525	Site ID	249121
Ch 94 Load Status	Not Overloaded	Municipality	Cecil Township
Connection Status		County	Washington
Date Application Received	September 25, 2017	EPA Waived?	Yes
Date Application Accepted	November 1, 2017	If No, Reason	

Purpose of Application: Application for a renewal of an existing NPDES permit for discharge of treated Sewage.

Summary of Review

The applicant has applied for a renewal of NPDES Permit No. PA0043435, which was previously issued by the Department on May 28, 2013. That permit expired on May 31, 2018.

WQM Permit No. 6374418, issued October 14, 1975, authorized the construction of a STP with a hydraulic design capacity of 0.03 MGD.

The existing treatment process consists of screening, comminutor, equalization tank, aeration tank, final settling tank, chlorination and sludge holding tank.

The receiving stream, Drainage Swale to an UNT of Coal Run, is classified as a WWF and is located in State Watershed No. 20-F.

The applicant has complied with Act 14 Notifications and no comments were received

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		/s/ William C. Mitchell, E.I.T. / Environmental Engineering Specialist	August 22, 2019
X		/s/ Christopher Kriley, P.E. / Environmental Program Manager	August 22, 2019

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	0.03
Latitude	40º 19' 23"	Longitude	-80º 10' 23"
Quad Name	Canonsburg	Quad Code	1604
Wastewater Description:	Sewage Effluent		
Receiving Waters	Drainage Swale to an UNT of Coal Run (WWF)	Stream Code	Swale to 36858
NHD Com ID	99690894	RMI	4.42 on 36858
Drainage Area	0.07	Yield (cfs/mi^2)	0
Q_{7-10} Flow (cfs)	0.00001	Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	0.0933
Watershed No.	20-F	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use	NONE	Exceptions to Criteria	NONE
Assessment Status	Impaired		
Cause(s) of Impairment	NUTRIENTS, SILTATION		
Source(s) of Impairment	AGRICULTURE, AGRICULTURE		
TMDL Status	Final, Final	Name	Chartiers Creek,Chartiers Creek Watershed

Background/Ambient Data		Data Source
pH (SU)		
Temperature (°F)		
Hardness (mg/L)		
Other:		

Nearest Downstream Public Water Supply Intake		West View Municipal Authority	
PWS Waters	Ohio River	Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	

Changes Since Last Permit Issuance: NONE

Other Comments:

The discharge flows into Chartiers Creek that has a Final TMDL and is impaired by PCB and Chlordane. No WLAs have been developed for this sewage discharge and they are not expected to contribute to the stream impairment for these pollutants.

The discharge flows into the Chartiers Creek Watershed that has a Final TMDL and is impaired by metals and pH. This sewage discharge is not expected to contribute to the stream impairment for which abandoned mine drainage is source of such impairment. No WLAs have been developed for this sewage discharge and they are not expected to contribute to the stream impairment for these pollutants.

Treatment Facility Summary				
Treatment Facility Name: L & S WW Inc. STP				
WQM Permit No.	**Issuance Date**			
6374418	10/14/1975			
Waste Type	**Degree of Treatment**	**Process Type**	**Disinfection**	**Avg Annual Flow (MGD)**
Sewage	Tertiary	Aeration	Chlorination	
Hydraulic Capacity (MGD)	**Organic Capacity (lbs/day)**	**Load Status**	**Biosolids Treatment**	**Biosolids Use/Disposal**
0.03		Not Overloaded		Regional Municipal WWTP

Changes Since Last Permit Issuance: NONE

Compliance History

Operations Compliance Check Summary Report

Facility: L&S Wastewater, Inc. STP

NPDES Permit No.: PA0043435

Compliance Review Period: 08/12/2014 – 08/12/2019

Open Violations by Client Summary

None.

