

# Northwest Regional Office CLEAN WATER PROGRAM

Application Type

Facility Type

Major / Minor

Minor

# NPDES PERMIT FACT SHEET INDIVIDUAL SEWAGE

Application No. APS ID

Authorization ID

PA0222160 1048645

1371026

Applicant Name	John Chrzanowski	Facility Name	Hemlock MHP
Applicant Address	PO Box 72158	Facility Address	Hemlock Road
	Thorndale, PA 19372-0158		Grove City, PA 16127
Applicant Contact	John Chrzanowski	Facility Contact	
Applicant Phone	(484) 467-0670	Facility Phone	(484) 467-0670
Applicant E Mail	Hemlock.village@verizon.net	Facility E Mail	
Client ID	289964	Site ID	464861
Municipality	Wolf Creek Township	County	Mercer
Ch 94 Load Status	Not Overloaded	Connection Status	No Limitations
Received	September 29, 2021	EPA Waived?	Yes
Accepted	October 5, 2021	If No, Reason	

#### **Summary of Review**

WMS reports compliance with no current violations. Previously they were cited for effluent violations on November 9 and October 10, 2021. The October 2021 discharge report summary shows significant high values for CBOD5, TSS, and fecal coliform and a one-time low DO value. Current monitoring shows improved operation and possibly more frequent disinfection inspections. Sewage sludge is sent to Hermitage STP for final treatment.

Daily DO, pH and TRC monitoring is proposed. This is up from 4 per week. The daily monitoring frequency was previously proposed but relaxed in the issued permit. Also, annual e. coli monitoring is proposed.

The facility has a phased build out. Phase I operation is for 34 sites, 0.00939-MGD and 15.2-PPD. Ultimate design is for 67 sites, 0.01675-MGD and 34.92-PPD. Formerly a polishing sand filter and solution hypochlorite disinfection was permitted. This authorization has been cancelled as not necessary.

#### **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
V		William H. Mentzer	
		William H. Mentzer, P.E.	
		Environmental Engineering Specialist	July 26, 2021
X		Vacant Environmental Engineer Manager	Okay to Draft JCD 8/8/2022

Discharge, Receivin	g Waters and Water Supply Informati	on	
Outfall No.	001	Design Flow (MGD)	0.01675
Latitude DP	41º 12' 12.00"	Longitude DP	-80° 2' 19.00"
Latitude NHD	_41° 12' 25.49"	Longitude NHD	-80° 2' 23.06"
Quad Name	Grove City	Quad Code	0905
Wastewater:	Treated mobile home park domestic	wastes	
Receiving Waters	Tributary to East Branch Wolf Creek	Stream Code	unknown
NHD Com ID	126219135	RMI	0.27
Drainage Area	0.01	Yield (cfs/mi <sup>2</sup> )	0
Q <sub>7-10</sub> Flow (cfs)	0	Q <sub>7-10</sub> Basis	Dry stream
Elevation (ft)	1300	Slope (ft/ft)	0.02945
Watershed No.	20-C	Chapter 93 Class.	CWF
Existing Use	statewide	Existing Use Qualifier	none
Exceptions to Use	none	Exceptions to Criteria	none
Comments	NHD outfall is at E Branch Wolf Cree	k 34348 Node RMI 1.01 an	d stream RMI 1.36204,
drainage 20.19 sq	mile and elevation 1257.33 feet. Wolf C	reek 34242 confluence is a	t RMI 16.117734,
Drainage 23.1 squa	are miles and elevation 1246.29-feet		
Low Flow Assessment Status	Muddy Creek at Isle, low flow 0.4-cfs  Attaining Use(s)	, drainage 29.4 sq mi, yield	0.013605-cfs/square mile
Cause(s) of Impair			
Source(s) of Impair			
TMDL Status		Name	
Background/Ambie pH (SU)	nt Data	Data Source	
Temperature (°F)	<u> </u>		
Hardness (mg/L)			
Other:			
	m Public Water Supply Intake	Pennsylvania America	
·	Connoquenessing Creek	Flow at Intake (cfs)	NA
PWS RMI	0.01	Distance from Outfall (mi)	41.82

Changes Since Last Permit Issuance: Formerly the first down stream public water supply intake was by the Pennsylvania American Water Ellwood City District. This intake has been discontinued and replaced by the Pennsylvania American Water intake at the mouth of the Connoquenessing Creek

Other Comments: none

	Tr	eatment Facility Summar	у	
Treatment Facility Na	ame: Hemlock MHP			
WQM Permit No.	Issuance Date	Flow	PPD	Homes
4397411 T3	18 October 2011	0.01675	34.92	67
4397411 T3	16 December 2011	0.00939	15.42	34
	Degree of			Avg Annual
Waste Type	Treatment	Process Type	Disinfection	Flow (MGD)
		Rotat Biological		
		Contactors W/Sol		
		Rmov,Rotating Biological		
Sewage	Secondary, Tertiary	Contactors	Hypochlorite	0.00939
<b>Hydraulic Capacity</b>	Organic Capacity			Biosolids
(MGD)	(lbs/day)	Load Status	Biosolids Treatment	Use/Disposal
0.0168	15.2	Not Overloaded	Gravity Thickening	Other WWTP

Changes Since Last Permit Issuance: None

#### Other Comments:

Treatment: equalization, primary clarification, Geo-drum (Geo-Form) reactor, final clarification, sludge handling (holding), and chlorination. Facility was built in 1998. Final (ultimate) design organic load is 34.93-PPD.

A sand filter has been proposed, never built and the facility design cancelled. The facility two phase build-out remains. The tertiary treatment citation above may be related to the cancelled sand filter facilities.

Final design is for 67 homes, 0.01675-MGD and 34.92 -PPD.

# **Compliance History**

# DMR Data for Outfall 001 (from September 1, 2020 to August 31, 2021)

Parameter	AUG-21	JUL-21	JUN-21	MAY-21	APR-21	MAR-21	FEB-21	JAN-21	DEC-20	NOV-20	OCT-20	SEP-20
Flow (MGD)												
Average Monthly	0.005	0.025	0.045	0.050	0.50	0.050	0.005	0.055	0.053	0.045	0.005	0.055
pH (S.U.)												
Minimum	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
pH (S.U.)												
Instant Maximum	7.4	7.4	7.6	7.3	7.4	7.4	7.3	7.3	7.5	7.3	7.4	7.4
DO (mg/L)												
Minimum	4.0	4.0	3.9	4.0	4.1	4.0	4.1	4.3	4.5	4.0	4.0	4.0
TRC (mg/L)												
Average Monthly	0.31	0.3	0.40	0.19	0.31	0.28	0.3	0.32	0.32	0.33	0.26	0.28
TRC (mg/L) Instant												
Maximum	0.51	0.49	0.53	0.41	0.47	0.49	0.49	0.49	0.49	0.49	0.42	0.49
CBOD5 (mg/L)	00.4	00.0	540	40.7	00.4	00.5	40.0	40.0	05.0	45.75	40.0	445
Average Monthly	23.4	20.0	54.9	46.7	33.4	39.5	46.8	19.8	25.9	15.75	10.6	14.5
CBOD5 (mg/L)	20.0	26.2	F7 0	FC 4	44.0	F7.0	70.4	22.2	20.0	46.2	10.4	22.7
Instant Maximum TSS (mg/L)	28.8	26.3	57.3	56.1	44.3	57.3	70.4	22.3	38.9	16.3	13.4	22.7
Average Monthly	40.0	55.0	78.0	43.0	28.0	33.0	32.0	15.0	16.5	12.0	16.0	18.0
TSS (mg/L)	40.0	33.0	76.0	43.0	20.0	33.0	32.0	13.0	10.5	12.0	10.0	10.0
Instant Maximum	56.0	67.0	116.0	60.0	38.0	48.0	54.0	19.0	28.0	19.0	16.0	33.0
Fecal Coliform (#/100	00.0	07.0	110.0	00.0	00.0	40.0	04.0	10.0	20.0	10.0	10.0	00.0
ml) Geometric Mean	49.0	49	1	1087.8	110	49.2	49.2	1	2	49.2	163.2	49
Fecal Coliform (#/100	1010		-	100110								
ml) Instant Maximum	2420	2420	1	2420	2420	2420	2420	1	2	2420	2420.0	2420
Total Nitrogen (mg/L)												
Average Monthly	28.4	36.3	51.3	54.0	31.0	33.9	30.4	32.7	32.3	34.8	33.25	34.6
Ammonia (mg/L)												
Average Monthly	20.7	21.4	36.9	36.7	23.3	27.0	21.7	20.6	24.7	23.6	24.4	20.7
Total Phosphorus												
(mg/L) Ave Monthly	5.34	6.2	8.22	5.91	4.44	4.31	2.9	4.15	4.72	4.93	4.77	4.62

Marginal DO High CBOD5 June.

June, May, April, March, February, December,

High TSS in August, July, June, May, March, February,

High Coliform August, July, May, April, March, February, November, October and September

# DMR Data for Outfall 001 (from September 1, 2021 to May 31, 2022)

Parameter	MAY-22	APR-22	MAR-22	FEB-22	JAN-22	DEC-21	NOV-21	OCT-21	SEP-21
Flow (MGD)									
Average Monthly	0.005	0.050	54	0.055	0.051	0.053	0.051	0.004	0.048
pH (S.U.)									
Minimum	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
pH (S.U.)									
Instantaneous Maximum	7.3	7.2	7.2	7.3	7.2	7.2	7.2	7.3	7.3
DO (mg/L)									
Minimum	4.0	4.1	4.1	4.1	4.3	4.3	4.6	4.3	4.0
TRC (mg/L)									
Average Monthly	0.25	0.26	0.3	1.55	.0.27	0.3	0.3	0.29	0.3
TRC (mg/L)									
Instantaneous Maximum	0.38	0.47	0.46	21.0	0.41	0.47	0.46	0.46	0.43
CBOD5 (mg/L)									
Average Monthly	32.8	< 15.5	< 18.0	11.7	19.7	12.9	10.7	13.4	9.1
CBOD5 (mg/L)									
Instantaneous Maximum	48.5	27.9	< 23.0	18.8	22.7	13.2	12.9	10.8	9.8
TSS (mg/L)									
Average Monthly	23.0	20.0	3.0	15.0	12.0	13.0	19.5	11.0	23.0
TSS (mg/L)									
Instantaneous Maximum	34.0	27.0	4.0	20.0	14.0	14.0	23.0	11.0	24.0
Fecal Coliform (#/100									
ml) Geometric Mean	1	2420	< 1.0	< 1	1.0	1.0	1.0	< 1	< 1.0
Fecal Coliform (#100 ml)									
Instantaneous Maximum	1	2420	1	< 1	1.0	1.0	1.0	< 1	1.0
Total Nitrogen (mg/L)									
Average Monthly	33.4	37.1	25.8	27.3	31.3	32.5	32.1	31.0	26.5
Ammonia (mg/L)									
Average Monthly	21.7	25.9	15.4	17.8	21.8	11.47	25.2	22.6	21.2

High fecals in April.

