

Application Type Renewal
Facility Type Municipal
Major / Minor Minor

**NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE**

Application No. PA0058041
APS ID 1096941
Authorization ID 1455066

Applicant and Facility Information

| | | | |
|---------------------------|--|------------------|---|
| Applicant Name | <u>Aqua PA Wastewater Inc.</u> | Facility Name | <u>Possum Hollow STP</u> |
| Applicant Address | <u>762 W. Lancaster Ave.</u> <u>Bryn Mawr, PA 19101</u> | Facility Address | <u>Longview Road</u> <u>Sanatoga, PA 19464</u> |
| Applicant Contact | <u>Todd Duerr</u> | Facility Contact | <u>Kyle Roberts</u> |
| Applicant Phone | <u>(610) 525-1400</u> | Facility Phone | <u>610-520-6384</u> |
| Client ID | <u>62614</u> | Site ID | <u>556589</u> |
| Ch 94 Load Status | <u>Not Overloaded</u> | Municipality | <u>Limerick Township</u> |
| Connection Status | <u>No Limitations</u> | County | <u>Montgomery</u> |
| Date Application Received | <u>August 24, 2023</u> | EPA Waived? | <u>Yes</u> |
| Date Application Accepted | <u></u> | If No, Reason | <u></u> |
| Purpose of Application | <u>Renewal.</u> | | |

Summary of Review

The applicant has submitted a renewal application to discharge treated sewage to Schuylkill River through Outfall 001.

The facility, Possum Hollow STP, is serving Limerick Township (population: 20,280).

Based on the application: a pretreatment process consisting of a mechanical fine screen, aerated grit chamber, and grit classifier. The plant utilizes an AeroMod activated sludge biological treatment system that includes two-stage aeration, clarification, and aerobic sludge digestion. Inline ultraviolet disinfection and effluent metering.

DEP has conducted on 08/30/2023.

No violations were reported, however there were some notes regarding to red worms: In 2023 Mr. Shakespeare contacted DEP's inspector to state that the Possum Hollow STP was experiencing a proliferation of red sludge worms in their process water. The worms were passing through the UV disinfection units and thought to be the cause of elevated effluent Fecal results. The use of AQUABACxt larvicide was proposed and approved by DEP in January of 2024.

No changes in quality or quantity of the sewage discharge, therefore all effluent limits and monitoring requirements will be proposed as previously established except for E.coli quarterly monitoring that is required to collect statewide data. Proposed parameters listed on 15-16 pps. in this factsheet.

Sludge use and disposal description and location(s): Pottstown Wastewater Treatment Plant.

Act 14 Notification: Limerick Township Board of Supervisors and Montgomery County Planning Commission received on July 28, 2023.

| Approve | Deny | Signatures | Date |
|---------|------|--|-------------|
| X | | <i>Begay Omuralieva</i> Begay Omuralieva / Environmental Engineering Specialist | May 9, 2024 |
| X | | <i>Pravin Patel</i> Pravin C. Patel, P.E. / Environmental Engineer Manager | 05/09/2024 |

Summary of Review

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.

