Pennsylvania Department of Environmental Protection

Southwest Regional Office
CLEAN WATER PROGRAM

NPDES PERMIT FACT SHEET INDIVIDUAL SEWAGE

Application Type	**Renewal**	Application No.	**PA0205061**
Facility Type	**Non-Municipal**	APS ID	**1130533**
Major / Minor	**Minor**	Authorization ID	**1515283**

Applicant and Facility Information

Applicant Name	**Mark Iv Development LLC**	Facility Name	**Raccoon Elementary School STP**
Applicant Address	3949 Patterson Road	Facility Address	3949 Patterson Road
	Aliquippa, PA 15001-1044		Aliquippa, PA 15001-1044
Applicant Contact	Anthony Policastro	Facility Contact	
Applicant Phone	(412) 974-8840	Facility Phone	
Client ID	320634	Site ID	254794
Ch 94 Load Status	Not Overloaded	Municipality	Raccoon Township
Connection Status	No Limitations	County	Beaver
Date Application Received	February 3, 2025	EPA Waived?	Yes
Date Application Accepted		If No, Reason	
Purpose of Application	Renewal		

Summary of Review

The applicant has applied for a renewal of an existing NPDES Permit, Permit No. PA0205061, which was previously issued by the Department on 06/01/2020. The permit is set to expire on 06/20/2025.

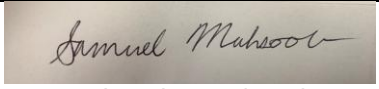
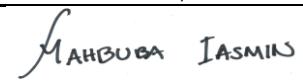
WQM Permit No. 491401, issued on April 23, 1991, approved construction of a STP with a design flow rate of 0.00854 MGD. The existing treatment process consists of an influent tank, clarifier, chlorine tank, and 3 digester tanks.

The receiving stream, UNT to Gums Run, is classified as a WWF, and is located in State Watershed No. 20-D.

Act 14 Notifications were mailed on January 16, 2025.

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	Return	Deny	Signatures	Date
x			 Sam Mahsoob, EIT / Environmental Engineering Trainee	8/29/2025
x			 Mahbuba Iasmin, Ph.D., P.E. / Environmental Engineer Manager	9/15/2025

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	.00854
Latitude	40º 36' 30"	Longitude	-80º 21' 36"
Quad Name	Aliquippa	Quad Code	1403
Wastewater Description:	Sewage Effluent		
Receiving Waters	Unnamed Tributary to Gums Run (WWF)	Stream Code	33576
NHD Com ID	99681980	RMI	.6
Drainage Area	.18	Yield (cfs/mi^2)	.00519
Q_{7-10} Flow (cfs)	.000934	Q_{7-10} Basis	USGS StreamStats
Elevation (ft)	905	Slope (ft/ft)	.0425
Watershed No.	20-D	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Attaining Use(s)		
Cause(s) of Impairment	Aluminum, Iron, Manganese, pH		
Source(s) of Impairment	AMD		
TMDL Status	Final	Name	Raccoon Creek Watershed

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

Nearest Downstream Public Water Supply Intake		**PWS ID:** 5040300 NOVA CHEMICALS BEAVER VLY PLT	
PWS Waters	Ohio	Flow at Intake (cfs)	5880
PWS RMI	11	Distance from Outfall (mi)	7

Other Comments: The discharge is to an UNT to Gums Run, which flows into the Raccoon Creek Watershed that has a Final TMDL and is impaired by metals and pH. Annual monitoring will be implemented for iron, manganese, and aluminum. Additionally, the permittee must submit effluent testing for these metals in the renewal application.

The applicant performed a water test on 8/19/2025. The test results can be seen in Attachments. All results received are below water quality criteria.