High TRC in February.

High CBOD5 in May.

Improved operation.

The high CBD5 should not be significant.

The high TRC and fecals indicate the need for more frequent monitoring,

#### NPDES Permit No. PA0222160

	Comp	<u>liance</u>	History	
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Effluent Violations for Outfall 001, from: Oc	tober 1, 2020 To: August 31, 2021
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Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
DO	06/30/21	Min	3.9	mg/L	4.0	mg/L
CBOD5	06/30/21	Avg Mo	54.9	mg/L	25.0	mg/L
CBOD5	02/28/21	Avg Mo	46.8	mg/L	25.0	mg/L
CBOD5	03/31/21	Avg Mo	39.5	mg/L	25.0	mg/L
CBOD5	12/31/20	Avg Mo	25.9	mg/L	25.0	mg/L
CBOD5	04/30/21	Avg Mo	33.4	mg/L	25.0	mg/L
CBOD5	05/31/21	Avg Mo	46.7	mg/L	25.0	mg/L
CBOD5	06/30/21	IMAX	57.3	mg/L	50.0	mg/L
CBOD5	05/31/21	IMAX	56.1	mg/L	50.0	mg/L
CBOD5	03/31/21	IMAX	57.3	mg/L	50.0	mg/L
CBOD5	02/28/21	IMAX	70.4	mg/L	50.0	mg/L
TSS	06/30/21	Avg Mo	78.0	mg/L	30.0	mg/L
TSS	08/31/21	Avg Mo	40.0	mg/L	30.0	mg/L
TSS	03/31/21	Avg Mo	33.0	mg/L	30.0	mg/L
TSS	07/31/21	Avg Mo	55.0	mg/L	30.0	mg/L
TSS	05/31/21	Avg Mo	43.0	mg/L	30.0	mg/L
TSS	02/28/21	Avg Mo	32.0	mg/L	30.0	mg/L
TSS	06/30/21	IMAX	116.0	mg/L	60.0	mg/L
TSS	07/31/21	IMAX	67.0	mg/L	60.0	mg/L
Fecal Coliform	05/31/21	Geo Mean	1087.8	CFU/100 ml	200	CFU/100 ml
Fecal Coliform	07/31/21	IMAX	2420	CFU/100 ml	1000	CFU/100 ml
Fecal Coliform	05/31/21	IMAX	2420	CFU/100 ml	1000	CFU/100 ml
Fecal Coliform	08/31/21	IMAX	2420	CFU/100 ml	1000	CFU/100 ml

# Effluent Violations for Outfall 001, from: September 1, 2021 To: May 31, 2022

Zinaoni Violatione ioi Gatian o	or, monin ooptonibol	1, 2021 10: 111	ay oi, zozz			
Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
TRC	02/28/22	Avg Mo	1.55	mg/L	.5	mg/L
TRC	02/28/22	IMAX	21.0	mg/L	1.6	mg/L
CBOD5	05/31/22	Avg Mo	32.8	mg/L	25.0	mg/L
Fecal Coliform	04/30/22	Geo Mean	2420	CFU/100 ml	2000	CFU/100 ml

Development of Effluent Limitations								
Outfall No.	001	Design Flow (MGD)	0.00939					
Latitude	41° 12' 12.00"	 Longitude	-80° 2' 19.00"					
Wastewater D	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
CBOD₅	25	Average Monthly	133.102(a)(4)(i)	92a.47(a)(1)
CBOD5	40	Average Weekly	133.102(a)(4)(ii)	92a.47(a)(2)
Total Suspended	30	Average Monthly	133.102(b)(1)	92a.47(a)(1)
Solids	45	Average Weekly	133.102(b)(2)	92a.47(a)(2)
рН	6.0 – 9.0 S.U.	Min – Max	133.102©	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)
DO	4.0	Daily minimum		BPJ

Comments: Weekly requirements are for POTWs.

#### **Water Quality-Based Limitations**

A sewerage based "Reasonable Potential Analysis" determined the following parameters were candidates for limitations or monitoring: BOD5, CBOD5, TSS, ammonia, nitrogen, phosphorus, DO, TRC, UV radiation, bacteria and pH.

The existing permit has ammonia. Nitrogen and phosphorus monitoring. E coli annual monitoring is proposed.

An artificial East Branch Wolf Creek dry stream reach at RMU 1.45 was created for Water Quality evaluation. No water quality requirements are necessary.

The TRC modelling show the 0.5-mg/L TRC BAT requirements with zero discharge as adequate.

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

Parameter	Limit (mg/l)	SBC	Model
BOD%	25	NA	25
Ammonia	25	NA	25
DO	4.0	NA	4.0

Comments: Modelling in stream DO affects the dry stream DO requirements.

#### **Best Professional Judgment (BPJ) Limitations**

Comments: Applies to DO only/

#### **Anti-Backsliding**

Not considered because of secondary treatment non-compliance

	SWP Basin	Strea		Stre	eam Name		RMI		vation (ft)	Drainag Area (sq m	1	Slope (ft/ft)	PW Withdr (mg	awal	Apply FC
	20C	343	348 EAST	BRANCH	WOLF CR	EEK	1.45	5 <b>0</b> 1	1300.00	(	0.01 0	.00000		0.00	
					St	ream Dat	a								
Design Cond.	LFY	Trib Flow	Stream Flow	Rch Trav Time	Rch Velocity	WD Ratio	Rch Width	Rch Depth	Tem	<u>Tributaı</u> ıp	ry pH	Tem	Stream np	<u>p</u> H	
oona.	(cfsm)	(cfs)	(cfs)	(days)	(fps)		(ft)	(ft)	(°C	)		(°C	:)		
Q7-10 Q1-10 Q30-10	0.014	0.00 0.00 0.00	0.00 0.00 0.00	0.000 0.000 0.000	0.000 0.000 0.000	0.0	0.00	0.00	0 2	0.00	7.00	9	0.00	0.00	
					Di	scharge l	Data								
			Name	Per	mit Number	Existing Disc Flow (mgd)	Permitt d Disc Flow (mgd)	Flov	c Res w Fa	erve ctor	Disc Temp (°C)		sc hH		
		Hemi	ock MHP	PA	0222160	0.016	8 0.016	8 0.0	168 (	0.000	25.0	00	7.20		
					Pa	arameter	Data								
			,	Paramete	r Name			Trib S Conc	Stream Conc	Fate Coef	i				
	_					(m	g/L) (n	ng/L)	(mg/L)	(1/day	s)				
			CBOD5				25.00	2.00	0.00	1.5	50				
			Dissolved	Oxygen			4.00	8.24	0.00	0.0	00				
			NH3-N				25.00	0.10	0.00	0.7	70				

	SWP Basin	Strea Cod		Stre	eam Name		RMI	Ele	evation (ft)	Drainage Area (sq mi)		ope /ft)	PWS Vithdrawal (mgd)	Apply FC
	20C	343	348 EAST	BRANCH	I WOLF CR	EEK	1.01	0	1257.33	20.	19 0.0	0000	0.00	✓
5.					St	ream Data	1							
Design Cond.	LFY	Trib Flow	Stream Flow	Rch Trav Time	Rch Velocity	WD Ratio	Rch Width	Rch Depth		<u>Tributary</u> np p	Н	<u>S</u> Temp	tream pH	
Cona.	(cfsm)	(cfs)	(cfs)	(days)	(fps)		(ft)	(ft)	(°C	)		(°C)		
Q7-10 Q1-10 Q30-10	0.014	0.00 0.00 0.00	0.00 0.00 0.00	0.000 0.000 0.000	0.000 0.000 0.000	0.0	0.00	0.0	00 2	0.00	7.00	0.0	0.00	ľ
	Ĩ				Di	scharge [	Data							
			Name	Per	mit Number	Existing Disc r Flow (mgd)	Permitt d Disc Flow (mgd)	Di:	sc Res	erve 7 ctor	Disc Γemp (°C)	Disc pH		
		<del></del>				0.0000	0.000	0 0.	0000	0.000	25.00	7	.00	
					Pa	arameter [								
			1	⊃aramete	r Name		onc C	rib conc ng/L)	Stream Conc (mg/L)	Fate Coef (1/days)	i			
	_		CBOD5				25.00	2.00	0.00	1.50				
			Dissolved	Oxygen			3.00	8.24	0.00					
			NH3-N	CAYGOII			25.00	0.00	0.00					

