pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

**Northwest Regional Office**
**CLEAN WATER PROGRAM**

| | | | |
|---|---|---|---|
| Application Type | **Renewal** | Application No. | **PA0022373** |
| Facility Type | **Municipal** | APS ID | **1033713** |
| Major / Minor | **Minor** | Authorization ID | **1345584** |

# NPDES PERMIT FACT SHEET
# INDIVIDUAL SEWAGE

## Applicant and Facility Information

| | | | |
|---|---|---|---|
| Applicant Name | **Lakeview Joint Sewer Authority** | Facility Name | **Lakeview Joint Sewer Authority WWTP** |
| Applicant Address | PO Box 87 3271 S Main Street | Facility Address | 5394 Franklin Road |
| | Sandy Lake, PA 16145-0087 | | Sandy Lake, PA 16145 |
| Applicant Contact | John Sweet | Facility Contact | Glenn Moeller |
| Applicant Phone | (724) 376-2676 | Facility Phone | (724) 301-4438 |
| Applicant E Mail | slborough@gmail.com | Facility E Mail | moellergm@hotmail.com |
| Client ID | 75017 | Site ID | 261239 |
| Municipality | Sandy Lake Borough | County | Mercer |
| Ch 94 Load Status | Not Overloaded | Connection Status | No Limitations |
| Received | February 19, 2021 | EPA Waived? | Yes |
| Accepted | May 6, 2021 | If No, Reason | |

Purpose of Application: NPDES discharge permit renewal

## Summary of Review

No violations listed with compliance as of 2020.

Sludge use and disposal description and location(s): 20.9-dry tons produced and disposal at the Seneca Landfill.

Public Participation

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

| Approve | Deny | Signatures | Date |
|---|---|---|---|
| X | | William H. Mentzer<br>William H. Mentzer, P.E.<br>Environmental Engineering Specialist | May 6, 2021 |
| X | | Justin C. Dickey<br>Justin C. Dickey, P.E.<br>Environmental Engineer Manager | May 17, 2021 |

**Discharge, Receiving Waters and Water Supply Information**

| | | | |
|---|---|---|---|
| Outfall No. | 001 | Design Flow (MGD) | 0.45 |
| Latitude DP | 41º 21' 4.49" | Longitude DP | -80º 4' 30.42" |
| Latitude NHD | 41º 21' 3.18" | Longitude NHD | -80º 4' 30.21" |
| Quad Name | Sandy Lake | Quad Code | 0805 |
| Wastewater: | Treated municipal sanitary sewage | | |

| | | | |
|---|---|---|---|
| Receiving Waters | Sandy Creek | Stream Code | 51322 |
| NHD Com ID | 100478413 | RMI | 18.2900 |
| Drainage Area | 4.78 | Yield (cfs/mi$^2$) | 0.0734 |
| $Q_{7-10}$ Flow (cfs) | 64.06 | $Q_{7-10}$ Basis | East Sandy Creek |
| Elevation (ft) | 1145.72 | Slope (ft/ft) | 0.000578 |
| Watershed No. | 16-G | Chapter 93 Class. | WWF |
| Existing Use | **statewide** | Existing Use Qualifier | none |
| Exceptions to Use | none | Exceptions to Criteria | none |
| Comments | Discharge is at Node RMI 0.69 | | |

| | | | |
|---|---|---|---|
| Assessment Status | Impaired | | |
| Cause(s) of Impairment | CAUSE UNKNOWN | | |
| Source(s) of Impairment | SOURCE UNKNOWN | | |
| TMDL Status | | Name | |

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

| | | | |
|---|---|---|---|
| Nearest Downstream Public Water Supply Intake | Aqua Pa Emlenton | | |
| PWS Waters | Allegheny River | Flow at Intake (cfs) | 469.02 |
| PWS RMI | 90.57 | Distance from Outfall (mi) | 41.91 |

Changes Since Last Permit Issuance: none

Other Comments: none

| | | |
|---|---|---|
| Stoneboro Borough | 54.7 % | 1663 people |
| Sandy Lake Borough | 43.0 % | 1330 people |
| Sandy Lake Township | 3.3% | 102 people |