| Discharge, Receiving Waters and Water Supply Information | | | |
|--|--|------------------------------|--|
| Outfall No. | <u>001</u> | Design Flow (MGD) | <u>0.7</u> |
| Latitude | <u>40° 12' 51"</u> | Longitude | <u>-75° 35' 14"</u> |
| Quad Name | <u>Phoenixville</u> | Quad Code | <u>1741</u> |
| Wastewater Description: <u>Sewage Effluent</u> | | | |
| Receiving Waters | <u>Schuylkill River</u> | Stream Code | <u>00833</u> |
| NHD Com ID | <u>25989532</u> | RMI | <u>47.55</u> |
| Drainage Area | <u>1,170 mi²</u> | Yield (cfs/mi ²) | <u>0.262</u> |
| Q ₇₋₁₀ Flow (cfs) | <u>286.65</u> | Q ₇₋₁₀ Basis | <u>306.54 cfs (based on previous permit renewal)</u> |
| Elevation (ft) | <u>103.3</u> | Slope (ft/ft) | <u></u> |
| Watershed No. | <u>3-D</u> | Chapter 93 Class. | <u>WWF, MF</u> |
| Existing Use | <u>WWF, MF</u> | Existing Use Qualifier | <u>N/A</u> |
| Exceptions to Use | <u>None</u> | Exceptions to Criteria | <u>N/A</u> |
| Assessment Status | <u>Attaining Use: Recreational. Not-attaining uses: Fish consumption, Aquatic Life</u> | | |
| Cause(s) of Impairment | <u>PCB,</u> | | |
| Source(s) of Impairment | <u>Urban runoff/Storm sewer, Municipal Point Source, Agricultural, Hydromodification</u> | | |
| TMDL Status | <u>Final (4/7/2007)</u> | Name | <u>Schuylkill River PCB TMDL</u> |
| Nearest Downstream Public Water Supply Intake | <u>PA AMERICAN WATER CO - SHADY LANE WATER TREATMENT PLANT</u> | | |
| PWS Waters | <u>Schuylkill River</u> | Flow at Intake (cfs) | <u></u> |
| PWS RMI | <u>46.49</u> | Distance from Outfall (mi) | <u>1.06</u> |

Changes Since Last Permit Issuance:

| Treatment Facility Summary | | | | |
|---|-----------------------------------|----------------------|----------------------------|-------------------------------|
| Treatment Facility Name: Possum Hollow STP | | | | |
| WQM Permit No. | | Issuance Date | | |
| 4601408 T2 | | 05/15/2019 | | |
| Waste Type | Degree of Treatment | Process Type | Disinfection | Avg Annual Flow (MGD) |
| Sewage | Secondary | Activated Sludge | Ultraviolet | 0.7 |
| Hydraulic Capacity (MGD) | Organic Capacity (lbs/day) | Load Status | Biosolids Treatment | Biosolids Use/Disposal |
| 0.7 | 1600 | Not Overloaded | Aerobic Digestion | Pottstown WWTP |

Changes Since Last Permit Issuance: On September 24, 2018 Aqua PA has submitted a transfer application for the Possum Hollow STP permit from Limerick Township to Aqua Pennsylvania Wastewater, Inc

Compliance History

DMR Data for Outfall 001 (from March 1, 2023 to February 29, 2024)

| Parameter | FEB-24 | JAN-24 | DEC-23 | NOV-23 | OCT-23 | SEP-23 | AUG-23 | JUL-23 | JUN-23 | MAY-23 | APR-23 | MAR-23 |
|--|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Flow (MGD) Average Monthly | 0.219 | 0.3 | 0.27 | 0.175 | 0.177 | 0.203 | 0.192 | 0.205 | 0.174 | 0.169 | 0.188 | 0.196 |
| Flow (MGD) Daily Maximum | 0.270 | 0.627 | 0.461 | 0.303 | 0.260 | 0.400 | 0.263 | 0.396 | 0.194 | 0.261 | 0.523 | 0.289 |
| pH (S.U.) Instantaneous Minimum | 6.8 | 6.7 | 6.4 | 7.1 | 6.9 | 6.7 | 6.7 | 6.2 | 6.4 | 6.4 | 6.8 | 6.8 |
| pH (S.U.) Instantaneous Maximum | 7.4 | 7.8 | 7.7 | 7.5 | 7.5 | 7.4 | 7.5 | 7.7 | 6.9 | 7.1 | 7.2 | 7.1 |
| DO (mg/L) Instantaneous Minimum | 8.3 | 8.3 | 8 | 6.3 | 6.4 | 6.0 | 6.2 | 5.9 | 6.0 | 6.9 | 7.4 | 8.3 |
| CBOD5 (lbs/day) Average Monthly | 12 | 18 | 18 | 11 | 6 | 7 | 9 | 10 | 14 | 6 | 5 | 6 |
| CBOD5 (lbs/day) Raw Sewage Influent Average Monthly | 231 | 313 | 272 | 275 | 227 | 121 | 266 | 211 | 302 | 329 | 195 | 217 |
| CBOD5 (lbs/day) Weekly Average | 15 | 32 | 28 | 13 | 8 | 7 | 19 | 17 | 16 | 8 | 6 | 9 |
| CBOD5 (mg/L) Average Monthly | 6.9 | 8 | 9 | 8.0 | 4 | 5 | 5 | 6 | 9 | 5.0 | 4.0 | 4.0 |
| CBOD5 (mg/L) Raw Sewage Influent Average Monthly | 126 | 126.9 | 114.7 | 190 | 160.4 | 92.6 | 146.4 | 132.3 | 214 | 262 | 152 | 147 |
| CBOD5 (mg/L) Weekly Average | 7.1 | 14 | 16 | 12 | 6 | 7 | 9 | 7.0 | 11 | 7.0 | 5.0 | 6.0 |
| BOD5 (lbs/day) Raw Sewage Influent Average Monthly | 338 | 446 | 382 | 312 | 265 | 140 | 246 | 354 | 411 | 482 | 240 | 372 |