					Inp	ut Data	a vvQi	/I / .U						
	SWP Basin			Stre	eam Name		RMI		vation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	Witho	VS drawal gd)	Apply FC
	20C	343	348 EAST	BRANCH	I WOLF CR	EEK	0.00	00	1246.29	23.10	0.0000	00	0.00	<b>✓</b>
31					St	ream Dat	a							
Design Cond.	LFY	Trib Flow	Stream Flow	Rch Trav Time	Rch Velocity	WD Ratio	Rch Width	Rch Depth	Ten	<u>Tributary</u> np pH	T	<u>Strear</u> emp	<u>т</u> рН	
Cona.	(cfsm)	(cfs)	(cfs)	(days)	(fps)		(ft)	(ft)	(°C	;)	(	°C)		
Q7-10 Q1-10 Q30-10	0.014	0.00 0.00 0.00	0.00 0.00 0.00	0.000 0.000 0.000	0.000 0.000 0.000	0.0	0.00	0.0	0 2	0.00 7.	00	0.00	0.00	
					Di	scharge [	Data						1	
			Name	Per	rmit Number	Existing Disc Flow (mgd)	Permit d Disc Flow (mgd)	Dis Flo	c Res	Di serve Ter ctor	mp	Disc pH		
		<del></del>				0.0000	0.000	0.0	0000	0.000	25.00	7.00		
					Pa	arameter I	Data							
				Paramete	r Name	C	onc (	Conc	Stream Conc	Fate Coef				
	_					(m	g/L) (r	ng/L)	(mg/L)	(1/days)				
			CBOD5			2	25.00	2.00	0.00	1.50				
			Dissolved	Oxygen			3.00	8.24	0.00	0.00				
			NH3-N			2	25.00	0.00	0.00	0.70				

# WQM 7.0 Hydrodynamic Outputs

	<u>sw</u>	P Basin	Strea	m Code				Stream	Name			
		20C	3	4348			EAST BI	RANCH	WOLF CF	REEK		
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)	
Q7-10	0 Flow											
1.450	0.00	0.00	0.00	.0259	0.01837	.384	.81	2.11	0.08	0.322	24.97	7.20
1.010	0.28	0.00	0.28	.0259	0.00207	.463	12.66	27.36	0.05	1.198	20.43	7.01
Q1-10	0 Flow											
1.450	0.00	0.00	0.00	.0259	0.01837	NA	NA	NA	0.08	0.322	24.98	7.20
1.010	0.18	0.00	0.18	.0259	0.00207	NA	NA	NA	0.04	1.498	20.64	7.02
Q30-	10 Flow	,										
1.450	0.00	0.00	0.00	.0259	0.01837	NA	NA	NA	0.08	0.321	24.96	7.20
1.010	0.37	0.00	0.37	.0259	0.00207	NA	NA	NA	0.06	1.022	20.32	7.01

# WQM 7.0 Modeling Specifications

Par	rameters	Both	Use Inputted Q1-10 and Q30-10 Flows	•
WL	.A Method	EMPR	Use Inputted W/D Ratio	
Q1	-10/Q7-10 Ratio	0.64	Use Inputted Reach Travel Times	
Q3	0-10/Q7-10 Ratio	1.36	Temperature Adjust Kr	•
D.C	D. Saturation	95.00%	Use Balanced Technology	•
DC	Goal	5		

# WQM 7.0 Wasteload Allocations

NH3-N	Acute Allocatio	ns						
RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction	n
1.0	10 Hemlock	15.61	50	15.61	50	0	0	-
NH3-N	Chronic Allocat	tions						
		Baseline	Baseline WLA	Multiple Criterion	Multiple WLA	Critical Reach	Percent Reduction	
RMI	Discharge Name	Criterion (mg/L)	(mg/L)	(mg/L)	(mg/L)	13.5.0.511	110 440 11011	
10.000.000	Discharge Name					0	0	7.
1.0	ects 5 00 00 0 00 0 € 120 0 50 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	(mg/L)  1.84  cations	(mg/L) 25 CBOD5 ne Multiple	(mg/L)  1.84  NH3-N  Baseline Mu	(mg/L) 25	ved Oxygen	0 Critical	Percent Reductio

# WQM 7.0 D.O.Simulation

SWP Basin S	Stream Code 34348		EAST	<u>Stream Name</u> BRANCH WOLF O	CREEK
RMI	Total Discharg	e Flow (mgc	d) Ana	lysis Temperature	(°C) Analysis pH
1.010	0.0	17		20.430	7.013
Reach Width (ft)	Reach D	epth (ft)		Reach WDRatio	Reach Velocity (fps)
12.655	0.46	33		27.361	0.052
Reach CBOD5 (mg/L)	Reach Kc	(1/days)	<u>F</u>	each NH3-N (mg/	L) Reach Kn (1/days)
3.98	0.49	95		2.24	0.724
Reach DO (mg/L)	Reach Kr			Kr Equation	Reach DO Goal (mg/L)
7.878	12.5	13		Owens	5
Reach Travel Time (days) 1.198	TravTime (days)		n Results NH3-N (mg/L)	D.O. (mg/L)	
	0.120	3.74	2.05	8.20	
	0.240	3.52	1.88	8.24	
	0.359	3.32	1.73	8.24	
	0.479	3.12	1.58	8.24	
	0.599	2.94	1.45	8.24	
	0.719	2.77	1.33	8.24	
	0.839	2.60	1.22	8.24	
	0.959	2.45	1.12	8.24	
	1.078	2.31	1.03	8.24	
	1.198		0.94	8.24	

# **WQM 7.0 Effluent Limits**

4348 Permit		EAST BRANCH WOL			
Number	Disc Flow (mgd)	Parameter	Effl. Limit 30-day Ave. (mg/L)	Effl. Limit Maximum (mg/L)	Effl. Limit Minimum (mg/L)
PA0222160A	0.017	CBOD5	25		
		NH3-N	25	50	4
			Dissolved Oxygen		

	wo	QM 7.0 Modeling	<u>Specifications</u>		
	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	95.00%	Use Balanced Technology	✓	
	D.O. Goal	5			
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Proposed					Effluent Limitations and Monitoring

# WQM 7.0 Wasteload Allocations

<b>SWP Basin</b>	Stream Code	Stream Name
20C	34348	EAST BRANCH WOLF CREEK

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
1.45	Hemlock MHP	NA	50	9.08	50	0	0
1.01	0	NA	NA	15.6	NA	NA	NA
H3-N (	Chronic Allocat	ions					
RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
1000000	Discharge Name  Hemlock MHP	Criterion	WLA	Criterion	WLA		

#### **Dissolved Oxygen Allocations**

		CBC	DD5	NH	3-N	Dissolve	d Oxygen	Critical	Percent
RMI	Discharge Name	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Reach	Reduction
1.45	Hemlock MHP	25	25	25	25	5	5	0	0
1.01		NΔ	NΔ	NΔ	NΔ	NΙΔ	NΔ	NΔ	NΔ