Inspection Summary

INSP ID	INSPECTED DATE	INSP TYPE	AGENCY	INSPECTION RESULT DESC	# OF VIOLATIONS
2611400	04/11/2017	Administrative/File Review	PA Dept of Environmental Protection	Violation(s) Noted	1
2389829	07/16/2015	Administrative/File Review	PA Dept of Environmental Protection	Violation(s) Noted	1
2320326	11/12/2014	Compliance Evaluation	PA Dept of Environmental Protection	No Violations Noted	0

Violation Summary

VIOL ID	VIOLATION DATE	VIOLATION TYPE DESC	RESOLVED DATE
790368	04/11/2017	NPDES - Failure to use a format or process required by DEP for self-monitoring results	05/01/2017
729635	07/16/2015	NPDES - Violation of effluent limits in Part A of permit	07/16/2015

Enforcement Summary

ENF ID	ENF TYPE DESC	EXECUTED DATE	ENF FINALSTATUS	ENF CLOSED DATE
355520	Notice of Violation	04/11/2017	Comply/Closed	05/01/2017
327371	Notice of Violation	07/16/2015	Comply/Closed	07/16/2015

DMR Violation Summary

Current eDMR user.

Effluent limit violation summary 8/12/2017 – 8/12/2019:

MONITORING END DATE	OUTFALL	PARAMETER	SAMPLE VALUE	PERMIT VALUE	UNIT OF MEASURE	STATISTICAL BASE CODE
07/31/2019	001	Flow	13.990	0.03	MGD	Average Monthly
06/30/2019	001	Flow	13.929	0.03	MGD	Average Monthly
05/31/2019	001	Flow	13.390	0.03	MGD	Average Monthly
04/30/2019	001	Flow	14.667	0.03	MGD	Average Monthly
03/31/2019	001	Flow	14.142	0.03	MGD	Average Monthly
02/28/2019	001	Flow	15489	0.03	MGD	Average Monthly
01/31/2019	001	Flow	16539	0.03	MGD	Average Monthly
01/31/2019	001	Carbonaceous Biochemical Oxygen Demand (CBOD5)	21.4	20	mg/L	Instantaneous Maximum
01/31/2019	001	Carbonaceous Biochemical Oxygen Demand (CBOD5)	12.4	10	mg/L	Average Monthly
12/31/2018	001	Flow	18539.00	0.03	MGD	Average Monthly
11/30/2018	001	Flow	17590.00	0.03	MGD	Average Monthly

Compliance Status:

Facility had numerous effluent violations in 2019 due to possible misreporting of flow data, and a single month of CBOD5 violations. NOV's have been issued and no effluent water quality violations have been reported since January 2019.

Completed by: David Roote

Completed date: 8/12/19

Other Comments: **The applicant was contacted on August 21, 2019. The applicant was misreporting flow as GPD on eDMR. The applicant is going to submit amended eDMRs to correct the misreport flow values in MGD.**

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0.03
Latitude 40º 19' 23.00" **Longitude** -80º 10' 23.00"
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)
	30	Average Monthly	133.102(b)(1)	92a.47(a)(1)
Total Suspended Solids	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)

Comments: Limits for TSS were imposed in accordance with the Department's State Wide Policy in effect at time of original permit issuance. There has been no change to the discharge or receiving stream and we will again reimpose a TSS limit of 25 mg/l from the previously approved Fact Sheet. Please see page 8 of this Fact Sheet for a list of the effluent limits.

Water Quality-Based Limitations

The discharge was previously modeled using WQAM63 to evaluate $CBOD_5$, Ammonia Nitrogen and Dissolved Oxygen parameters and there have been no changes to the discharge or the receiving stream. Therefore, it is not necessary to remodel those three parameters using the current WQM 7.0 model because the same effluent results are computed for a single discharge scenario.

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

Parameter	Limit (mg/l)	SBC	Model
Ammonia Nitrogen (5/1 – 10/31)	3.0	Average Monthly	WQAM63
Ammonia Nitrogen (11/1 – 4/30)	9.0	Average Monthly	WQAM63
$CBOD_5$	10.0	Average Monthly	WQAM63
Dissolved Oxygen	4.0	Daily Minimum	WQAM63
Total Residual Chlorine	0.01	Average Monthly	TRC_CALC Spreadsheet

Best Professional Judgment (BPJ) Limitations

Comments: N/A

Anti-Backsliding

N/A

Additional Considerations:

The Average Monthly and Instantaneous Maximum Total Residual Chlorine (TRC) effluent limitations imposed in the previous NPDES permit were 1.4 mg/l and 3.3 mg/l, respectively. At that time, those values were considered BAT limitations per the SWRO's TRC Implementation for Sewage Facilities Planning Section Interim Guidance, dated June 20, 1995, for an existing minor facility having a design flow <= 0.1 mgd, permitted before July 1995. In-stream and discharge chlorine demands of 0.3 mg/l and 0 mg/l, respectively are to be used as default values in the TRC spreadsheet model to calculate water quality-based TRC limits unless site-specific data supporting different values have been collected in accordance with the Implementation Guidance Total Residual Chlorine Regulation. The revised modeling results developed effluent limits of 0.01 mg/l and 0.02 mg/l. The applicant will be given 12 months to comply with the new TRC limits.

For pH, Dissolved Oxygen (DO) and Total Residual Chlorine (TRC), a monitoring frequency 1/day has been imposed. In general, less frequent monitoring may be established only when the permittee demonstrates that there will be no discharge on days where monitoring is not required.

Nutrient monitoring is required to establish the nutrient load from the waste water treatment facility and the impacts that load may have on the quality of the receiving stream(s). A 1/year monitor and report requirement for Total N & Total P has been added to the permit as per Chapter 92.a.61.

Monitoring frequency for the proposed effluent limits are based upon Table 6-3, Self-Monitoring Requirements for Sewage Dischargers, from the Departments Technical Guidance for the Development and Specification of Effluent Limitations.

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 12th Month.

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		
TRC	XXX	XXX	XXX	1.4	XXX	3.3	1/day	Grab

Compliance Sampling Location: 001

roposed 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: 13th Month 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		
TRC	XXX	XXX	XXX	0.01	XXX	0.02	1/day	Grab

Compliance Sampling Location: 001

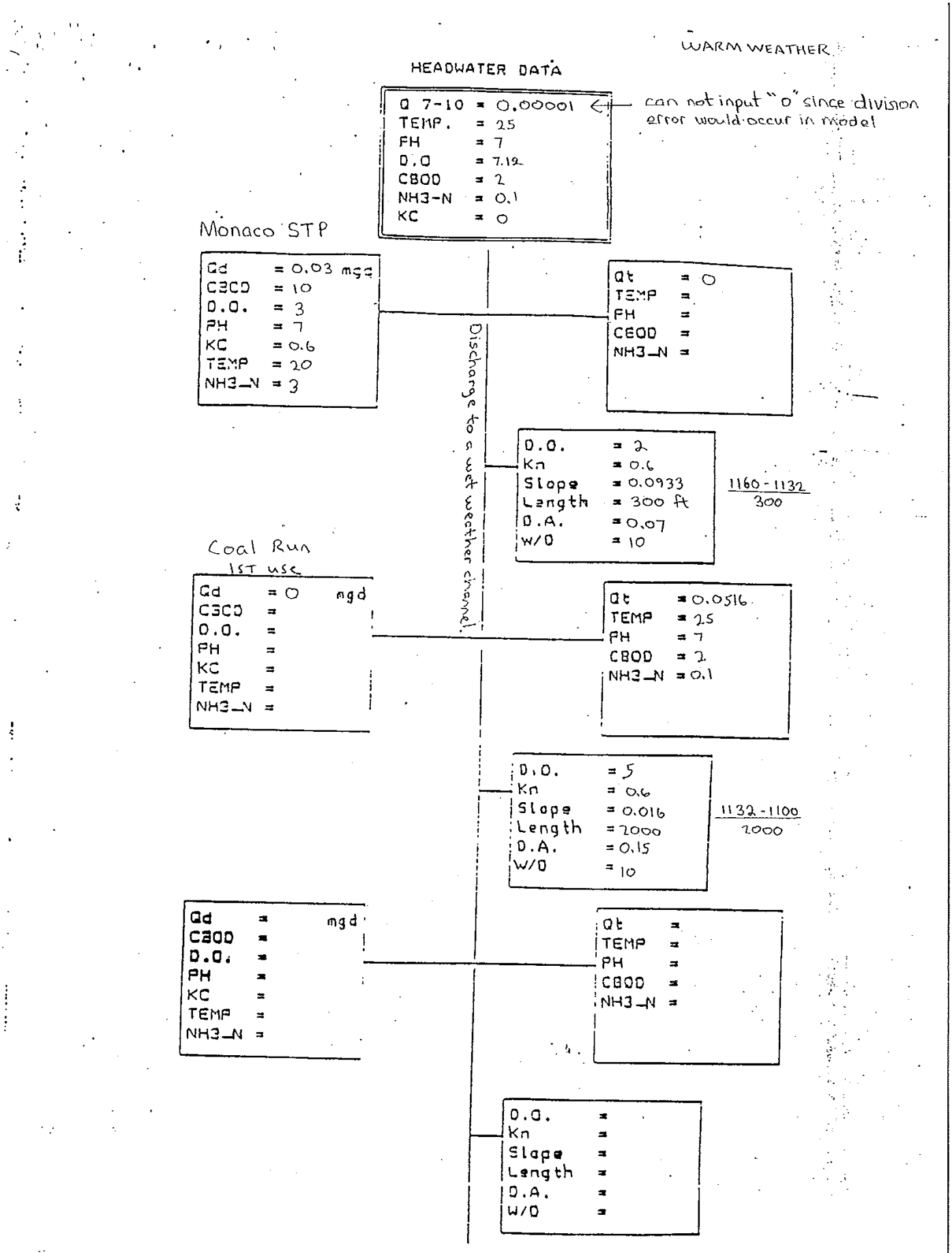
Proposed Effluent Limitations and Monitoring Requirements