**NPDES Permit Fact Sheet
Possum Hollow Sewer System & STP**

NPDES Permit No. PA0058041

| | | | | | | | | | | | | |
|--|--------|--------|-------|--------|--------|--------|--------|--------|--------|--------|--------|-------|
| BOD5 (mg/L) Raw Sewage Influent Average Monthly | 184 | 186 | 147.4 | 212 | 187 | 108 | 145 | 227.4 | 298 | 396 | 190 | 247 |
| TSS (lbs/day) Average Monthly | 21 | 25 | 38 | 16 | 15 | 15 | 13 | 18 | 25 | 17 | 12 | 14 |
| TSS (lbs/day) Raw Sewage Influent Average Monthly | 115 | 295 | 399 | 201 | 219 | 133 | 502 | 516 | 282 | 329 | 228 | 206 |
| TSS (lbs/day) Weekly Average | 25 | 43 | 90 | 25 | 21 | 18 | 26 | 25 | 30 | 21 | 16 | 23 |
| TSS (mg/L) Average Monthly | 12 | 11 | 16 | 12 | 11 | 12 | 8 | 11 | 17 | 14 | 10.0 | 9.0 |
| TSS (mg/L) Raw Sewage Influent Average Monthly | 64 | 121 | 156 | 136 | 147 | 108 | 264 | 337 | 199 | 717 | 171 | 146 |
| TSS (mg/L) Weekly Average | 16 | 19 | 24 | 23 | 14 | 18 | 12 | 15 | 19 | 18 | 13.0 | 14.0 |
| Total Dissolved Solids (mg/L) Average Quarterly | | | 486 | | | 501.0 | | | 468.0 | | | 420.0 |
| Fecal Coliform (No./100 ml) Geometric Mean | 9 | 30 | 31 | 23 | 87 | 152 | 183 | 163 | 150 | 57 | 5 | 4 |
| Fecal Coliform (No./100 ml) Instantaneous Maximum | 25 | 248 | 102 | 64 | 120 | 517 | 866 | 921 | 285 | 73 | 12 | 24 |
| UV Intensity ($\mu\text{w}/\text{cm}^2$) Daily Minimum | 218000 | 108000 | 1200 | 453000 | 337000 | 770000 | 132000 | 111000 | 438300 | 102000 | 185000 | 193 |
| Ammonia (lbs/day) Average Monthly | 7 | 12 | 4 | < 4.0 | < 1 | < 1.0 | 5 | 7.0 | 1 | 0.9 | 1 | 0.7 |
| Ammonia (mg/L) Average Monthly | 3.9 | 5.1 | 1.4 | < 2.5 | < 0.6 | < 0.8 | 3.0 | 4.4 | 1.0 | 0.7 | 1.1 | < 0.5 |
| Total Phosphorus (lbs/day) Average Monthly | 8 | 7 | 9 | 8.0 | 8.0 | 8.0 | 9 | 10 | 11 | 10 | 8 | 8 |
| Total Phosphorus (mg/L) Average Monthly | 4.7 | 3.1 | 4.1 | 5.6 | 5.2 | 6 | 5.8 | 5.9 | 7.9 | 8.5 | 6.5 | 5.3 |