# WQM 7.0 D.O.Simulation

SWP Basin St 20C	34348		EAST	Stream Name  BRANCH WOLF CREEK	:			
RMI	Total Discharge	A. T. K.	) Ana	lysis Temperature (°C)	Analysis pH			
1.450	0.01			24.974	7.199			
Reach Width (ft) 0.811	Reach De 0.38	95		Reach WDRatio 2.109	Reach Velocity (fps) 0.084			
Reach CBOD5 (mg/L)	Reach Kc			2.109 Reach NH3-N (mg/L)	Reach Kn (1/days)			
24.88	1.49		<u>IN</u>	24.87	1.026			
Reach DO (mg/L)	Reach Kr			Kr Equation	1.026 Reach DO Goal (mg/L)			
5.017	27.15	50		Owens	NA			
each Travel Time (days)		Subreach						
0.322	TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)				
	0.032	23.42	24.06	3.06				
	0.064	22.04	23.28	2.41				
	0.097	20.74	22.52	2.30				
	0.129	19.52	21.79	2.40				
	0.161	18.38	21.08	2.59				
	0.193	17.30	20.40	2.80				
	0.225	16.28	19.74	3.02				
			40.40	3.24				
	0.257	15.32	19.10	3.24				
	0.257 0.290	15.32 14.42	18.48	3.45				
RMI	0.290	14.42 13.57	18.48 17.88	3.45	Analysis pH			
<u>RMI</u> 1.010	0.290 0.322	14.42 13.57 Flow (mgd	18.48 17.88	3.45 3.65	Analysis pH 7.014			
1.010 Reach Width (ft)	0.290 0.322 Total Discharge 0.01 Reach De	14.42 13.57 Flow (mgd 7 pth (ft)	18.48 17.88	3.45 3.65 lysis Temperature (°C) 20.430 Reach WDRatio	7.014 Reach Velocity (fps)			
1.010 Reach Width (ft) 12.655	0.290 0.322 Total Discharge 0.01 Reach De 0.46	14.42 13.57 Flow (mgd 7 pth (ft) 3	18.48 17.88	3.45 3.65 Nysis Temperature (°C) 20.430 Reach WDRatio 27.361	7.014 Reach Velocity (fps) 0.052			
1.010 <u>Reach Width (ft)</u> 12.655 <u>Reach CBOD5 (mg/L)</u>	0.290 0.322 Total Discharge 0.01 Reach De 0.46 Reach Kc	14.42 13.57 E Flow (mgd 7 pth (ft) 3 11/days)	18.48 17.88	3.45 3.65 Nysis Temperature (°C) 20.430 Reach WDRatio 27.361 Reach NH3-N (mg/L)	7.014 Reach Velocity (fps) 0.052 Reach Kn (1/days)			
1.010 <u>Reach Width (ft)</u> 12.655 <u>Reach CBOD5 (mg/L)</u> 3.00	0.290 0.322 Total Discharge 0.01 Reach De 0.466 Reach Kc	14.42 13.57 2 Flow (mgd 7 pth (ft) 3 (1/days)	18.48 17.88	3.45 3.65 lysis Temperature (°C) 20.430 Reach WDRatio 27.361 Reach NH3-N (mg/L) 1.54	7.014 Reach Velocity (fps) 0.052 Reach Kn (1/days) 0.724			
1.010 Reach Width (ft) 12.655 Reach CBOD5 (mg/L) 3.00 Reach DO (mg/L)	0.290 0.322 Total Discharge 0.01 Reach De 0.46 Reach Kr ( 0.32 Reach Kr (	14.42 13.57 Flow (mgd 7 pth (ft) 3 (1/days) 5 1/days)	18.48 17.88	3.45 3.65 lysis Temperature (°C) 20.430 Reach WDRatio 27.361 leach NH3-N (mg/L) 1.54 Kr Equation	7.014  Reach Velocity (fps) 0.052  Reach Kn (1/days) 0.724  Reach DO Goal (mg/L)			
1.010 Reach Width (ft) 12.655 Reach CBOD5 (mg/L) 3.00 Reach DO (mg/L) 7.846	0.290 0.322 Total Discharge 0.01 Reach De 0.466 Reach Kc	14.42 13.57 Flow (mgd 7 pth (ft) 3 (1/days) 5 1/days)	18.48 17.88	3.45 3.65 lysis Temperature (°C) 20.430 Reach WDRatio 27.361 Reach NH3-N (mg/L) 1.54	7.014 Reach Velocity (fps) 0.052 Reach Kn (1/days) 0.724			
1.010 Reach Width (ft) 12.655 Reach CBOD5 (mg/L) 3.00 Reach DO (mg/L) 7.846	0.290 0.322 Total Discharge 0.01 Reach De 0.46 Reach Kr ( 0.32 Reach Kr (	14.42 13.57 Flow (mgd 7 pth (ft) 3 (1/days) 5 1/days) 13	18.48 17.88	3.45 3.65 lysis Temperature (°C) 20.430 Reach WDRatio 27.361 leach NH3-N (mg/L) 1.54 Kr Equation	7.014  Reach Velocity (fps) 0.052  Reach Kn (1/days) 0.724  Reach DO Goal (mg/L)			
1.010 Reach Width (ft) 12.655 Reach CBOD5 (mg/L) 3.00 Reach DO (mg/L) 7.846 each Travel Time (days)	O.290 O.322  Total Discharge O.01  Reach De O.46  Reach Kc. O.32  Reach Kr( 12.5	14.42 13.57 2 Flow (mgd 7 pth (ft) 3 (1/days) 5 1/days) 3 Subreach CBOD5 (mg/L)	18.48 17.88 17.88 10. Ana E 10. Ana 10. Ana 11. Ana 11	3.45 3.65 Ivsis Temperature (°C) 20.430 Reach WDRatio 27.361 teach NH3-N (mg/L) 1.54 Kr Equation Owens D.O. (mg/L)	7.014  Reach Velocity (fps) 0.052  Reach Kn (1/days) 0.724  Reach DO Goal (mg/L)			
1.010 Reach Width (ft) 12.655 Reach CBOD5 (mg/L) 3.00 Reach DO (mg/L) 7.846 each Travel Time (days)	0.290 0.322  Total Discharge 0.01  Reach De 0.46  Reach Kc 0.32  Reach Kr 12.5  TravTime (days) 0.120	14.42 13.57 Flow (mgd 7 pth (ft) 3 1/days) 5 1/days) 13 Subreach CBOD5 (mg/L)	18.48 17.88 1) Ana E Results NH3-N (mg/L)	3.45 3.65  Nysis Temperature (°C) 20.430  Reach WDRatio 27.361 Reach NH3-N (mg/L) 1.54 Kr Equation Owens  D.O. (mg/L) 8.24	7.014  Reach Velocity (fps) 0.052  Reach Kn (1/days) 0.724  Reach DO Goal (mg/L)			
1.010 Reach Width (ft) 12.655 Reach CBOD5 (mg/L) 3.00 Reach DO (mg/L) 7.846 each Travel Time (days)	O.290 O.322  Total Discharge O.01  Reach De O.46  Reach Kc. O.32  Reach Kr( 12.5	14.42 13.57 2 Flow (mgd 7 pth (ft) 3 (1/days) 5 1/days) 3 Subreach CBOD5 (mg/L)	18.48 17.88 17.88 10. Ana E 10. Ana 10. Ana 11. Ana 11	3.45 3.65 Ivsis Temperature (°C) 20.430 Reach WDRatio 27.361 teach NH3-N (mg/L) 1.54 Kr Equation Owens D.O. (mg/L)	7.014  Reach Velocity (fps) 0.052  Reach Kn (1/days) 0.724  Reach DO Goal (mg/L)			
1.010 Reach Width (ft) 12.655 Reach CBOD5 (mg/L) 3.00 Reach DO (mg/L) 7.846 each Travel Time (days)	0.290 0.322  Total Discharge 0.01  Reach De 0.46  Reach Kc 0.32  Reach Kr 12.5  TravTime (days)  0.120 0.240	14.42 13.57 Flow (mad 7 pth (ft) 3 (1/days) 5 Subreach CBOD5 (mg/L) 2.88 2.77	18.48 17.88 17.88 1 Results NH3-N (mg/L) 1.42 1.30	3.45 3.65  Nysis Temperature (°C) 20.430  Reach WDRatio 27.361 Reach NH3-N (mg/L) 1.54 Kr Equation Owens  D.O. (mg/L)  8.24 8.24	7.014  Reach Velocity (fps) 0.052  Reach Kn (1/days) 0.724  Reach DO Goal (mg/L)			
1.010 Reach Width (ft) 12.655 Reach CBOD5 (mg/L) 3.00 Reach DO (mg/L) 7.846 each Travel Time (days)	0.290 0.322  Total Discharge 0.011  Reach De 0.46 Reach Kc 12.5*  TravTime (days)  0.120 0.240 0.359	14.42 13.57 Flow (mad 7 pth (ft) 3 1/days) 5 1/days) 3 Subreach CBOD5 (mg/L) 2.88 2.77 2.66	18.48 17.88 17.88 1 Results NH3-N (mg/L) 1.42 1.30 1.19	3.45 3.65  Ivsis Temperature (°C) 20.430  Reach WDRatio 27.361 Reach NH3-N (mg/L) 1.54 Kr Equation Owens  D.O. (mg/L)  8.24 8.24 8.24	7.014  Reach Velocity (fps) 0.052  Reach Kn (1/days) 0.724  Reach DO Goal (mg/L)			
1.010 Reach Width (ft) 12.655 Reach CBOD5 (mg/L) 3.00 Reach DO (mg/L) 7.846 each Travel Time (days)	0.290 0.322  Total Discharge 0.01 Reach De 0.46 Reach Kc. 0.32 Reach Kr( 12.5*  TravTime (days) 0.120 0.240 0.359 0.479	14.42 13.57 15. Flow (mgd 7 pth (ft) 3 11/days) 13 Subreach CBOD5 (mg/L) 2.88 2.77 2.66 2.56	18.48 17.88 17.88 10. Ana 1. Results NH3-N (mg/L) 1.42 1.30 1.19 1.09	3.45 3.65  Ivsis Temperature (°C) 20.430 Reach WDRatio 27.361 teach NH3-N (mg/L) 1.54 Kr Equation Owens  D.O. (mg/L) 8.24 8.24 8.24 8.24 8.24	7.014  Reach Velocity (fps) 0.052  Reach Kn (1/days) 0.724  Reach DO Goal (mg/L)			
1.010 Reach Width (ft) 12.655 Reach CBOD5 (mg/L) 3.00 Reach DO (mg/L) 7.846 each Travel Time (days)	0.290 0.322  Total Discharge 0.01  Reach De 0.46 Reach Kc 0.322 Reach Kr(12.5'  TravTime (days) 0.120 0.240 0.359 0.479 0.599	14.42 13.57 7 pth (ft) 3 11/days) 5 11/days) 3 Subreach CBOD5 (mg/L) 2.88 2.77 2.66 2.56 2.46	18.48 17.88 17.88 1 Results NH3-N (mg/L) 1.42 1.30 1.19 1.09 1.00 0.92	3.45 3.65  Ivsis Temperature (°C) 20.430  Reach WDRatio 27.361 teach NH3-N (mg/L) 1.54 Kr Equation Owens  D.O. (mg/L) 8.24 8.24 8.24 8.24 8.24 8.24 8.24 8.24	7.014  Reach Velocity (fps) 0.052  Reach Kn (1/days) 0.724  Reach DO Goal (mg/L)			
1.010 Reach Width (ft) 12.655 Reach CBOD5 (mg/L) 3.00 Reach DO (mg/L) 7.846 each Travel Time (days)	0.290 0.322  Total Discharge 0.01  Reach De 0.46 Reach Kc 0.322 Reach Kr( 12.5'  TravTime (days)  0.120 0.240 0.359 0.479 0.599 0.719	14.42 13.57 7 pth (ft) 3 3 (1/days) 5 11/days) 3 Subreact CBOD5 (mg/L) 2.88 2.77 2.66 2.56 2.46 2.36	18.48 17.88 17.88 1 Results NH3-N (mg/L) 1.42 1.30 1.19 1.09	3.45 3.65  Nysis Temperature (°C) 20.430  Reach WDRatio 27.361 Reach NH3-N (mg/L) 1.54 Kr Equation Owens  D.O. (mg/L)  8.24 8.24 8.24 8.24 8.24 8.24 8.24 8.2	7.014  Reach Velocity (fps) 0.052  Reach Kn (1/days) 0.724  Reach DO Goal (mg/L)			
1.010 Reach Width (ft) 12.655 Reach CBOD5 (mg/L) 3.00 Reach DO (mg/L) 7.846 leach Travel Time (days)	0.290 0.322  Total Discharge 0.01  Reach De 0.46  Reach Kc 0.32  Reach Kr 12.5  TravTime (days)  0.120 0.240 0.359 0.479 0.599 0.719 0.839	14.42 13.57 Plow (mad 7 pth (ft) 3 (1/days) 3 Subreach CBOD5 (mg/L) 2.88 2.77 2.66 2.56 2.46 2.36 2.27	18.48 17.88 17.88 1 Results NH3-N (mg/L) 1.42 1.30 1.19 1.09 1.00 0.92 0.84	3.45 3.65  Nysis Temperature (°C) 20.430  Reach WDRatio 27.361 Reach NH3-N (mg/L) 1.54 Kr Equation Owens  D.O. (mg/L)  8.24 8.24 8.24 8.24 8.24 8.24 8.24 8.2	7.014  Reach Velocity (fps) 0.052  Reach Kn (1/days) 0.724  Reach DO Goal (mg/L)			