Treatment Facility Summary				
Treatment Facility Name: Raccoon Elementary School				
WQM Permit No.	**Issuance Date**			
491401	April 23, 1991			
Waste Type	**Degree of Treatment**	**Process Type**	**Disinfection**	**Avg Annual Flow (MGD)**
Sewage	Secondary	Extended Aeration	Chlorination	0.00854
Hydraulic Capacity (MGD)	**Organic Capacity (lbs/day)**	**Load Status**	**Biosolids Treatment**	**Biosolids Use/Disposal**
0.00854	0.0712	Not Overloaded	Anaerobic Digestion	N/A

Compliance History

Other Comments: **A compliance check was requested from operations.**

Compliance History

DMR Data for Outfall 001 (from March 1, 2024 to February 28, 2025)

Parameter	FEB-25	JAN-25	DEC-24	NOV-24	OCT-24	SEP-24	AUG-24	JUL-24	JUN-24	MAY-24	APR-24	MAR-24
Flow (MGD) Average Monthly	0.001357	0.001111	0.000493	0.000414	0.000560	0.001288	0.000627	0.000458	0.000432	0.000552	0.000735	0.000689
pH (S.U.) Instantaneous Minimum	7.0	7.2	7.0	7.1	7.0	7.0	7.0	7.0	6.9	6.8	6.6	6.8
pH (S.U.) Instantaneous Maximum	7.6	7.6	7.6	7.8	7.6	7.4	7.4	7.4	7.5	7.4	7.5	7.6
DO (mg/L) Instantaneous Minimum	7.5	7.5	7.0	6.9	6.8	6.7	6.7	6.7	6.7	6.5	6.5	7.3
TRC (mg/L) Average Monthly	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.01
TRC (mg/L) Instantaneous Maximum	0.01	0.01	0.01	0.03	0.01	0.01	0.01	0.01	0.01	0.02	0.03	0.01
CBOD5 (mg/L) Average Monthly	7.5	5.25	4.0	2.3	< 3.0	< 3.0	< 0.30	< 3.0	< 4.8	14.4	6.4	6.4
CBOD5 (mg/L) Instantaneous Maximum	8.8	7.6	5.1	2.6	< 3.0	< 3.0	< 0.30	< 3.0	< 4.8	< 24.0	8.1	< 4.8
TSS (mg/L) Average Monthly	18.3	6.0	7.95	6.25	13.2	8.5	12	6	10.0	20.8	13.5	26.3
TSS (mg/L) Instantaneous Maximum	24.0	7.0	11.0	7.5	14.5	11.5	13.5	7.0	12.5	27.3	22	19
Fecal Coliform (No./100 ml) Geometric Mean	58.0	14.7	1.4	1	1	2	57.7	2.4	2.4	12.96	4.2	6.7
Fecal Coliform (No./100 ml) Instantaneous Maximum	66	2400	2	1	1	4	139	6	6	84	9	15
Total Nitrogen (mg/L) Daily Maximum			0.7									
Ammonia (mg/L) Average Monthly	4.3	1.7	0.32	< 0.30	< 0.30	< 0.30	1.6	< 0.30	15.0	1.77	0.40	< 0.30

Ammonia (mg/L) Instantaneous Maximum	4.77	3.14	0.34	< 0.30	< 0.30	< 0.30	2.86	< 0.30	28.9	2.57	0.51	< 0.30
Total Phosphorus (mg/L) Daily Maximum			1.41									

Compliance History

Effluent Violations for Outfall 001, from: April 1, 2024 To: February 28, 2025

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
Ammonia	06/30/24	Avg Mo	15.0	mg/L	1.9	mg/L
Ammonia	02/28/25	Avg Mo	4.3	mg/L	3.0	mg/L
Ammonia	06/30/24	IMAX	28.9	mg/L	3.8	mg/L