**NPDES Permit Fact Sheet
Possum Hollow Sewer System & STP**

NPDES Permit No. PA0058041

| | | | | | | | | | | | | |
|--|-----|-----|--------|-----|-----|--------|-----|-----|-------|------|-----|-------|
| Total Phosphorus (mg/L) Instantaneous Maximum | 5.3 | 4.8 | 4.4 | 7.8 | 6.0 | 7.4 | 7.2 | 6.5 | 10 | 11.0 | 7.8 | 6.3 |
| Total Copper (mg/L) Average Quarterly | | | < 0.01 | | | < 0.03 | | | 0.014 | | | 0.011 |
| Total Zinc (mg/L) Average Quarterly | | | 0.075 | | | 0.06 | | | 0.121 | | | 0.10 |
| PCBs (Dry Weather) (pg/L) Daily Maximum | | | 1940 | | | | | | | | | |
| PCBs (Wet Weather) (pg/L) Daily Maximum | | | 24600 | | | | | | | | | |

Compliance History

Development of Effluent Limitations

Outfall No. 001 Design Flow (MGD) 0.7
 Latitude 40° 12' 51.00" Longitude -75° 35' 14.00"
 Wastewater Description: Sewage Effluent from Possum Hollow STP

Technology-Based Limitations

The following technology-based limitations apply, subject to water quality analysis and BPJ where applicable:

| Pollutant | Limit (mg/l) | SBC | Federal Regulation | State Regulation |
|------------------------------|-----------------|-----------------|--------------------|------------------|
| CBOD ₅ | 25 | Average Monthly | 133.102(a)(4)(i) | 92a.47(a)(1) |
| | 40 | Average Weekly | 133.102(a)(4)(ii) | 92a.47(a)(2) |
| Total Suspended Solids | 30 | Average Monthly | 133.102(b)(1) | 92a.47(a)(1) |
| | 45 | Average Weekly | 133.102(b)(2) | 92a.47(a)(2) |
| pH | 6.0 – 9.0 S.U. | Min – Max | 133.102(c) | 95.2(1) |
| Fecal Coliform (5/1 – 9/30) | 200 / 100 ml | Geo Mean | - | 92a.47(a)(4) |
| Fecal Coliform (5/1 – 9/30) | 1,000 / 100 ml | IMAX | - | 92a.47(a)(4) |
| Fecal Coliform (10/1 – 4/30) | 2,000 / 100 ml | Geo Mean | - | 92a.47(a)(5) |
| Fecal Coliform (10/1 – 4/30) | 10,000 / 100 ml | IMAX | - | 92a.47(a)(5) |
| Total Residual Chlorine | 0.5 | Average Monthly | - | 92a.48(b)(2) |

Comments: none

Water Quality-Based Limitations

Previously approved below effluent limits and monitoring requirements are carried over since no changes to the quality and quantity of the discharge:

Ammonia (NH₃-N), Carbonaceous Biochemical Oxygen Demand (CBOD₅), & Dissolved Oxygen (DO):

WQM 7.0 version 1.0b is a water quality model designed to assist DEP to determine appropriate effluent limits for CBOD₅, NH₃-N and DO. The model simulates two basic processes. In the NH₃-N module, the model simulates the mixing and degradation of NH₃-N in the stream and compares calculated instream NH₃-N concentrations to NH₃-N water quality criteria. In the D.O. module, the model simulates the mixing and consumption of D.O. in the stream due to the degradation of CBOD₅ and NH₃-N and compares calculated instream D.O. concentrations to D.O. water quality criteria. Since WQM 7.0 assumes immediate and complete mix between the discharge and stream flow, Q7-10 was adjusted, as shown on page 3, to examine allowable wasteload allocations under appropriate mixing conditions. The model was utilized for this permit renewal by using adjusted Q7-10 and current background water quality levels of the river.