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# **WQM 7.0 Effluent Limits**

		<u>aam Code</u> 34348	,	<u>Stream Nam</u> EAST BRANCH WOL			
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)
1.450	Hemlock MHP	PA0222160	0.017	CBOD5	25		<del>10</del> 0
				NH3-N	25	50	
				Dissolved Oxygen			5

	SWP Basin	Strea		Stre	eam Name		RMI	Ele	evation (ft)		nage ea mi)	Slope (ft/ft)	PWS Withdra (mgd	awal	Apply FC
	20C	343	848 EAST	BRANCH	WOLF CR	EEK	0.00	00	1246.2	9	23.10	0.00000		0.00	~
					St	ream Dat	a								
Design Cond.	LFY	Trib Flow	Stream Flow	Rch Trav Time	Rch Velocity	WD Ratio	Rch Width	Rch Depth	n Te	<u>Tribu</u> emp	tary pH	Ten	<u>Stream</u> np	рН	
cond.	(cfsm)	(cfs)	(cfs)	(days)	(fps)		(ft)	(ft)	(	PC)		(°C	<b>(</b> )		
Q7-10 Q1-10	0.014	0.00	0.00	0.000	0.000 0.000	0.0	0.00	0.	00	20.00	7.00	)	0.00	0.00	
Q30-10		0.00	0.00	0.000	0.000										
					Di	scharge [	Data								
			Name	Per	mit Number	Existing Disc Flow (mgd)	Permitt d Disc Flow (mgd)	Di:	sc R	eserve Factor	Disc Temp (°C)		isc oH		
						0.0000	0.000	0 0.	0000	0.000	25	.00	7.00		
					Pa	arameter I	Data								
				Paramete	r Name			Trib Conc	Stream						
				, arainoto	1101110	(m	g/L) (r	ng/L)	(mg/L	) (1/da	ays)				
			CBOD5			:	25.00	2.00	0.0	00	1.50	,			
			Dissolved	Oxygen			3.00	8.24	0.0	00	0.00				
			NH3-N				25.00	0.00	0.0	00	0.70				

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	SWP Basin	Strea		Stre	eam Name		RMI	E	levatio (ft)	n [	Orainage Area (sq mi)	Slop (ft/f	١	PWS Withdrawal (mgd)	Apply FC
	20C	343	848 EAST	BRANCH	WOLF CR	EEK	1.0	10	1257	.33	20.1	0.00	000	0.00	~
					St	ream Data	a								
Design Cond.	LFY	Trib Flow	Stream Flow	Rch Trav Time	Rch Velocity	WD Ratio	Rch Width	Rch Dept		<u>T</u> Temp	ributary ph	E	<u>S</u> Temp	<u>Stream</u> pH	
cond.	(cfsm)	(cfs)	(cfs)	(days)	(fps)		(ft)	(ft)		(°C)			(°C)		
Q7-10 Q1-10	0.014	0.00	0.00	0.000	0.000 0.000	0.0	0.00	0	.00	20.	00 7	.00	0.0	00 0.00	
Q30-10		0.00	0.00	0.000	0.000										
					Di	scharge [	Data								
			Name	Per	mit Number	Existing Disc Flow (mgd)	Permit d Disc Flow (mgd	D	sign isc low ngd)	Rese Fact	rve Te	isc mp 'C)	Disc pH		
		Hemi	ock	PA	0222160A	0.0168	0.01	68 0	.0168	0.	000	25.00	7	.19	
					Pa	rameter [	Data								
				Paramete	r Name	Di:		Trib Conc	Strea		Fate Coef				
				diamete	· realine	(m	g/L) (i	mg/L)	(mg	/L)	(1/days)				
	-		CBOD5			2	25.00	2.00	(	0.00	1.50				
			Dissolved	Oxygen			4.00	8.24	(	0.00	0.00				
			NH3-N			2	25.00	0.10		0.00	0.70				

# WQM 7.0 Hydrodynamic Outputs

	SW	P Basin	Strea	m Code				Stream	<u>Name</u>				
		20C	34348		EAST BRANCH WOLF CREEK								
RMI	Stream Flow	PWS With	Net Stream Flow	Flow		Depth	Width	W/D Ratio	Velocity	Trav Time	Analysis Temp	Analysis pH	
	(cfs)	(cfs)	(cfs)	(cfs)	(ft/ft)	(ft)	(ft)		(fps)	(days)	(°C)		
Q7-1	0 Flow												
1.010	0.28	0.00	0.28	.0259	0.00207	.463	12.66	27.36	0.05	1.198	20.43	7.01	
Q1-1	0 Flow												
1.010	0.18	0.00	0.18	.0259	0.00207	NA	NA	NA	0.04	1.498	20.64	7.02	
Q30-	10 Flov	v											
1.010	0.37	0.00	0.37	.0259	0.00207	NA	NA	NA	0.06	1.022	20.32	7.01	

# WQM 7.0 D.O.Simulation

SWP Basin St 20C	ream Code 34348		EAST	Stream Name BRANCH WOLF CRE	EEK
RMI	Total Discharge	Flow (mgd	i) Ana	lysis Temperature (°C	Analysis pH
1.010	0.01	7		20.430	7.013
Reach Width (ft)	Reach De	pth (ft)		Reach WDRatio	Reach Velocity (fps)
12.655	0.46	3		27.361	0.052
Reach CBOD5 (mg/L)	Reach Kc (	1/days)	<u> </u>	leach NH3-N (mg/L)	Reach Kn (1/days)
3.98	0.49			2.24	0.724
Reach DO (mg/L)	Reach Kr (	1/days)		Kr Equation	Reach DO Goal (mg/L)
7.878	12.51	3		Owens	5
Reach Travel Time (days) 1.198	TravTime (days)	Subreach CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)	
	0.120	3.74	2.05	8.20	
	0.240	3.52	1.88	8.24	
	0.359	3.32	1.73	8.24	
	0.479	3.12	1.58	8.24	
	0.599	2.94	1.45	8.24	
	0.719	2.77	1.33	8.24	
	0.839	2.60	1.22	8.24	
	0.959	2.45	1.12	8.24	
	1.078	2.31	1.03	8.24	
	1.198	2.17	0.94	8.24	

#### **WQM 7.0 Wasteload Allocations**

	SWP Basin 20C		<u>im Code</u> 4348			ream Name NCH WOLF	CREEK		
NH3-N	Acute Alloc	cation	s						
RMI	Discharge	Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction	Ü
1.0	10 Hemlock		15.61	50	15.61	50	0	0	-
NН3-N	Chronic All		ons Baseline	Baseline	Multiple	Multiple	Critical	Percent	
RMI	Discharge N		Criterion	WLA	Criterion	WLA	Reach	Reduction	
	Discharge N								
1.0		lame	Criterion (mg/L) 1.84	WLA (mg/L)	Criterion (mg/L)	WLA (mg/L)	Reach	Reduction 0	- - - -
1.0	010 Hemlock	Alloc	Criterion (mg/L)  1.84  ations	WLA (mg/L)  25  CBOD5  ne Multiple	Criterion (mg/L) 1.84 NH3-N Baseline Mu	WLA (mg/L)	Reach 0 ved Oxygen ne Multiple	0 Critical	Percent Reduction

# **WQM 7.0 Effluent Limits**

	SWP Basin S	Stream Code 34348	,	<u>Stream Nam</u> EAST BRANCH WOL	A conservation		
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)
1.010	Hemlock	PA0222160A	0.017	CBOD5	25		
				NH3-N	25	50	
				Dissolved Oxygen			4