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** .00854
Latitude 40º 36' 30.00" **Longitude** -80º 21' 36.00"
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
Flow	Report	Average Monthly	-	§§ 92a.27, 92a.61
Flow	Report	Max Daily	-	§§ 92a.27, 92a.61
$CBOD_5$	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)
Total Nitrogen	Report	Average Monthly	-	92a.61(7)
Total Phosphorus	Report	Average Monthly	-	92a.61(8)
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)
E. Coli (No./100 ml)	-	Report		93a.61(11)(12)
Total Residual Chlorine	0.5	Average Monthly	-	92a.48(b)(2)
Total Residual Chlorine	1.6	IMAX	-	92a.47-48(3)(4)
Ammonia-Nitrogen	25	Average Monthly	-	BPJ (5)
Ammonia-Nitrogen	50	IMAX	-	BPJ (5)
Dissolved Oxygen	4.0	IMIN	-	BPJ (6)

Water Quality-Based Limitations

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

Parameter	Limit (mg/l)	SBC	Model
Total Residual Chlorine	0.019	Average Monthly	TRC_Calc
Total Residual Chlorine	.04	IMAX	TRC_Calc (Last Renewal)
Dissolved Oxygen	6.0	Minimum	WQM 7.0
Ammonia-Nitrogen Nov 1 - Apr 30	3.0	Average Monthly	WQAM 63 (Last Renewal)
Ammonia-Nitrogen May 1 – Oct 31	1.9	Average Monthly	WQAM 63 (Last Renewal)

Comments: The effluent limits for NH3-N and IMAX for Total Residual Chlorine will be carried over from the previous permit, where the limits were modeled in WQAM 63. WQM 7.0 recommended a more stringent DO limit of 6.0 mg/L, and TRC_Calc recommended a more stringent average monthly TRC limit of .019 mg/L. In looking at the DMR reports from the previous year, the permittee should have no problem meeting these more stringent limits.

E. Coli

Sewage discharges will include monitoring, at a minimum, for *E. Coli*, in new and reissued permits, with a monitoring frequency of 1/year for design flows of 0.002 through 0.05 MGD.

(*Note 12 SOP-Establishing Effluent Limitations for Individual Sewage Permits Final November 9, 2012, Revised February 5, 2024, Version 2.0.* and *25 PA Code 92a.61(b).)*

Nutrient Monitoring

Nutrient monitoring is required by the SOP for Effluent Limitations for Individual Sewage Permits. Monitoring is included to establish the nutrient load from the wastewater treatment facility and the impacts that load may have on the quality of the receiving stream(s). The receiving stream is not listed as impaired for nutrients, therefore at the discretion of the application manager, a monitoring frequency less than the equivalent of conventional pollutants in Table 6-3 of the Permit Writer's Manual has been selected.

(*Section I.A, Note 7 & 8, SOP for Clean Water Program, Establishing Effluent Limitations for Individual Sewage Permits, Final November 9, 2012, Revised March 24, 2021, Version 1.9* and *25 PA Code 92a.61(b)*.)

AMD Metals

The discharge is to an UNT to Gums Run, which flows into the Raccoon Creek Watershed that has a Final TMDL and is impaired by metals and pH. Annual monitoring will be implemented for iron, manganese, and aluminum. Additionally, the permittee must submit effluent testing for these metals in the renewal application.

Additional Considerations

Anti-Backsliding

Section 402(o) of the Clean Water Act (CWA), enacted in the Water Quality Act of 1987, establishes anti-backsliding rules governing two situations. The first situation occurs when a permittee seeks to revise a Technology-Based effluent limitation based on BPJ to reflect a subsequently promulgated effluent guideline which is less stringent. The second situation addressed by Section 402(o) arises when a permittee seeks relaxation of an effluent limitation which is based upon a State treatment standard of water quality standard.