NH₃-N:

WQM 7.0 suggested NH₃-N limit of 8 mg/l as monthly average and 16 mg/l as instantaneous maximum limit to protect water quality standards. Recent DMR data show that the plant is discharging NH₃-N at <0.48 mg/l year-round which is below the permitted limit. The mass loading is calculated to be 47 lbs./day as average monthly, which is the same as in the existing permit. No change in the existing limit is proposed for this renewal.

CBOD₅:

The attached WQM 7.0 modeling results show that secondary treatment is adequate to protect the water quality of the stream. Recent DMRs and inspection reports show that the facility has been consistently achieving concentrations below this existing limit. The WQM 7.0 model suggests a monthly average CBOD₅ limit may be 20 mg/l. The average monthly and average weekly mass

loadings were calculated as 117 lbs./day and 175 lbs./day respectively. These values are the same as were in the existing permit. No change is proposed in this renewal.

Dissolved Oxygen (DO):

A minimum of 5.0 mg/L for D.O. is an existing effluent limit and will remain unchanged in the draft permit. This requirement has also been assigned to other sewage facilities in the region. 5.0 mg/L is taken directly from 25 Pa. Code § 93.7(a) (i.e., water quality criteria for WWF waters) and it is also determined to be appropriate per water quality modeling.

Additional Considerations

pH:

The effluent discharge pH should remain above 6 and below 9 standard units per 25 Pa. Code § 95.2(1) which is consistent with previous permit renewal.

UV Disinfection:

DEP's SOP (1) and 10 States Standard recommends monitoring of UV transmittance (%), UV dosage ($\mu\text{W}/\text{cm}^2$ or $\text{mjoules}/\text{cm}^2$), or UV intensity ($\mu\text{W}/\text{cm}^2$ or $\text{mjoules}/\text{cm}^2$) at the same monitoring frequency that would be used for TRC. The existing permit has daily minimum UV Intensity monitoring requirement which will be carried over in this renewal.

Fecal Coliform:

The recent coliform guidance in 25 Pa. code § 92a.47.(a)(4) requires a summer technology limit of 200/100 ml as a geometric mean and an instantaneous maximum not greater than 1,000/100ml and § 92a.47.(a)(5) requires a winter limit of 2,000/100ml as a geometric mean and an instantaneous maximum not greater than 10,000/100ml. Per the Administrative Manual – Part III Water Quality Regulations (amended) by Delaware River Basin Commission (DRBC), to comply with effective disinfection, the number of organisms of the fecal coliform group remaining after treatment does not exceed 200 per 100 milliliters as a geometric average and 1,000 per 100 milliliters in more than 10 percent of the samples taken over a period of thirty consecutive days. This limit (year-round) is more stringent compared to Chapter 92a requirements. The existing permit has final fecal coliform limit for summer as 200 geo-mean (1,000 as IMAX) and winter limit as 200 geo mean (1,000 as IMAX with 10% rule.) The minimum measurement frequency is 1/week. The existing limits and monitoring frequencies will be carried over in this renewal. It is noteworthy that the unit for fecal coliform is changed from "CFU/100 ml" to "No/100 ml" to reflect current central office guidance (see email in appendix). Since the permittee is using eDMR and eDMR may not be updated yet to report the new unit, the permittee may report as CFU/100 ml with a note that they are using the Colilert test and the results are in MPU/100 ml.

Monitoring Frequency and Sample Types:

Otherwise specified above, the monitoring frequency and sample type of compliance monitoring for existing parameters are recommended by DEP's SOP and Permit Writers Manual and/or on a case-by-case basis using BPJ.

(1) Establishing Effluent Limitations for Individual Sewage Permits; BPNPSM-PMT-033, Version 1.5, revised August 23, 2013
Flow and Influent Monitoring Requirement:

The requirement to monitor the volume of effluent will remain in the draft permit per 40 CFR § 122.44(i)(1)(ii). The existing influent monitoring reporting requirement for TSS, CBOD5, and BOD5 will be maintained in the draft permit per Chapter 94 requirement and to check compliance with the secondary treatment.