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)	0.03	XXX	XXX	XXX	XXX	XXX	2/month	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
CBOD5	XXX	XXX	XXX	10	XXX	20	2/month	Grab
TSS	XXX	XXX	XXX	25	XXX	50	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	1000	2/month	Grab
Total Nitrogen	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	Grab
Ammonia Nov 1 - Apr 30	XXX	XXX	XXX	9.0	XXX	18.0	2/month	Grab
Ammonia May 1 - Oct 31	XXX	XXX	XXX	3.0	XXX	6.0	2/month	Grab
Total Phosphorus	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	Grab

Compliance Sampling Location: 001


WARM WEATHER
HEADWATER DATA
Q 7-10 = 0.00001
TEMP. = 25
PH = 7
D.O = 7.19
CBOD = 2
NH3-N = 0.1
KC = 0
can not input "0" since division error would occur in model
Monaco STP
Qd = 0.03 mgd
CBOD = 10
D.O. = 3
PH = 7
KC = 0.6
TEMP = 20
NH3_N = 3
Qt = 0
TEMP =
PH =
CBOD =
NH3_N =
Discharge to a wet weather channel
D.O. = 2
Kn = 0.6
Slope = 0.0933
Length = 300 ft
D.A. = 0.07
W/D = 10
1160 - 1132 / 300
Coal Run
1ST use
Qd = 0 mgd
CBOD =
D.O. =
PH =
KC =
TEMP =
NH3_N =
Qt = 0.0516
TEMP = 25
PH = 7
CBOD = 2
NH3_N = 0.1
D.O. = 5
Kn = 0.6
Slope = 0.016
Length = 2000
D.A. = 0.15
W/D = 10
1132 - 1100 / 2000
Qd = mgd
CBOD =
D.O. =
PH =
KC =
TEMP =
NH3_N =
Qt =
TEMP =
PH =
CBOD =
NH3_N =
D.O. =
Kn =
Slope =
Length =
D.A. =
W/D =

Nomograph Velocities

DISCHARGE LOCATION :

TF = WF + SF = 0.03 MGD + 0 = 0.03 MGD = 0.0465 CFS

SLOPE : 0.0933 ft / ft

NOMOGRAPH VELOCITY = 1.48 × 0.3 = 0.444 fps

TIME = $\frac{\text{DIST}}{\text{VEL}} = \frac{300\text{ ft}}{0.444\text{ fps}} = 676\text{ sec} \times \frac{1\text{ MIN}}{60\text{ sec}} \times \frac{1\text{ hr}}{60\text{ MIN}} \times \frac{1\text{ day}}{24\text{ hr}} = 0.0078\text{ day}$ (.19 hr)