Previous limits can be used pursuant to EPA's anti-backsliding regulation. Reissued permits. (1) Except as provided in paragraph (l)(2) of this section when a permit is renewed or reissued. Interim effluent limitations, standards or conditions must be at least as stringent as the final effluent limitations, standards, or conditions in the previous permit (unless the circumstances on which the previous permit was based have materially and substantially changed since the time the permit was issued and would constitute cause for permit modification or revocation and reissuance under §122.62). (2) In the case of effluent limitations established on the basis of Section 402(a)(1)(B) of the CWA, a permit may not be renewed, reissued, or modified on the basis of effluent guidelines promulgated under section 304(b) subsequent to the original issuance of such permit, to contain effluent limitations which are less stringent than the comparable effluent limitations in the previous permit.

(40 CFR 122.44 (l)(2) Establishing limitations, standards, and other permit conditions., 40 CFR Ch. I (7-1-21 Edition))

No permits limits have been made less stringent in the renewal draft permit.

Effluent Multipliers

Section 2.C of the Permit Writers Manual contains the procedure for converting average monthly effluent limitations to average weekly, maximum daily, and instantaneous maximum effluent limitations. The average monthly limit is multiplied according to the following chart:

Discharge Solution	Parameters	Average Weekly	Maximum Daily	Instantaneous Maximum Multiplier
Sewage	All	1.5		2.0
Industrial	All		2.0	2.5*

(Department Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits, Updated June 28, 2023 (Document No. 362-0400-001))

Rounding Off

Section 5 C.2. of the Permit Writers Manual contains general guidelines for rounding conventional and toxic pollutants, with instructions to round down to the nearest decimal place indicated.

General Magnitude	Conventional Pollutants	Toxic Pollutants
<0.01	to nearest 0.001	to nearest 0.001
0.01 - 0.1	to nearest 0.01	to nearest 0.01
0.1 - 1.0	to nearest 0.1	to nearest 0.01
1.0 - 10.0	to nearest 0.5	to nearest 0.01
10.0 - 60.0	to nearest 1.0	to nearest 0.01
60.0 or greater	to nearest 5.0	to nearest 0.10

(Department Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits, Updated June 28, 2023 (Document No. 362-0400-001))

Table 6-3 – Self-Monitoring Requirements for SEWAGE Discharges

Plant Design Flow (MGD)	Flow Monitoring	C-BOD_5 or BOD_5	Suspended Solids	pH	Fecal Coliform	Chlorine Residual	NH_3-N	Phosphorus	DO	Toxics
Single Residence (Individual Permit)	2/year by estimate	2/year*	2/year*	1/month*	2/year*	1/month*	2/year*	2/year*	2/year*	N/A
.0005 to .002	weekly, using average pump rate or weir (a)	1/month*	1/month*	daily*	1/month*	daily*	1/month*	1/month*	daily*	N/A
.002 to .01	**weekly, using average pump rate or weir (a)**	**2/month***	**2/month***	**daily***	**2/month***	**daily***	**2/month***	**2/month***	**daily***	**N/A**
0.01 to 0.1	weekly, using average pump rate or weir (a)	2/month*	2/month*	daily*	2/month*	daily*	2/month*	2/month*	Daily*	1/week*
0.1 to 1.0	meter	1/week**	1/week**	daily*	1/week*	daily*	1/week**	1/week**	daily*	1/week****
1.0 to 5.0	meter	2/week***	2/week***	daily*	2/week*	daily*	2/week***	2/week***	daily*	1/week****
5.0 to 25.0	meter	daily***	daily***	daily*	daily*	1/shift*	daily***	daily***	daily*	1/week****
over 25.0	meter	daily***	daily***	1/shift*	daily*	1/shift*	1/shift***	1/shift***	1/shift*	1/week****

* Grab sample-these should be most representative of the effluent and are to be taken at a time when the normal daily maximum flow would reach the sampling point.

** 8-hour composite sample.

*** 24-hour composite sample.

**** Same sample type as for Industrial Process Wastewater (See Table 6-4).

Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (386-0400-001), SOPs and/or BPJ.