**Treatment Facility Summary**

**Treatment Facility Name:** Lakeview Joint Sewer Authority WWTP

| WQM Permit | Revision | Issuance | Permittee | Facilities |
|---|---|---|---|---|
| 363-S-009 | | 7/24/1963 | Sandy Lake Borough | High Rate Trickling Filter with grit removal and disinfection |
| 363-S-009 | T1 | 6/2/1964 | Lakeview Joint Sewer Authority | High Rate Trickling Filter with grit removal and disinfection |
| 363-S-006 | | 4/26/1963 | Lakeview Joint Sewer Authority | Sewers with extended aeration treatment |
| 4395413 | | 1/25/1996 | Lakeview Joint Sewer Authority | Sequencing Batch Reactor |
| 4395413 | A1 | 1/22/1997 | Lakeview Joint Sewer Authority | Effluent equalization, belt filter press, and UV disinfection |
| 363-S-009 and 363-S-009 provide grit chamber permitting history. The last amendment could also delete sludge drying. | | | | |

| Waste Type | Degree of Treatment | Process Type | Disinfection | Average Annual Flow (MGD) |
|---|---|---|---|---|
| Sewage | Secondary With Ammonia Reduction | Sequencing Batch Reactor | Ultraviolet | 0.4500 |

| Hydraulic Capacity (MGD) | Organic Capacity (lbs/day) | Load Status | Biosolids Treatment | Biosolids Use/Disposal |
|---|---|---|---|---|
| 0.4500 | 938.00 | Not Overloaded | Pressure Filtration | Landfill |

Changes Since Last Permit Issuance: NONE

Other Comments: 66 commercial facilities listed with no known federal POTW discharge restrictions.

| | Ave PPD | Max PPD | Min mg/L | Mean mg/L | Max mg/L | # | mgd | Min | Mean | Max | Min | Mean | Max | # |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Hydraulic Design** | | | | | | | **0.45** | | | | | | | |
| **Annual Average** | | | | | | **2020** | **0.277** | | | | | | | |
| | | | | | | **2019** | **0.320** | | | | | | | |
| | | | | | | **2018** | **0.302** | | | | | | | |
| **Highest Monthly Average** | | | | | **Mar** | **2020** | **0.390** | | | | | | | |
| **Organic Design** | | **938** | | | | | | | | | | | | |
| **pH** | | | | | | | | | | | **7.0** | | **7.5** | **832** |
| **BOD5** | **26.0** | **96.4** | **8.5** | | **50.4** | **104** | | | | | | | | |
| **Cbod5** | | | | | | | | | | | **3.0** | **3.04** | **4.0** | **104** |
| **TSS** | **12.8** | **103.5** | **7.3** | | **62.8** | **104** | | | | | **3.0** | **3.82** | **7.8** | **104** |
| **N** | | **39.92** | | | **18.21** | **1** | | | | | **2.2** | **5.74** | **7.6** | **104** |
| **P** | | **2.71** | | | **1.24** | **1** | | | | | **0.4** | **1.19** | **2.4** | **104** |
| **NH3N** | | **26.1** | | | **11.9** | **1** | | | | | **0.3** | **0.44** | **0.8** | **104** |
| **TDS** | | **434.3** | | | **198** | **1** | | | | | | | **256** | **1** |
| **Temp** | | | | | | | | | | | | | **50** | **1** |
| **NO2NO3** | | | | | **0.77** | **1** | | | | | | | **6.47** | **104** |
| **TKN** | | | | | | | | | | | | | **1.12** | **1** |
| **TDS** | | | | | | | | | | | | | **256** | **1** |
| **Chloride** | | | | | | | | | | | | | **67.2** | **1** |
| **Br** | | | | | | | | | | | | | **< 0.1** | **1** |
| **Sulfate** | | | | | | | | | | | | | **32.0** | **1** |
| **O&G** | | | | | | | | | | | | | **< 5.0** | **1** |
| **Copper** | | | | | | | | | | | | | **< 0.02** | **1** |
| **Lead** | | | | | | | | | | | | | **< 0.02** | **1** |
| **Zinc** | | | | | | | | | | | | | **0.02** | **1** |