Total Dissolved Solids (TDS):

TDS and its associated solids including Bromide, Chloride, and Sulfate have become statewide pollutants of concern. The requirement to monitor these pollutants must be considered under the criteria specified in 25 Pa. Code § 95.10. The application data indicated the maximum concentration (out of 3 samples) is 594 mg/l which exceeded the 50% of the DRBC effluent standard of 1,000 mg/l. The existing permit has TDS limit of 1,000 mg/l as average monthly and 2,500 mg/l as instantaneous maximum. It is recommended that existing limits will be carried over as 1,000 mg/l average quarterly limit and 2,500 mg/l as Instantaneous Maximum limit.

Total Phosphorus:

The existing permit has a monitoring only requirement for Total Phosphorus which is recommended to be carried over to characterize the effluent. The application data indicated an average monthly concentration of 5.83 mg/l and maximum value of 9.33 mg/l, out of 101 samples.

PCBs:

Wet and Dry weather PCBs annual monitoring will be carried over in this renewal per Schuylkill River TMDL. Schuylkill River Total Maximum Daily Load (TMDL):

The Schuylkill River Polychlorinated Biphenyls (PCBs) for zones 2-5 of the tidal Delaware River Phase 1 was finalized on December 15, 2003 and Phase 2 was finalized on April 7, 2007. This facility was not identified in the TMDL. Sources were identified during 2003 and, since the facility did not begin discharging until June 2003, it was not in the databases reviewed during the development. However, since it is a direct discharger to the Schuylkill River, the previous permits included a sampling condition in Part C, annual sampling was included in Part A (both wet and dry weather), and development of a Pollution Minimization Plan (PMP). The annual monitoring requirement will be carried over in this renewal.

WETT:

Minor facilities and facilities without a formal EPA approved pretreatment program are exempted from WETT.

Toxics:

Submitted data was evaluated and Toxic Management Spreadsheet (TMS) has been completed for previously identified and monitored Total Copper and Total Zinc (shown below on pps.11-14 of this factsheet).

Based on the TMS monitoring for both parameters of concern will remain in proposed draft permit.

Additional quarterly monitoring for E.coli is added based on recent DEP's guidance to collect data.



Discharge Information

Instructions Discharge Stream

Facility: Possum Hollow STP NPDES Permit No.: PA0058041 Outfall No.: 001
 Evaluation Type: Custom / Additives Wastewater Description: treated sewage

| Discharge Characteristics | | | | | | | | |
|---------------------------|------------------|----------|----------------------------|-----|-----|-----|--------------------------|----------------|
| Design Flow (MGD)* | Hardness (mg/l)* | pH (SU)* | Partial Mix Factors (PMFs) | | | | Complete Mix Times (min) | |
| | | | AFC | CFC | THH | CRL | Q ₇₋₁₀ | Q _n |
| 0.7 | 140 | 7 | | | | | | |

| Discharge Pollutant | Units | Max Discharge Conc | 0 if left blank | | 0.5 if left blank | | 0 if left blank | | | 1 if left blank | |
|---------------------|-------|--------------------|-----------------|-------------|-------------------|-----------|-----------------|------------|-----|-----------------|-------------|
| | | | Trib Conc | Stream Conc | Daily CV | Hourly CV | Stream CV | Fate Coeff | FOS | Criteria Mod | Chem Transl |
| Total Copper | mg/L | 0.014 | | | | | | | | | |
| Total Zinc | mg/L | 0.121 | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
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| | | | | | | | | | | | |
| | | | | | | | | | | | |



Stream / Surface Water Information

Possum Hollow STP, NPDES Permit No. PA0058041, Outfall 001

Instructions Discharge **Stream**

Receiving Surface Water Name: _____ No. Reaches to Model: 1

- Statewide Criteria
- Great Lakes Criteria
- ORSANCO Criteria

| Location | Stream Code* | RMI* | Elevation (ft)* | DA (mi ²)* | Slope (ft/ft) | PWS Withdrawal (MGD) | Apply Fish Criteria* |
|--------------------|--------------|-------|-----------------|------------------------|---------------|----------------------|----------------------|
| Point of Discharge | 000833 | 47.55 | 103.3 | 1170 | | | Yes |
| End of Reach 1 | 000833 | 47.04 | 100 | 1190 | | | Yes |