B	C scharger	John Chrzan	owski		- 6	Н		- 1	K Mondav. July 25.	2022	M
	Site	Hemlock MH	P				Revised		Monday, July 25,		
	nicipality	Wolf Creek T Butler	ownship								
	County ES Permit	PA0222160									
	0.5	17,10222100									
nout onero	priate values in I	D4:00 and E4:0	= 7		TRC EVA	LUATION					
(	0.2747	= Q stream (d			0.5	= CV Daily					
(	0.0250	= Q discharg			0.5	= CV Hourly					
	30 0.3	= no. sample:	s emand of Strea		1	= AFC_Partial = CFC_Partial					
	0	= Chlorine De	emand of Disch		15	= AFC_Criteria	Compliance Tim	e (min)			
		= BAT/BPJ V			720	= CFC_Criteria	Compliance Tim	e (min)			
	0 Source	= % Factor o	f Safety (FOS) AFC Calculation			=Decay Coeffi	rence		CEC C	alculations	
	TRC	1.3.2.iii	AFC Calculatio	WLA afc =	2.285		.2.iii		WLA cfc		
PENTOXSD		5.1a		LTAMULT afc =			.1 c		LTAMULT cfc	= 0.581	
PENTOXSD	TRG	5.1b		LTA_afc=	0.851	6.	.1 d		LTA_cfc	= 1.291	
Source	VI-WARRIED	Solve to				Efflue	ent Limit Calculat	tions			
PENTOXSD PENTOXSD		5.1f 5.1g			AML MULT = 1 LIMIT (mg/l) =			BAT/BPJ			
LITTONOD	1110	5.19			( LIMIT (mg/l) =	1.635		JA 1701 0			
				AND THE SOUTH STORES							
VVLA afc		(.019/e(-k*AF	C_tc)) + [(AFC_ : Yc^Qs^Xs/Od	.Yc*Qs*.019/Qd*( i)]^(1-FOS/100)	e(-k^AFC_tc))						
LTAMULT afc		EXP((0.5*LN(	cvh^2+1))-2.326	6*LN(cvh^2+1)^0.	5)						
LTA_afc		wla_afc*LTAM	IULT_afc								
WLA_cfc		(,011/e(-k*CF	C to) + [(CFC	Yc*Qs*.011/Qd*e	(-k*CFC_tc))						
		+ Xd + (CFC	C_Yc*Qs*Xs/Qd	I)]*(1-FOS/100)							
LTAMULT_cfc LTA_cfc		EXP((0.5*LN() wla_cfc*LTAM	cvd^2/no_samp	les+1))-2.326*LN	(cvd^2/no_sampl	es+1)^0.5)					
		18/2	National Assets								
AML MULT		EXP(2.326*LN	M(cvd^2/no sar	onles+1\\0.5\\0.5	*I NICOVIDA 2 (no no	monloc+1))					
	4177	MINIONT DO	LAMINICUTA SECT	To ofcomonal ha	LIN(CVU ZNIO_SC	inples (1))					
AVG MON UM INST MAX LIM (0.011/EXP(-K*C	/IIT -K^CFC_tc/1440) CFC_tc/1440))+X	MIN(BAT_BP. 1.5*((av_mon )+(((CFC_Yc^Qs cd+(CFC_Yc^Qs	J,MIN(LTA_afc,I _limit/AML_MU s*0.011)/(1.547*	LTA_cfc)*AML_M ILT)/LTAMULT_a 'Qd) (1-FOS/100)	ULT) fc)						
(0.011/EXP(- *EXP(-K*0 Stream Stream	-K*CFC_tc/1440); CFC_tc/1440))+X Chlorine Requi Reach/Node Flow	MIN(BAT_BP. 1.5*((av_mon )+(((CFC_Yc^Qs d+(CFC_Yc^Qs	J,MIN(LTA_afc,I _limit/AML_MU s*0.011)/(1.547*	LTA_cfc)*AML_M ILT)/LTAMULT_a *Qd) *(1-FOS/100) perennial 1 dry	ULT) fc) Chlorine 2 perennial	Demand	+ (	Chlorine R	esidual		
(0.011/EXP(- *EXP(-K*0 Stream Stream	.K*CFC_tc/1440); CFC_tc/1440)))+X Chlorine Requi Reach/Node Flow Code	MIN(BAT_BP.  1.5*((av_mon )+(((CFC_Yc*Qs (d+(CFC_Yc*Qs	J,MIN(LTA_afc,t _limit/AML_MU s^0.011)/(1.547^ s^Xs/1.547^Qd))	LTA_cfc)*AML_M ILT)/LTAMULT_a *Qd) *(1-FOS/100) perennial	Chlorine		+ (	Chlorine R	esidual		
(0.011/EXP(-K**( Stream Stream Stream Stream Stream	-K*CFC_tc/1440) CFC_tc/1440))+X Chlorine Requi Reach/Node Flow Code Function	MIN(BAT_BP.  1.5*((av_mon )+(((CFC_Ye*Qs (d+(CFC_Ye*Qs	J,MIN(LTA_afc,t _limit/AML_MU s^0.011)/(1.547~ s^Xs/1.547~Qd)) = 2	LTA_cfc)*AML_M LT/ILTAMULT_a *Qd) *(1-FOS/100) perennial fry unknown	Chlorine 2 perennial 34348 30		+ (	Chlorine R	esidual		
(0.011/EXP(- *EXP(-K*( Stream Stream Stream Stream	-K*CFC_tc/1440))+X CFC_tc/1440))+X Chlorine Requi Reach/Node Flow Code Function outfall	MIN(BAT_BP.  1.5*((av_mon )+(((CFC_Ye*Qs (d+(CFC_Ye*Qs	J,MIN(LTA_afc,I, _limit/AML_MU s-0.011)/(1.547- r*Xs/1.547-Qd)) = 2	LTA_cfc)*AML_M LT)/LTAMULT_a *Qd) *(1-FOS/100) perennial dry unknown	ULT) fc)  Chlorine 2 perennial 34348		+ (	Chlorine R	esidual		
(0.011/EXP(:*EXP(-K*0) Stream Stream Stream Stream Samples reach	-K*CFC_tc/1440) CFC_tc/1440))+X Chlorine Requi Reach/Node Flow Code Function	MIN(BAT_BP.  1.5*((av_mon )+(((CFC_Ye*Qs (d+(CFC_Ye*Qs	J.MIN(LTA_afc,t _limit/AML_MU s^0.011)/(1.547* s^xxs/1.547*Qd)) = 2 RMI RMI feet	TTA_cfc)*AML_M "LT)/L TAMULT_a "(1-FOS/100) perennial 1 dry unknown 30 0.27 0 1425.6	Chlorine 2 perennial 34348 30 1.36 0 7191.5712		+ (	Chlorine R	esidual		
(0.011/EXP(- *EXP(-K*( Stream Stream Stream Samples reach drainage	AIT  ACCEC_te/1440))+X  CREC_te/1440))+X  Chlorine Requi Reach/Node Flow Code Function outfall Reach End	MIN(BAT_BP. 1.5"((av_mon )+(((CFC_Ye^Qs (d+(CFC_Ye^Qs red Conditions	J,MIN(LTA_afc,L _limit/AML_MU s*0.011)/(1.647** "Xs/1.647**Qd)) = 2 2 RMI RMI feet sq miles	Cd) P(1-FOS/100) Perennial dry unknown 30 0.27 0 1425.6 0.01	Chlorine 2 perennial 34348 30 1.36 0 7191.5712 20.19		+ (	Chlorine R	esidual		
(0.011/EXP(*EXP(-K**(0.000)) Stream Stream Stream Stream Samples reach drainage TRC	-K*CFC_tc/1440))+X CFC_tc/1440))+X Chlorine Requi Reach/Node Flow Code Function outfall	MIN(EAT_BP. 1.6*((av_men )+(((CFC_Ye^Qe (d+(CFC_Ye^Qe red Conditions	JMINICTA_afc.LIImit/AML_MU  10.011)/(1.647~Ye/1.647~Qd)) = 2  RMI RMI RMI feet sq miles mg/L mg/L	TA_cfc)*AML_M LT);I.TAMULT_a *PG4) **r(1-F05/100) perennial 1 dry unknown 30 0.27 0.27 0.01 0.009 0.009 0.028	Chlorine 2 perennial 34348 30 1.36 0 7191.5712 20.19 0.500 1.636		+ (	Chlorine R	esidual		
(0.011/EXP()*EXP(-K*() Stream Stream Stream Stream Streach drainage TRC elevation	AIT  ACCEC_te/1440))+X  CREC_te/1440))+X  Chlorine Requi Reach/Node Flow Code Function outfall Reach End	MIN(EAT_BP. 1.5"((av_mon )+(((CFC_Ye^Qe (d+(CFC_Ye^Qe Conditions  average maximum modelled	J,MIN(LTA_afc,L _limit/AML_MU \$^0.0.11)/(1.647^* Ys/1.647^Qd)) = 2 RMI RMI feet sq miles mg/L feet	TA_cfc)*AML_M (T);/I.TAMULT_a (Qd) (*(1-FOS/100) perennial 1 dry unknown 30 0.27 0 1425.6 0.01 0.009 0.028 1300	Chlorine 2 perennial 34348 30 1.36 0 7191.5712 20.19 0.500 1.636 1257.33		+ (	Chlorine R	esidual		
(0.011/EXP(*EXP(**) Stream Stream Stream Streach reach drainage TRC elevation elevation	AIT  ACCEC_te/1440))+X  CREC_te/1440))+X  Chlorine Requi Reach/Node Flow Code Function outfall Reach End	MIN(EAT_BP. 1.5*((av_men )+(((CFC_Ye^Qe (d+(CFC_Ye^Qe red Conditions  average maximum modelled modelled	J.MINICTA_afc.l. Ilmit/AML_MU  r0.011)/(1.647- rXs/1.647-Qd)) = 2  RMI RMI feet feet sq miles mg/L feet feet feet feet	TA_cfc)*AML_M LT),fl.TAMULT_a 'Qd) '('1-FOS/100) perennial 1 dry unknown 30 0.27 0 1425.6 0.01 0.009 0.028 1300 1257.33	Chlorine 2 perennial 34348 30 1.36 0 7191.5712 20.19 0.500 1.636 1257.33 1246.29		# <b>(</b>	Chlorine R	esidual		
(0.011/EXP()*EXP(-K**) Stream Stream Stream Streach drainage TRC elevation elevation slope low flow	AIT  ACCEC_te/1440))+X  CREC_te/1440))+X  Chlorine Requi Reach/Node Flow Code Function outfall Reach End	MIN(EAT_BP. 1.5"((av_mon )+(((CFC_Ye^Qe (d+(CFC_Ye^Qe Conditions  average maximum modelled	J.MINUCTA_afc.l_ IlimidAML_MU **0.011)(1.647** "'Xs/1.647*Qd)) = 2 RMI RMI feet feet feet foot/foot cfs/sq mi	TA_cfc)*AML_M LT),fl.TAMULT_a (Qd) perennial 1 dry unknown 30 0.27 0 1425.6 0.01 0.009 0.028 1300 1257.33 0.030 0.014	Chlorine 2 perennial 34348 30 1.36 0 7191.5712 20.19 0.500 1.636 1257.33 1246.29 0.002 0.0014		+ (	Chlorine R	esidual		
(0.011/EXP(*EXP(.	.K*CFC_tel/1440); CFC_ter/1440); CFC_ter/1440); CFC_ter/1440); Reach/Node Flow Code Function outfall Reach End	MIN(EAT_BP. 1.5*((av_men )+(((CFC_Ye^Qe (d+(CFC_Ye^Qe red Conditions  average maximum modelled modelled	J,MINICLTA_afc.l_ Ilmit/JAML_MU **0.011)/(1.647** Yex/1.647**Qd)) = 2 RMI RMI feet sq miles mg/L feet feet feet foot/foot cfs/sq mi mgd	CTA_cfc)*AML_M LT);/LTAMULT_a Qd) perennial 1 dry unknown 30 0.27 0 1425.6 0.01 0.029 0.028 1300 1257.33 0.030 0.014 0.0250	ULT) fe)  Chlorine 2 perennial 34348 30 1.36 0 7191.5712 20.19 0.500 1.636 1257.33 1246.29 0.002 0.014 0.0250		e (	Chlorine R	esidual		