2nd reach :

TF = WF + SF = 0.0465 CFS + 0.0051 CFS = 0.0516 CFS

SLOPE : 0.016 ft/ ft

NOMOGRAPH VELOCITY : 0.775 × 0.3 = 0.233 fps

TIME = $\frac{\text{DIST}}{\text{VEL}} = \frac{2000\text{ ft}}{0.233\text{ fps}} = 8602\text{ sec} = 0.10\text{ day}$ (2.4 hr)

COLDER PERIOD :

VELOCITY FOR 1ST REACH SAME AS ABOVE SINCE NO DILUTION AVAILABLE AT $Q_{7\text{-}10}$ CONDITION.

2nd reach :

TF = 0.0465 CFS + 0.0102 CFS = 0.0567 CFS

NOMOGRAPH VELOCITY = 0.8 × 0.3 = 0.24 fps

TIME = $\frac{2000\text{ ft}}{0.24\text{ fps}} = 8333\text{ sec} = 0.097\text{ day}$

WARMER WEATHER

MONACO STP DISCHARGE TO WET WEATHER SWALE
FILE:

DEFAULT DATA

A. STREAM VALUES

1	Q1-10/Q7-10 RATIO.....	.64
2	Q30-10/Q7-10 RATIO.....	1.36
3	TEMPERATURE.....	25
4	PH.....	7
5	C-BOD5.....	2
6	NH3-N.....	.1
7	D.O. SATURATION (%).....	.85
8	D.O. GOAL.....	2
9	WIDTH/DEPTH RATIO.....	10
10	KC....(HEADWATERS ONLY!)....	0
11	KN.....	.6

B. DISCHARGE VALUES (30 DAY AVG)

12	C-BOD5.....	10
13	NH3-N.....	3
14	EFFLUENT D.O.....	3
15	EFFLUENT TEMP.....	20
16	KC.....	.6
17	BAL.TECHNOLOGY(1=Y 0=N).....	0

HEADWATERS AND TRIBUTARY DATA

NO. OF REACHES : 1

RH	Q7-10 (CFS)	T (C)	PH	DO (MG/L)	CBOD5 (MG/L)	NH3-N (MG/L)
HW	1E-05	25	7	7.12	2	.1

1 0

MONACO STP DISCHARGE TO WET WEATHER SWALE
FILE:

DISCHARGER DATA
Q7-10 DESIGN CONDITIONS

RH	Q MGD	T (C)	PH	DO MG/L	CBOD5 MG/L	NH3-N MG/L	KC
1	.03	20	7	3	10	3	.6

REACH CHARACTERISTICS

RH	D.O. GOAL	KN (/D)	RCH. SL. (FT/FT)	RCH. LEN. (FT.)	DRAIN AREA (MI^2)	W/D
1	2	.6	9.3E-03	300	.07	10

MONACO STP DISCHARGE TO WET WEATHER SWALE
FILE:

REACH CHARACTERISTICS

RH	KR (/D)	TT (DAYS)
1	0	0

MULTIPLE D.O. PROFILE
(TOTAL) DISCHARGE = .03 MGD
TEMP = 20 PH = 7
CBOD-5= 10 NH3-N= 3 D.O. = 3
KC'= .6 KN= .6 D.O.GOAL = 2
KR= 46.136 (OWENS)
DIS. 1 RCH. 1 TRVL TIME:.049

TR.TM. (DAYS)	CBOD-5 (MG/L)	NH3-N (MG/L)	D.O. (MG/L)
5E-03	9.97	2.99	4.17
.01	9.94	2.98	5.1
.015	9.91	2.97	5.84
.02	9.88	2.96	6.44
.024	9.85	2.96	6.91
.029	9.82	2.95	7.12
.034	9.8	2.94	7.12
.039	9.77	2.93	7.12
.044	9.74	2.92	7.12
.049	9.71	2.91	7.12

MONACO STP DISCHARGE TO WET WEATHER SWALE
FILE:

REACH CHARACTERISTICS

RH	KR (/D)	TT (DAYS)	
1	20	8E-03	NOMOGRAPH TRAVEL TIME

MULTIPLE D.O. PROFILE
(TOTAL) DISCHARGE = .03 MGD
TEMP = 20 PH = 7
CBOD-5= 10 NH3-N= 3 D.O. = 3
KC'= .6 KN= .6 D.O.GOAL = 2
KR= 20 (USR DEF.)
DIS. 1 RCH. 1 TRVL TIME:8E-03

TR.TM. (DAYS)	CBOD-5 (MG/L)	NH3-N (MG/L)	D.O. (MG/L)
1E-03	9.99	3	3.08
2E-03	9.99	3	3.17
2E-03	9.98	3	3.25
3E-03	9.98	2.99	3.33
4E-03	9.97	2.99	3.41
5E-03	9.97	2.99	3.49
6E-03	9.96	2.99	3.56
6E-03	9.96	2.99	3.64
7E-03	9.96	2.99	3.71
8E-03	9.95	2.99	3.78

MONACO STP DISCHARGE TO WET WEATHER SWALE
FILE:

DISCHARGE CHARACTERISTICS

END OF REACH 1

(TOTAL) FLOW-MGD	.03	
TEMPERATURE	20	
PH	7	
DISSOLVED OXYGEN (MG/L)	3.8	use 3.78
C-BOD5 (MG/L)	10	use 9.95
NH3-N (MG/L)	3	use 2.99
KC (1/DAY)	.59	

use the above end of reach values for initial discharge values at point of first use.

WARMER WEATHER

MONACO STP AT PT OF 1ST USE
FILE:

DEFAULT DATA

A. STREAM VALUES

1	Q1-10/Q7-10 RATIO	.64
2	Q30-10/Q7-10 RATIO	1.36
3	TEMPERATURE	25
4	PH	7
5	C-BOD5	2
6	NH3-N	.1
7	D.O. SATURATION (%)	.85
8	D.O. GOAL	5
9	WIDTH/DEPTH RATIO	10
10	KC....(HEADWATERS ONLY!)	0
11	KN	.6

B. DISCHARGE VALUES (30 DAY AVG)

12	C-BOD5	9.95
13	NH3-N	2.99
14	EFFLUENT D.O.	3.8
15	EFFLUENT TEMP	20
16	KC	.59
17	BAL.TECHNOLOGY(1=Y 0=N)	0

HEADWATERS AND TRIBUTARY DATA

NO. OF REACHES : 1

RH	Q7-10 (CFS)	T (C)	PH	DO (MG/L)	CBOD5 (MG/L)	NH3-N (MG/L)
HW	.0516	25	7	7.12	2	.1

1 0

MONACO STP AT PT OF 1ST USE
FILE:

DISCHARGER DATA
Q7-10 DESIGN CONDITIONS

RH	Q MGD	T (C)	PH	DO MG/L	CBOD5 MG/L	NH3-N MG/L	KC
1	.03	20	7	3.8	9.95	2.99	.59

REACH CHARACTERISTICS

RH	D.O. GOAL	KN (/D)	RCH. SL. (FT/FT)	RCH. LEN. (FT.)	DRAIN AREA (MI^2)	W/D
1	5	.6	.016	2000	.15	10

MONACO STP AT PT OF 1ST USE
FILE:

REACH CHARACTERISTICS

RH	KR (/D)	TT (DAYS)
1	0	0

NH3-N DISCHARGE ALLOCATIONS AT Q30-10

DIS	Q (MGD)	IND. CONC. (MG/L)	ALL. CONC. (MG/L)	CRIT. RCH.	PCT. RED. (%)
1	.03	2.99	2.99	0	0

MONACO STP AT PT OF 1ST USE
FILE:

NH3-N DISCHARGE ALLOCATIONS AT Q1-10

DIS	Q (MGD)	IND. CONC. (MG/L)	ALL. CONC. (MG/L)	CRIT. RCH.	PCT. RED. (%)
1	.03	5.98	5.98	0	0

MULTIPLE DISCHARGE LIMITATIONS
(TOTAL) DISCHARGE = .03 MGD
TEMP = 22.6 PH = 7
CBOD-5= 5.76 NH3-N= 1.47 D.O. = 5.55
KC'= .475 KN= .6 D.O.GOAL = 5
KR= 37.049 (OWENS)
DIS. 1 RCH. 1 TRVL TIME:.242

TR.TM. (DAYS)	CBOD-5 (MG/L)	NH3-N (MG/L)	D.O. (MG/L)
.024	5.69	1.44	7.12
.048	5.62	1.42	7.12
.073	5.54	1.39	7.12
.097	5.47	1.37	7.12
.121	5.4	1.34	7.12
.145	5.33	1.32	7.12
.169	5.26	1.3	7.12
.194	5.2	1.27	7.12
.218	5.13	1.25	7.12
.242	5.06	1.23	7.12

MONACO STP AT PT OF 1ST USE
FILE:

REACH CHARACTERISTICS

RH	KR (/D)	TT (DAYS)
1	20	0

MULTIPLE DISCHARGE LIMITATIONS

(TOTAL) DISCHARGE = .03 MGD
TEMP = 22.6 PH = 7
CBOD-5= 5.79 NH3-N= 1.47 D.O. = 5.55
KC'= .475 KN= .6 D.O.GOAL = 5
KR= 20 (USR DEF.)
DIS. 1 RCH. 1 TRVL TIME:.242

TR.TM. (DAYS)	CBOD-5 (MG/L)	NH3-N (MG/L)	D.O. (MG/L)
.024	5.71	1.45	6.59
.048	5.64	1.42	7.12
.073	5.57	1.4	7.12
.097	5.5	1.37	7.12
.121	5.42	1.35	7.12
.145	5.35	1.32	7.12
.169	5.29	1.3	7.12
.194	5.22	1.28	7.12
.218	5.15	1.26	7.12
.242	5.08	1.23	7.12

MONACO STP DISCHARGE TO WET WEATHER SWALE COLDER PERIOD
FILE:

DISCHARGER DATA
Q7-10 DESIGN CONDITIONS

RH	Q MGD	T (C)	PH	DO MG/L	CBOD5 MG/L	NH3-N MG/L	KC
1	.03	15	7	3	10	9	.6

REACH CHARACTERISTICS

RH	D.O. GOAL	KN (/D)	RCH. SL. (FT/FT)	RCH. LEN. (FT.)	DRAIN AREA (MI^2)	W/D
1	2	.6	.0933	300	.07	10

MONACO STP DISCHARGE TO WET WEATHER SWALE COLDER PERIOD
FILE:

REACH CHARACTERISTICS

RH	KR (/D)	TT (DAYS)
1	20	8E-03

MULTIPLE D.O. PROFILE
(TOTAL) DISCHARGE = .03 MGD
TEMP = 15 PH = 7
CBOD-5= 10 NH3-N= 9 D.O. = 3
KC'= .6 KN= .6 D.O.GOAL = 2
KR= 20 (USR DEF.)
DIS. 1 RCH. 1 TRVL TIME:8E-03

TR.TM. (DAYS)	CBOD-5 (MG/L)	NH3-N (MG/L)	D.O. (MG/L)
1E-03	9.99	9	3.1
2E-03	9.99	8.99	3.19
2E-03	9.99	8.99	3.28
3E-03	9.98	8.99	3.37
4E-03	9.98	8.98	3.46
5E-03	9.98	8.98	3.54
6E-03	9.97	8.98	3.63
6E-03	9.97	8.97	3.71
7E-03	9.96	8.97	3.79
8E-03	9.96	8.97	3.88

MONACO STP DISCHARGE TO WET WEATHER SWALE COLDER PERIOD
FILE:

DISCHARGE CHARACTERISTICS

END OF REACH 1

(TOTAL) FLOW-MGD.....:.03
TEMPERATURE.....:15
PH.....:7
DISSOLVED OXYGEN (MG/L)....:3.9 use 3.88
C-BOD5 (MG/L).....:10 use 9.96
NH3-N (MG/L).....:9 use 8.97
KC (1/DAY).....:.59