## Compliance History

**DMR Data for Outfall 001 (from April 1, 2020 to March 31, 2021)**

| Parameter | MAR-21 | FEB-21 | JAN-21 | DEC-20 | NOV-20 | OCT-20 | SEP-20 | AUG-20 | JUL-20 | JUN-20 | MAY-20 | APR-20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flow (MGD) Ave Mon | 0.236 | 0.233 | 0.287 | 0.299 | 0.251 | 0.184 | 0.194 | 0.199 | 0.203 | 0.210 | 0.302 | 0.362 |
| Flow (MGD) Wkly Ave | 0.227 | 0.244 | 0.310 | 0.290 | 0.257 | 0.181 | 0.193 | 0.206 | 0.209 | 0.189 | 0.326 | 0.356 |
| pH (S.U.) Minimum | 7.1 | 7.2 | 7.0 | 7.0 | 7.1 | 7.2 | 7.0 | 7.1 | 7.2 | 7.2 | 7.1 | 7.1 |
| pH (S.U.) Instan Max | 7.3 | 7.3 | 7.3 | 7.4 | 7.4 | 7.4 | 7.2 | 7.3 | 7.4 | 7.4 | 7.3 | 7.4 |
| DO (mg/L) Minimum | 9.2 | 9.8 | 9.2 | 9.3 | 9.3 | 8.2 | 9.8 | 10.1 | 10.2 | 11.0 | 13.5 | 13.4 |
| CBOD5 (ppd) Ave Mon | 6.4 | 6.2 | 4.7 | 6.2 | 5.9 | 5.2 | 5.0 | 4.9 | 5.5 | 5.4 | 3.1 | 9.7 |
| CBOD5 (ppd) Wkly Ave | 7.0 | 7.5 | 8.1 | 10.6 | 7.5 | 10.5 | 5.4 | 5.4 | 10.0 | 7.1 | 7.1 | 14.4 |
| CBOD5 (mg/L) Ave Mo | 3 | 3 | 3 | 3.0 | 3.0 | 3.0 | 3 | 3 | 3.0 | 3 | 3 | 3.0 |
| CBOD5 (mg/L) W Ave | 3 | 3 | 3 | 3.0 | 3.0 | 3.0 | 3 | 3 | 3.1 | 3 | 3 | 3.0 |
| BOD5 (ppd) Inf Ave M | 127.1 | 74.7 | 44.3 | 45.2 | 57.2 | 88.5 | 64.0 | 49.4 | 87.5 | 29.3 | 72.3 | 90.5 |
| BOD5 (ppd) Influent Weekly Ave | 194.6 | 173.8 | 72.9 | 155.2 | 117.3 | 205.6 | 72.5 | 67.1 | 157.2 | 87.8 | 91.2 | 215.0 |
| BOD5 (mg/L) Influent Ave Monthly | 61.2 | 57.7 | 26.7 | 26.1 | 27.7 | 50.4 | 38.7 | 30.7 | 27.1 | 40 | 34 | 25.4 |
| BOD5 (mg/L) Influent Weekly Ave | 101 | 71.1 | 33.9 | 43.8 | 53.3 | 58.7 | 48.0 | 39.9 | 103 | 61.9 | 42 | 44.9 |
| TSS (ppd) Ave Mon | 7.8 | 7.7 | 6.5 | 10.5 | 5.9 | 13.0 | 7.5 | 8.9 | 5.4 | 5.4 | 3.1 | 13.0 |
| TSS (ppd) Inf Ave Mo | 187.7 | 81.8 | 51.2 | 89.7 | 47.1 | 56.0 | 103.5 | 68.3 | 78.0 | 94.3 | 78.0 | 73.8 |
| TSS (ppd) Inf W Ave | 437.3 | 189.5 | 87.6 | 291.1 | 101.0 | 91.1 | 171.0 | 109.7 | 194.2 | 193.0 | 174.4 | 225.0 |
| TSS (ppd) Wkly Ave | 11.6 | 11.4 | 10.5 | 16.2 | 7.5 | 38.5 | 15.1 | 15.2 | 9.7 | 7.1 | 7.1 | 27.2 |
| TSS (mg/L) Ave Mon | 3.8 | 3.8 | 4 | 4 | 3 | 6.4 | 4.5 | 5.5 | 3 | 3 | 3 | 4.2 |
| TSS (mg/L) Infl Ave Mo | 89 | 50 | 26.8 | 36.2 | 21.5 | 43 | 62.8 | 44.3 | 39 | 38 | 37 | 19.2 |
| TSS (mg/L) Inf W Ave | 227 | 58 | 50 | 126 | 46 | 84 | 100 | 76 | 66 | 61.9 | 84 | 47 |
| TSS (mg/L) Wkly Ave | 6 | 6 | 6 | 7 | 3 | 12 | 9 | 9 | 3 | 3 | 3 | 9 |
| F Coliform (#/100 ml) Geometric Mean | 1 | 2.8 | 2.7 | 3.2 | 1.2 | 1.5 | 1.2 | 2.3 | 1.7 | 1.2 | 1 | 1.5 |
| F Coliform (#/100 ml) Instant Maximum | 1 | 31 | 5 | 9 | 2 | 2 | 2 | 5 | 7 | 2 | 1 | 7 |
| UV Intensity (mW/cm²) Average Monthly | 3.6 | 3.0 | 4.2 | 4.2 | 5.0 | 4.6 | 1.2 | 5.6 | 5.6 | 5.0 | 5.0 | 3.3 |
| N (mg/L) Ave Monthly | 7.1 | 8.4 | 7.0 | 5.0 | 5.4 | 7.6 | 7.2 | 5.8 | 7.0 | 5.2 | 5.1 | 5.6 |
| Amm (ppd) Ave M | 1.4 | 1.0 | 0.7 | 0.3 | 0.7 | 1.1 | 0.7 | 0.6 | 0.8 | 0.9 | 0.7 | 1.3 |
| Amm (mg/L) Ave M | 0.5 | 0.5 | 0.3 | 0.8 | 0.3 | 0.4 | 0.43 | 0.4 | 0.5 | 0.5 | 0.3 | 0.4 |
| P (mg/L) Ave Monthly | 1.2 | 0.9 | 1 | 1.0 | 1.1 | 2.0 | 1.8 | 2.0 | 2.4 | 1.5 | 1.1 | 0.7 |