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

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2)	Required
	Average Monthly	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum	Measurement Frequency	Sample Type
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	2/month	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	6.0 Inst Min	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.019	XXX	0.04	1/day	Grab
CBOD5	XXX	XXX	XXX	25	XXX	50	2/month	Grab
TSS	XXX	XXX	XXX	30	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	1000	2/month	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/year	Grab
Total Nitrogen	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	Grab
Ammonia-Nitrogen Nov 1 - Apr 30	XXX	XXX	XXX	3.0	XXX	6.0	2/month	Grab
Ammonia-Nitrogen May 1 - Oct 31	XXX	XXX	XXX	1.9	XXX	3.8	2/month	Grab
Total Phosphorus	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	Grab

Outfall 001, Continued (from 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		
Total Iron	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	Grab
Total Manganese	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	Grab
Total Aluminum	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	Grab

Compliance Sampling Location: 001

Tools and References Used to Develop Permit	
☐	WQM for Windows Model (see Attachments 5&6)
☐	TRC Model Spreadsheet (see Attachment 2)
☐	SOP: Individual Sewage
☐	Other: WQAM 63 (Last Renewal) (see Attachment 1), USGS StreamStats (see Attachments 3&4), Raccoon Watershed TMDL Report

Attachment 1 – WQAM 63

Discharge to Gum Run - WWF

HEADWATER DATA

page

Q_{7-10}	=	.00027
TEMP.	=	25
pH	=	7.0
D.O.	=	85%
$CBOD_5$	=	2
NH_3-N	=	.1
K_c	=	0

Q_d	=	.00854
TEMP.	=	20
pH	=	7
D.O.	=	2
$CBOD_5$	=	25
NH_3-N	=	25
K_c	=	1.5

Q_t	=	0.0
TEMP.	=	
pH	=	
$CBOD_5$	=	
NH_3-N	=	

D.O.	=	5
K_a	=	.6
Slope	=	.0375
Length	=	800'
D.A.	=	.10
W/D ratio	=	10

Reach - Pt of Discharge
to 920' Contour
Δ Elev - 30'
Slope - 30/800 = .0375

Final effluent limits

CBOD-5 - 25
NH_3-N - 1.9
3.0

D.O. - 5 mg/l

Fecal - 2000/100 ml
2000/100 ml } no dilution

NO_2 NO_3 - N/A - Other Rules

RACOON ELEMENTARY SCHOOL DISCHARGE TO GUM RUN
FILE:

DEFAULT DATA

A. STREAM VALUES

1	Q1-10/Q7-10 RATIO	.64
2	Q30-10/Q7-10 RATIO	1.36
3	TEMPERATURE	25 ← WQF
4	PH	7
5	C-BOD5	2 } assumed
6	NH3-N	.1 } assumed
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	25
13	NH3-N	25
14	EFFLUENT D.O.	2
15	EFFLUENT TEMP	20
16	KC	1.5
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)	C-BOD5 (MG/L)	NH3-N (MG/L)
HW	2.7E-02	7	7.13	2		.1
1	0					

RACOON ELEMENTARY SCHOOL DISCHARGE TO GUM RUN
FILE:

STREAM CHARACTERISTICS

RCH	Q7-10 CFS	T (C)	PH	DO MG/L	CBODS MG/L	NH3-N MG/L
1	0	25	7	7.12	2	.1

Q 1-10/Q 7-10 = .64
Q30-10/Q 7-10 = 1.36

DISCHARGER DATA
Q7-10 DESIGN CONDITIONS

RH	Q MGD	T (C)	PH	DO MG/L	CBODS MG/L	NH3-N MG/L	NO
1	3.54E-020	7	3	25	25	1.3	

Permit #

RACOON ELEMENTARY SCHOOL DISCHARGE TO GUM RUN
FILE:

REACH CHARACTERISTICS

RH	D.O. GOAL	KN (/D)	RCH. SL. (FT/FT)	RCH. LEN. (FT.)	DRAIN AREA (MI^2)	W/D
1	5	.6	.0375	800	.1	10

REACH CHARACTERISTICS

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

let program calculate

RACOON ELEMENTARY SCHOOL DISCHARGE TO GUM RUN
FILE: RACOON GUM.WQM6.3

NH3-N DISCHARGE ALLOCATIONS AT Q30-10

DIS	Q (MGD)	IND. CONC. (MG/L)	ALL. CONC. (MG/L)	CRIT. RCH.	PCT. RED. (%)
1	8.54E-03	1.95	1.95	0	0

NH3-N DISCHARGE ALLOCATIONS AT Q1-10

DIS	Q (MGD)	IND. CONC. (MG/L)	ALL. CONC. (MG/L)	CRIT. RCH.	PCT. RED. (%)
1	8.54E-03	9.75	9.75	0	0

RACOON ELEMENTARY SCHOOL DISCHARGE TO GUM RUN
FILE: RACOON GUM.WQM6.3

MULTIPLE DISCHARGE LIMITATIONS
(TOTAL) DISCHARGE = 8.54E-03 MGD
TEMP = 20.1 PH = 7
CBOD-5= 24.54 NH3-N= 1.91 D.O. = 5.04
KC'= 1.497 KN= .6 D.O.GOAL = 5
KR= 30.925 (OWENS)
DIS. 1 RCH. 1 TRVL TIME:.251

TR.TM. (DAYS)	CBOD-5 (MG/L)	NH3-N (MG/L)	D.O. (MG/L)
.025	23.63	1.86	7.12
.05	22.76	1.85	7.12
.075	21.92	1.83	7.12
.1	21.11	1.8	7.12
.125	20.33	1.77	7.12
.15	19.57	1.75	7.12
.175	18.85	1.72	7.12
.2	18.15	1.69	7.12
.225	17.48	1.67	7.12
.251	16.84	1.64	7.12

MULTIPLE DISCHARGE LIMITATIONS
(TOTAL) DISCHARGE = 8.54E-03 MGD
TEMP = 20.1 PH = 7
CBOD-5= 24.54 NH3-N= 1.86 D.O. = 5.04
KC'= 1.497 KN= .6 D.O.GOAL = 5
KR= 20 (USR DEF.)
DIS. 1 RCH. 1 TRVL TIME:.251

Set Kc Value →

TR.TM. (DAYS)	CBOD-5 (MG/L)	NH3-N (MG/L)	D.O. (MG/L)
.025	23.63	1.84	5.49
.05	22.76	1.81	5.8
.075	21.92	1.78	6.03
.1	21.11	1.75	6.2
.125	20.33	1.72	6.33
.15	19.57	1.7	6.43
.175	18.85	1.67	6.52
.2	18.15	1.64	6.58
.225	17.48	1.62	6.64
.251	16.84	1.6	6.69

RACOON ELEMENTARY SCHOOL DISCHARGE TO GUM RUN
FILE: RACOON GUM.WQM6.3

D.O. ALLOCATIONS

DIS #	Q	---NH3-N--- IND. CONC. (MG/L)	CUM. CONC. (MG/L)	----CBOD5----- IND. CONC. (MG/L)	CUM. CONC. (MG/L)	CRIT. RCH.	PCT. REM. (PCT)
	(MGD)						
1	8.54E	1.900	1.900	25.00	25.0000		

Limitations

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 1	5.4E-05	7		10.79	2	.1
1	0					