(0.011/EXP( (0.011/EXP(x)) (0.011/EX	#T  **CFC_te/1440);**  CFC_te/1440);**  CFC_te/1440);**  CFC_te/1440);**  Chlorine Reach/Node Flow  Code Function  outfall Reach End  limitation	MIN(EAT_BP. 1.5*((av_mon )+(((CFC_Ye^Qe_red (d+(CFC_Ye^Qe_red Conditions  average maximum modelled modelled modelled mut aquatic life of	J,MINICLTA_afc.l_ IlmidAML_MU **0.011)/(1.647** Yex/1.647**Qd)) = 2 RMI RMI feet sq miles mg/L feet feet feet foot/foot cfs/sq mi mgd hours or need for aqu	CTA_cfc)*AML_M LT);/LTAMULT_a  Qd) (r(1-FOS/100) perennial 1 dry unknown 0.27 0.027 0.01 0.009 0.028 1300 1257.33 0.030 0.014 0.0250 24.000 uatic life protectic	ULT) fe)  Chlorine 2 perennial 34348 30 1.36 0 7191.5712 20.19 0.500 1.636 1257.33 1246.29 0.002 0.014 0.0250 24.000 on and repid nal	Demand	+ (			ditions no aque	atic life
NST MAX LIM  10.0.11/EXP(*EXP(-K**)  Stream  Stream  Stream  Stream  Stream  Stream  Samples  reach  r	#*CFC_te/1440) PC_te/1440) PC_te/1440) PC_te/1440) PC_te/1440) PC_te/1440 PC_	MIN(EAT_BP. 1.5*((av_mon )+(((CFC_Ye^Qe_red (d+(CFC_Ye^Qe_red Conditions  average maximum modelled modelled modelled wt aquatic life of	J,MINICLTA_afc.l_ IlmidAML_MU **0.011)/(1.647** Yex/1.647**Qd)) = 2 RMI RMI feet sq miles mg/L feet feet feet foot/foot cfs/sq mi mgd hours or need for aqu	CTA_cfc)*AML_M LT);/LTAMULT_a  Qd) (r(1-FOS/100) perennial 1 dry unknown 0.27 0.027 0.01 0.009 0.028 1300 1257.33 0.030 0.014 0.0250 24.000 uatic life protectic	ULT) fe)  Chlorine 2 perennial 34348 30 1.36 0 7191.5712 20.19 0.500 1.636 1257.33 1246.29 0.002 0.014 0.0250 24.000 on and repid nal	Demand				ditions no aqua	atic life
NST MAX LIM  (0.011/EXP(*EXP(-K*C  Stream  Stream  Stream  Samples reach  drainage  FRC  elevation elevation elevation ow flow discharge Qunoff  Dry stream  protection is	- K*CFC_te/1440) CPC_te/1440) CPC_te/1440) CPC_te/1440) CPC_te/1440) CPC_te/1440 Code Function Outfall Reach End Iimitation  Period discharge withos required and te	MIN(EAT_BP. 1.5*((av_mon )+(((CFC_Ye^Qe_red (d+(CFC_Ye^Qe_red Conditions  average maximum modelled modelled modelled wt aquatic life of	JMINUCTA_afc.l_ IlimidAML_MU **0.011y(1.647** **7xs/1.647**Qd)) = 2  RMI RMI feet feet feet feet foot/foot cfs/sq mi mgd hours or need for aquid requirement	TA_cfc)*AML_M LT/J.f.TAMULT_a "Q4) "(1-F0S/100) perennial 1 dry unknown 30 0.27 0 1425.6 0.01 0.099 0.028 1300 1257.33 0.030 0.014 0.0250 24.000 uatic life protectics is should suffice	Chlorine 2 perennial 34348 30 1.36 0 7191.5712 20.19 0.500 1.636 1257.33 1246.29 0.002 0.0014 0.0250 0.0014 0.0250 0.0144 0.0250 0.0014 0.0250 0.0014 0.0250 0.0014 0.0250 0.0014 0.0250 0.0014 0.0250 0.0014 0.0250 0.0014	Demand				ditions no aqua	atic life
(0.011/EXP(*EXP(.K**C) Stream Stream Stream Stream Stream Gamples reach drainage TRC slevation slevation slope ow flow discharge Runoff Dry stream protection is	#T  **CFC_te/1440);**  CFC_te/1440);**  CFC_te/1440);**  CFC_te/1440);**  Chlorine Reach/Node Flow  Code Function  outfall Reach End  limitation	MIN(EAT_BP. 1.5*((av_mon )+(((CFC_Ye^Qe_red (d+(CFC_Ye^Qe_red Conditions  average maximum modelled modelled modelled wt aquatic life of	J,MINICLTA_afc.l_ IlmidAML_MU **0.011)/(1.647** Yex/1.647**Qd)) = 2 RMI RMI feet sq miles mg/L feet feet feet foot/foot cfs/sq mi mgd hours or need for aqu	CTA_cfc)*AML_M LT);/LTAMULT_a  Qd) (r(1-FOS/100) perennial 1 dry unknown 0.27 0.027 0.01 0.009 0.028 1300 1257.33 0.030 0.014 0.0250 24.000 uatic life protectic	ULT) fe)  Chlorine 2 perennial 34348 30 1.36 0 7191.5712 20.19 0.500 1.636 1257.33 1246.29 0.002 0.014 0.0250 24.000 on and repid nal	Demand				ditions no aqua	atic life
(0.011/EXP(*EXP(.K**C) Stream Stream Stream Stream Samples reach drainage TRC selevation slevation slope ow flow discharge Runoff Dry stream protection is stream stream	.K*CFC_tel/1440); CFC_te/1440); CFC_te/1440); CFC_te/1440); CFC_te/1440); Reach/Node Flow Code Function outfall Reach End limitation  Period discharge witho s required and te flow flow flow flow flow flow flow flow	MIN(EAT_BP. 1.5*((av_mon )+(((CFC_Ye^Qered (Conditions  average maximum modelled modelled modelled ut aquatic life o connology base	JMINICTA_afc.l_ IlimidAML_MU **0.011)/(1.647** **X*/1.647** **Qd))**  RMI RMI Red RMI Red Red Red Rod Rod Rod Rod Rod Rod Rod Rod Rod Ro	TA_cfc/*AML_M LT),/LTAMULT_a  (Qd) (r(1-FOS/100)     perennial     1     dry     unknown     30     0.27     0.01     0.028     0.028     1300     0.028     1300     0.014     0.0250     24.000     outilities protectics, should suffice	ULT)  Chlorine 2 perennial 34348 30 138 0 7191.5712 20.19 0.500 1.636 1257.33 1246.29 0.002 0.014 0.0250 24.000 on and rapid nai	Demand				ditions no aque	stic life
NST MAX LIM  (0.011/EXP(*EXP(-K*C*EXP(-K*C Stream Stream Stream Stream Samples each drainage FRC each drainage FRC ow flow discharge Runoff Dry stream protection is stream stream stream	#*CFC_tc/1440) PC_tc/1440) PC_tc/1440) PC_tc/1440) PC_tc/1440) PC_tc/1440) PC_tc/1440 PC	MIN(BAT_BP. 1.5*([av_mon )+(((CFC_Ye^Qe_Ye^Qe_Ye^Qe_Ye^Qe_Ye^Qe_Ye^Qe_Ye)  Conditions  average maximum modelled modelled modelled wit aquatic life cechnology base  total demand	JMINULTA_afc.l_ IlimidAML_MU  **0.011)(1.647** '*Txs/1.647**Qd))  = 2  RMI RMI feet feet feet feet foot/foot cfs/sq mi mgd hours or need for aqu d requirement  cfs MGD MGD MGD mg/L	TA_cfc/*AML_M LT/,LTAMULT_a  Qd)  perennial dry unknown  30 0.27 0 1425.6 0.01 0.009 1257.33 0.030 0.025 1300 1257.33 0.030 0.044 0.0250 24,000 untic life protectic s should suffice  0.00014 0.00014 0.00014	Chlorine 2 perennial 34348 30 1.36 0 7191.5712 20.19 0.500 1.636 1257.33 1246.29 0.002 0.002 0.0014 0.0250 0.0014 0.0250 0.0014 0.0250 0.0014 0.0250 0.0014 0.0250 0.0014 0.0250 0.0014 0.0250	Demand				ditions no aqua	atic life
(0.011/EXP(*EXP(**EXP(.	.K*CFC_tel/1440); CFC_te/1440); CFC_te/1440); CFC_te/1440); CFC_te/1440); Reach/Node Flow Code Function outfall Reach End limitation  Period discharge witho s required and te flow flow flow flow flow flow flow flow	MIN(EAT_BP. 1.5*((av_men )+(((CFC_Ye^Qered Conditions  average maximum modelled modelled modelled ut aquatic life cachnology base  total demand demand demand demand	JMINICTA_afc.l_ IlimidAML_MU **0.011)/(1.647** **X*/1.647** **Qd))**  RMI RMI Red RMI Red Red Red Rod Rod Rod Rod Rod Rod Rod Rod Rod Ro	TA_cfc/*AML_M LT),/LTAMULT_a  (Qd) (r(1-FOS/100)     perennial     1     dry     unknown     30     0.27     0.01     0.028     0.028     1300     0.028     1300     0.014     0.0250     24.000     outilities protectics, should suffice	ULT)  Chlorine 2 perennial 34348 30 138 0 7191.5712 20.19 0.500 1.636 1257.33 1246.29 0.002 0.014 0.0250 24.000 on and rapid nai	Demand				ditions no aque	atic life
(0.011/EXP( (0.011	ACCFC_tel/1440); ACCFC_tel/1440); ACCFC_tel/1440); ACCFC_tel/1440); ACCFC_tel/1440); ACCFC_tel/1440; ACCFC_Tel	MIN(EAT_BP. 1.5*((av_men )+(((CFC_Ye^Qered Conditions  average maximum modelled modelled modelled ut aquatic life cachnology base  total demand demand demand demand	JMINICTA_afc.l_ IlimidAML_MU  **0.011)/(1.647**  **2.41.647**  2  RMI RMI feet sq miles mg/L feet feet feet foot/foot cfs/sq mi mgd hours or need for aqu dr requirement  cfs MGD mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	TA_cfc/*AML_M LT/;I.TAMULT_a  (Qd) (r(1-FOS/100)	Chlorine 2 perennial 34348 30 138 0 7191.5712 20.19 0.500 1.636 1257.33 1246.29 0.002 0.014 0.0250 24.000 on and rapid nati	Demand				ditions no aqua	atic life