MONACO STP AT POINT OF 1ST USE COLDER PERIOD
FILE:

DEFAULT DATA

A. STREAM VALUES

1	Q1-10/Q7-10 RATIO	.64
2	Q30-10/Q7-10 RATIO	1.36
3	TEMPERATURE	5
4	PH	7
5	C-BOD5	2
6	NH3-N	.1
7	D.O. SATURATION (%)	.85
8	D.O. GOAL	5
9	WIDTH/DEPTH RATIO	10
10	KC....(HEADWATERS ONLY!)	0
11	KN	.6

B. DISCHARGE VALUES (30 DAY AVG)

12	C-BOD5	9.96
13	NH3-N	8.97
14	EFFLUENT D.O.	3.88
15	EFFLUENT TEMP	20
16	KC	.59
17	BAL.TECHNOLOGY(1=Y 0=N)	0

HEADWATERS AND TRIBUTARY DATA

NO. OF REACHES : 1

RH	Q7-10 (CFS)	T (C)	PH	DO (MG/L)	CBOD5 (MG/L)	NH3-N (MG/L)
HW	.1032	5	7	10.82	2	.1

1 0

MONACO STP AT POINT OF 1ST USE COLDER PERIOD
FILE:

DISCHARGER DATA
Q7-10 DESIGN CONDITIONS

RH	Q MGD	T (C)	PH	DO MG/L	CBOD5 MG/L	NH3-N MG/L	KC
1	.03	15	7	3.88	9.96	8.97	.59

REACH CHARACTERISTICS

RH	D.O. GOAL	KN (/D)	RCH. SL. (FT/FT)	RCH. LEN. (FT.)	DRAIN AREA (MI^2)	W/D
1	5	.6	.016	2000	.15	10

MONACO STP AT POINT OF 1ST USE COLDER PERIOD
FILE:

NH3-N DISCHARGE ALLOCATIONS AT Q1-10

DIS	Q (MGD)	IND. CONC. (MG/L)	ALL. CONC. (MG/L)	CRIT. RCH.	PCT. RED. (%)
1	.03	17.94	17.94	0	0

MULTIPLE DISCHARGE LIMITATIONS
(TOTAL) DISCHARGE = .03 MGD
TEMP = 8.1 PH = 7
CBOD-5= 4.48 NH3-N= 2.85 D.O. = 8.67
KC'= .404 KN= .6 D.O.GOAL = 5
KR= 20 (USR DEF.)
DIS. 1 RCH. 1 TRVL TIME:.191

TR.TM. (DAYS)	CBOD-5 (MG/L)	NH3-N (MG/L)	D.O. (MG/L)
.019	4.46	2.84	9.58
.038	4.44	2.83	10.2
.057	4.42	2.81	10.63
.076	4.4	2.8	10.82
.095	4.38	2.79	10.82
.115	4.36	2.77	10.82
.134	4.34	2.76	10.82
.153	4.32	2.75	10.82
.172	4.3	2.74	10.82
.191	4.29	2.72	10.82

TRC_CALC

TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9

0.00001	= Q stream (cfs)	0.5	= CV Daily
0.03	= Q discharge (MGD)	0.5	= CV Hourly
30	= no. samples	1	= AFC_Partial Mix Factor
0.3	= Chlorine Demand of Stream	1	= CFC_Partial Mix Factor
0	= Chlorine Demand of Discharge	15	= AFC_Criteria Compliance Time (min)
0.5	= BAT/BPJ Value	720	= CFC_Criteria Compliance Time (min)
0	= % Factor of Safety (FOS)		=Decay Coefficient (K)

Source	Reference	AFC Calculations	Reference	CFC Calculations
TRC	1.3.2.iii	WLA afc = 0.019	1.3.2.iii	WLA cfc = 0.011
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373	5.1c	LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc= 0.007	5.1d	LTA_cfc = 0.006

Source		Effluent Limit Calculations	
PENTOXSD TRG	5.1f	AML MULT = 1.231	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.008	CFC
		INST MAX LIMIT (mg/l) = 0.026	

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)**