Intake

RACOON ELEMENTARY SCHOOL DISCHARGE TO GUM RUN
FILE: RACOON WINTER.WQM6.3

NH3-N DISCHARGE ALLOCATIONS AT Q30-10

DIS	Q (MGD)	IND. CONC. (MG/L)	ALL. CONC. (MG/L)	CRIT. RCH.	PCT. RED. (%)
1	8.54E-03	3.05	3.05	0	0

NH3-N DISCHARGE ALLOCATIONS AT Q1-10

DIS	Q (MGD)	IND. CONC. (MG/L)	ALL. CONC. (MG/L)	CRIT. RCH.	PCT. RED. (%)
1	8.54E-03	14.66	14.66	0	0

Attachment 2 – TRC_Calc

Attachment 3 – Upstream StreamStats

Attachment 4 – Downstream StreamStats

Attachment 5 – WQM 7.0 Summer Model

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
20D	33576	Trib 33576 to Gums Run	**0.600**	905.00	0.18	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	0.005	0.00	0.00	0.000	0.000	0.0	0.00	0.00	25.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
Outfall1	PA0205061	0.0085	0.0085	0.0085	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	8.38	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
20D	33576	Trib 33576 to Gums Run	**0.220**	820.00	0.41	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	0.006	0.00	0.00	0.000	0.000	0.0	0.00	0.00	25.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
		0.0000	0.0000	0.0000	0.000	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

Attachment 6 – WQM 7.0 Winter Model

Attachment 7 – AMD Metals Water Test Results

MICROBAC

Microbac Laboratories Inc., Pittsburgh Division

CERTIFICATE OF ANALYSIS

A5H1665

Analytical Testing Parameters

Client Sample ID:	Permit Renewal		
Sample Matrix:	Aqueous	**Collected By:**	Tony Policastro
Lab Sample ID:	A5H1665-01	**Collection Date:**	08/18/2025 10:30

Metals Total by ICP	Result	MDL	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 200.7, Rv. 4.4 (1994)								
Aluminum	**0.116**	0.0208	0.200	mg/L	J	08/19/25 1400	08/20/25 1535	MMW
Iron	**0.613**	0.00744	0.200	mg/L		08/19/25 1400	08/20/25 1535	MMW
Manganese	**0.0502**	0.000168	0.00100	mg/L		08/19/25 1400	08/20/25 1535	MMW

Definitions

J:	Estimated value. The analyte concentration is less than the reporting/quantitation limit.
MDL:	Minimum Detection Limit
mg/L:	Milligrams per Liter
RL:	Reporting Limit

Cooler Receipt Log

Cooler ID: Default Cooler Temp: 24.3°C

Cooler Inspection Checklist

Ice Present or not required?	Yes	Shipping containers sealed or not required?	Yes
Custody seals intact or not required?	Yes	Chain of Custody (COC) Present?	Yes
COC includes customer information?	Yes	Relinquished and received signature on COC?	Yes
Sample collector identified on COC?	Yes	Sample type identified on COC?	Yes
Correct type of Containers Received	Yes	Correct number of containers listed on COC?	Yes
Containers Intact?	Yes	COC includes requested analyses?	Yes
Enough sample volume for indicated tests received?	Yes	Sample labels match COC (Name, Date & Time?)	Yes
Samples arrived within hold time?	Yes	Correct preservatives on COC or not required?	Yes
Chemical preservations checked or not required?	Yes	Preservation checks meet method requirements?	Yes
VOA vials have zero headspace, or not recd.?	Yes	pH<2 (Metals, COD, NH3, P, TKN) or not recd?	Yes
pH>10 (NPW) >12 (DW) Cyanide, or not recd?	Yes		

Project Requested Certification(s)

Microbac Laboratories Inc., Pittsburgh Division
02-00257 Pennsylvania Department of Environmental Protection

Report Comments

Samples were received in proper condition and the reported results conform to applicable accreditation standard unless otherwise noted.

The data and information on this, and other accompanying documents, represents only the sample(s) analyzed. This report is incomplete unless all pages indicated in the footnote are present and an authorized signature is included. ***The services were provided under and subject to Microbac's standard terms and conditions which can be located and reviewed at*** *<https://www.microbac.com/standard-terms-conditions>.*

Reviewed and Approved By:

Mikayla Lovas
Customer Success Coordinator
Reported: 08/25/2025 12:48