Q₇₋₁₀

| Location | RMI | LFY (cfs/mi ²)* | Flow (cfs) | | W/D Ratio | Width (ft) | Depth (ft) | Velocity (fps) | Travel Time | Tributary | | Stream | | Analysis | |
|--------------------|-------|-----------------------------|------------|-----------|-----------|------------|------------|----------------|-------------|-----------|----|-----------|-----|----------|----|
| | | | Stream | Tributary | | | | | | Hardness | pH | Hardness* | pH* | Hardness | pH |
| Point of Discharge | 47.55 | 0.1 | | | | | | | | | | 100 | 7 | | |
| End of Reach 1 | 47.04 | 0.1 | | | | | | | | | | | | | |

Q_n

| Location | RMI | LFY (cfs/mi ²)* | Flow (cfs) | | W/D Ratio | Width (ft) | Depth (ft) | Velocity (fps) | Travel Time | Tributary | | Stream | | Analysis | |
|--------------------|-------|-----------------------------|------------|-----------|-----------|------------|------------|----------------|-------------|-----------|----|----------|----|----------|----|
| | | | Stream | Tributary | | | | | | Hardness | pH | Hardness | pH | Hardness | pH |
| Point of Discharge | 47.55 | | | | | | | | | | | | | | |
| End of Reach 1 | 47.04 | | | | | | | | | | | | | | |



Model Results

Possum Hollow STP, NPDES Permit No. PA0058041, Outfall 001

All
 Inputs
 Results
 Limits

- Hydrodynamics
- Wasteload Allocations

AFC
 CCT (min):
 PMF:
 Analysis Hardness (mg/l):
 Analysis pH:

| Pollutants | Stream Conc | Stream CV | Trib Conc (µg/L) | Fate Coef | WQC (µg/L) | WQ Obj (µg/L) | WLA (µg/L) | Comments |
|--------------|-------------|-----------|------------------|-----------|------------|---------------|------------|----------------------------------|
| Total Copper | 0 | 0 | | 0 | 13.814 | 14.4 | 194 | Chem Translator of 0.96 applied |
| Total Zinc | 0 | 0 | | 0 | 120.119 | 123 | 1,656 | Chem Translator of 0.978 applied |

CFC
 CCT (min):
 PMF:
 Analysis Hardness (mg/l):
 Analysis pH:

| Pollutants | Stream Conc | Stream CV | Trib Conc (µg/L) | Fate Coef | WQC (µg/L) | WQ Obj (µg/L) | WLA (µg/L) | Comments |
|--------------|-------------|-----------|------------------|-----------|------------|---------------|------------|----------------------------------|
| Total Copper | 0 | 0 | | 0 | 8.991 | 9.37 | 819 | Chem Translator of 0.96 applied |
| Total Zinc | 0 | 0 | | 0 | 118.596 | 120 | 10,525 | Chem Translator of 0.986 applied |

THH
 CCT (min):
 PMF:
 Analysis Hardness (mg/l):
 Analysis pH:

| Pollutants | Stream Conc | Stream CV | Trib Conc (µg/L) | Fate Coef | WQC (µg/L) | WQ Obj (µg/L) | WLA (µg/L) | Comments |
|--------------|-------------|-----------|------------------|-----------|------------|---------------|------------|----------|
| Total Copper | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Total Zinc | 0 | 0 | | 0 | N/A | N/A | N/A | |

CRL
 CCT (min):
 PMF:
 Analysis Hardness (mg/l):
 Analysis pH:

| Pollutants | Stream Conc | Stream CV | Trib Conc (µg/L) | Fate Coef | WQC (µg/L) | WQ Obj (µg/L) | WLA (µg/L) | Comments |
|--------------|-------------|-----------|------------------|-----------|------------|---------------|------------|----------|
| Total Copper | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Total Zinc | 0 | 0 | | 0 | N/A | N/A | N/A | |