(0.011/EXP( (0.011/EXP( *EXP(-K*C Stream Stream Stream Stream Stream Samples reach drainage TRC elevation elevation elevation slope low flow discharge Runoff Dry stream protection is stream stream stream stream stream	ACCFC_tel/1440) CFC_te/1440) CFC_te/1440) CFC_te/1440) CFC_te/1440) Reach/Node Flow Code Function outfall Reach End  limitation  Period discharge witho s required and te flow flow flow flow chlorine discharge Total Stream	MIN(EAT_BP. 1.5*((av_mon) ++(((CFC_Ye^*Cs, (d+(CFC_Ye^*Cs, ed)) Conditions  average maximum modelled modelled modelled ut aquatic life o connology base  total demand demand //waste	JMINICTA_afc.l_IlmidAML_MU  **0.011)/(1.647**  **2.41.647**  **2.2  RMI RMI feet sq miles mg/L feet feet feet feet feet feet feet fee	TA_cfc/raML_M LT/J.f.TAMULT_a  (Qd) (r(1-FOS/100)	Chlorine 2 perennial 34348 30 138 30 7191.5712 20.19 0.500 1.636 1257.33 1246.29 0.002 0.014 0.0250 24.000 on and rapid nati	Demand				ditions no aqua	atic life
(0.011/EXP(*EXP(-K**C) Stream Stream Stream Stream Stream Samples reach drainage FRC elevation elevation glope for the control of the control stream permitted	#*CFC_tc/1440) PC_tc/1440) PC_tc/1440) PC_tc/1440) PC_tc/1440) PC_tc/1440) PC_tc/1440) PC_tc/1440 P	MIN(EAT_BP. 1.5"((av_men )+(((CFC_Ye^Qe^Qe^Qe^Qe^Qe^Qe^Qe^Qe^Qe^Qe^Qe^Qe^Qe	JMINICLTA_afc.l_ IlimidAML_MU  **0.011)(1.647** '*Txs/1.647**Qd))  = 2  RMI RMI feet feet feet feet foot/foot cfs/sq mi mgd hours or need for aqu d requirement  cfs MGD MGD MGD mg/L ratio	TA_cfc/PAML_M LT/J.R.TAMULT_a  Qd)  ("(1-FOS/100)     perennial     1     dry     unknown     30     0.27     0     1425.6     0.01     0.09     1257.33     0.030     0.026     1300     1257.33     0.030     0.026     24.000     astic life protectic, s should suffice     0.00014     0.00014     0.0050     3.00008     0.02508     0.3     1.0	Chlorine 2 perennial 34348 30 1.36 0.7191.5712 20.19 0.500 1.636 1257.33 1246.29 0.002 0.0014 0.0250 0.0014 0.0050 0.0014 0.0050	Demand				ditions no aque	atic life
(0.011/EXP( (0.011/EXP( *EXP(-K*C Stream Stream Stream Stream Stream Samples reach drainage TRC elevation elevation elevation slope low flow discharge Runoff Dry stream protection is stream stream stream stream stream	ACCFC_tel/1440) CFC_te/1440) CFC_te/1440) CFC_te/1440) CFC_te/1440) Reach/Node Flow Code Function outfall Reach End  limitation  Period discharge witho s required and te flow flow flow flow chlorine discharge Total Stream	MIN(EAT_BP. 1.5*((av_mon) ++(((CFC_Ye^*Cs, (d+(CFC_Ye^*Cs, ed)) Conditions  average maximum modelled modelled modelled ut aquatic life o connology base  total demand demand //waste	JMINICTA_afc.l_IlmidAML_MU  **0.011)/(1.647**  **2.41.647**  **2.2  RMI RMI feet sq miles mg/L feet feet feet feet feet feet feet fee	TA_cfc/raML_M LT/J.f.TAMULT_a  (Qd) (r(1-FOS/100)	Chlorine 2 perennial 34348 30 138 30 7191.5712 20.19 0.500 1.636 1257.33 1246.29 0.002 0.014 0.0250 24.000 on and rapid nati	Demand				ditions no aque	atic life
NST MAX LIM  (0.011/EXP(*EXP(-K**C Stream Stream Stream Stream Stream Samples reach drainage FRC alevation elevation elevation elevation flow flow flow flow flow flow flow flow	#*CFC_tc/1440) PC_tc/1440) PC_tc/1440) PC_tc/1440) PC_tc/1440) PC_tc/1440) PC_tc/1440) PC_tc/1440 P	MIN(EAT_BP. 1.5"((av_men )+(((CFC_Ye^Qe^Qe^Qe^Qe^Qe^Qe^Qe^Qe^Qe^Qe^Qe^Qe^Qe	JMINICLTA_afc.l_ IlimidAML_MU  **0.011)(1.647** '*Txs/1.647**Qd))  = 2  RMI RMI feet feet feet feet foot/foot cfs/sq mi mgd hours or need for aqu d requirement  cfs MGD MGD MGD mg/L ratio	TA_cfc/PAML_M LT/J.R.TAMULT_a  Qd)  ("(1-FOS/100)     perennial     1     dry     unknown     30     0.27     0     1425.6     0.01     0.09     1257.33     0.030     0.026     1300     1257.33     0.030     0.026     24.000     astic life protectic, s should suffice     0.00014     0.00014     0.0050     3.00008     0.02508     0.3     1.0	Chlorine 2 perennial 34348 30 1.36 0.7191.5712 20.19 0.500 1.636 1257.33 1246.29 0.002 0.0014 0.0250 0.0014 0.0050 0.0014 0.0050	Demand				ditions no aque	atic life
0.011/EXP("EXP(-K"C) Stream Stream Stream Stream Samples reach drainage FRC alevation elevation elevation elevation from thow flow flow flow flow flow flow flow flow flow	#*CFC_tc/1440) PC_tc/1440) PC_tc/1440) PC_tc/1440) PC_tc/1440) PC_tc/1440) PC_tc/1440) PC_tc/1440 P	MIN(EAT_BP. 1.5"((av_men )+(((CFC_Ye^Qe^Qe^Qe^Qe^Qe^Qe^Qe^Qe^Qe^Qe^Qe^Qe^Qe	JMINICLTA_afc.l_ IlimidAML_MU  **0.011)(1.647** '*Txs/1.647**Qd))  = 2  RMI RMI feet feet feet feet foot/foot cfs/sq mi mgd hours or need for aqu d requirement  cfs MGD MGD MGD mg/L ratio	TA_cfc/PAML_M LT/J.R.TAMULT_a  Qd)  ("(1-FOS/100)     perennial     1     dry     unknown     30     0.27     0     1425.6     0.01     0.09     1257.33     0.030     0.026     1300     1257.33     0.030     0.026     24.000     astic life protectic, s should suffice     0.00014     0.00014     0.0050     3.00008     0.02508     0.3     1.0	Chlorine 2 perennial 34348 30 1.36 0.7191.5712 20.19 0.500 1.636 1257.33 1246.29 0.002 0.0014 0.0250 0.0014 0.0050 0.0014 0.0050	Demand				ditions no aqua	stic life
NST MAX LIM  (0.011/EXP(*EXP(-K**C Stream Stream Stream Stream Stream Samples reach drainage rRC alevation elevation elevation elevation flow flow flow flow flow flow flow flow	#*CFC_tc/1440) PC_tc/1440) PC_tc/1440) PC_tc/1440) PC_tc/1440) PC_tc/1440) PC_tc/1440) PC_tc/1440 P	MIN(EAT_BP. 1.5"((av_men )+(((CFC_Ye^Qe^Qe^Qe^Qe^Qe^Qe^Qe^Qe^Qe^Qe^Qe^Qe^Qe	JMINICLTA_afc.l_ IlimidAML_MU  **0.011)(1.647** '*Txs/1.647**Qd))  = 2  RMI RMI feet feet feet feet foot/foot cfs/sq mi mgd hours or need for aqu d requirement  cfs MGD MGD MGD mg/L ratio	TA_cfc/PAML_M LT/J.R.TAMULT_a  Qd)  ("(1-FOS/100)     perennial     1     dry     unknown     30     0.27     0     1425.6     0.01     0.09     1257.33     0.030     0.026     1300     1257.33     0.030     0.026     24.000     astic life protectic, s should suffice     0.00014     0.00014     0.0050     3.00008     0.02508     0.3     1.0	Chlorine 2 perennial 34348 30 1.36 0.7191.5712 20.19 0.500 1.636 1257.33 1246.29 0.002 0.0014 0.0250 0.0014 0.0050 0.0014 0.0050	Demand				ditions no aqua	atic life

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

			Effluent L	imitations			Monitoring Red	quirements
Parameter	Mass Units	(lbs/day) (1)		Concentrat	ions (mg/L)		Minimum <sup>(2)</sup>	Required
r al ametei	Average Monthly	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum	Measurement Frequency	Sample Type
Flow (MGD)	Report	XXX	XXX	XXX	XXX	XXX	1/week	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	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	50.0	2/month	Grab
TSS	XXX	XXX	XXX	30.0	XXX	60.0	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
E. Coli	XXX	XXX	XXX	Report	XXX	XXX	1/year	Grab
Total Nitrogen	XXX	XXX	XXX	Report	XXX	XXX	2/month	Grab
Ammonia	XXX	XXX	XXX	Report	XXX	XXX	2/month	Grab
Total Phosphorus	XXX	XXX	XXX	Report	XXX	XXX	2/month	Grab

Compliance Sampling Location: Outfall 001 after disinfection.