- Recommended WQBELs & Monitoring Requirements

No. Samples/Month:

| Pollutants | Mass Limits | | Concentration Limits | | | | Governing WQBEL | WQBEL Basis | Comments |
|--------------|---------------|---------------|----------------------|--------|--------|-------|-----------------|-------------|------------------------------------|
| | AML (lbs/day) | MDL (lbs/day) | AML | MDL | IMAX | Units | | | |
| Total Copper | Report | Report | Report | Report | Report | mg/L | 0.12 | AFC | Discharge Conc > 10% WQBEL (no RP) |
| Total Zinc | Report | Report | Report | Report | Report | mg/L | 1.06 | AFC | Discharge Conc > 10% WQBEL (no RP) |

Other Pollutants without Limits or Monitoring

The following pollutants do not require effluent limits or monitoring based on water quality because reasonable potential to exceed water quality criteria was not determined and the discharge concentration was less than thresholds for monitoring, or the pollutant was not detected and a sufficiently sensitive analytical method was used (e.g., <= Target QL).

| Pollutants | Governing WQBEL | Units | Comments |
|------------|-----------------|-------|----------|
| | | | |
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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⁾ Measurement Frequency | Required Sample Type |
| | Average Monthly | Weekly Average | Daily Minimum | Average Monthly | Weekly Average | Instant. Maximum | | |
| Flow (MGD) | Report | Report Daily Max | XXX | XXX | XXX | XXX | Continuous | Metered |
| pH (S.U.) | XXX | XXX | 6.0 Inst Min | XXX | XXX | 9.0 | 1/day | Grab |
| DO | XXX | XXX | 5.0 Inst Min | XXX | XXX | XXX | 1/day | Grab |
| CBOD5 Raw Sewage Influent | Report | XXX | XXX | Report | XXX | XXX | 1/week | 24-Hr Composite |
| CBOD5 | 117 | 175 | XXX | 20 | 30 | 40 | 1/week | 24-Hr Composite |
| BOD5 Raw Sewage Influent | Report | XXX | XXX | Report | XXX | XXX | 1/week | 24-Hr Composite |
| TSS Raw Sewage Influent | Report | XXX | XXX | Report | XXX | XXX | 1/week | 24-Hr Composite |
| TSS | 175 | 263 | XXX | 30 | 45 | 60 | 1/week | 24-Hr Composite |
| Total Dissolved Solids | XXX | XXX | XXX | 1000.0 Avg Qrtly | XXX | 2500 | 1/quarter | 24-Hr Composite |
| Fecal Coliform (No./100 ml) | XXX | XXX | XXX | 200 Geo Mean | XXX | 1000 | 1/week | Grab |
| E.Coli | XXX | XXX | XXX | XXX | XXX | | | |
| UV Intensity (µw/cm ²) | XXX | XXX | Report | XXX | XXX | XXX | 1/day | Recorded |
| Ammonia | 47 | XXX | XXX | 8.0 | XXX | 16 | 1/week | 24-Hr Composite |

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 | Weekly Average | Daily Minimum | Average Monthly | Weekly Average | Instant. Maximum | | |
| Total Phosphorus | Report | XXX | XXX | Report | XXX | Report | 1/week | 24-Hr Composite |
| Total Copper | XXX | XXX | XXX | Report Avg Qrtly | XXX | XXX | 1/quarter | 24-Hr Composite |
| Total Zinc | XXX | XXX | XXX | Report Avg Qrtly | XXX | XXX | 1/quarter | 24-Hr Composite |

Compliance Sampling Location: Outfall 001

| Approve | Deny | Signatures | Date |
|---------|------|--|-------------|
| X | | <i>Begay Omuralieva</i> Begay Omuralieva / Environmental Engineering Specialist | May 9, 2024 |
| X | | <i>Pravin Patel</i> Pravin C. Patel, P.E. / Environmental Engineer Manager | 05/09/2024 |