## Compliance History

No violations tabulated

## Development of Effluent Limitations

**Outfall No.** 001 **Design Flow (MGD)** .45
**Latitude** 41º 21' 4.49" **Longitude** -80º 4' 30.42"
**Wastewater Description:** Effluent

### Technology-Based Limitations

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

| Pollutant | Limit (mg/l) | SBC | Federal Regulation | State Regulation |
|---|---|---|---|---|
| $CBOD_5$ | 25 | Average Monthly | 133.102(a)(4)(i) | 92a.47(a)(1) |
| | 40 | Average Weekly | 133.102(a)(4)(ii) | 92a.47(a)(2) |
| Total Suspended Solids | 30 | Average Monthly | 133.102(b)(1) | 92a.47(a)(1) |
| | 45 | Average Weekly | 133.102(b)(2) | 92a.47(a)(2) |
| pH | 6.0 – 9.0 S.U. | Min – Max | 133.102(c) | 95.2(1) |
| Fecal Coliform (5/1 – 9/30) | 200 / 100 ml | Geo Mean | - | 92a.47(a)(4) |
| Fecal Coliform (5/1 – 9/30) | 1,000 / 100 ml | IMAX | - | 92a.47(a)(4) |
| Fecal Coliform (10/1 – 4/30) | 2,000 / 100 ml | Geo Mean | - | 92a.47(a)(5) |
| Fecal Coliform (10/1 – 4/30) | 10,000 / 100 ml | IMAX | - | 92a.47(a)(5) |
| Total Residual Chlorine | 0.5 | Average Monthly | - | 92a.48(b)(2) |
| DO | 4.0 | Minimum | | BPJ |

### Water Quality-Based Limitations

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

| Parameter | Limit (mg/l) | SBC | Model |
|---|---|---|---|
| Ammonia summer | 6.5 | NA | 6.5 |
| Ammonia winter | 19.5 | NA | 19.5 |
| CBOD summer | 10 | NA | 10 |
| CBOD winter | 20 | NA | 20 |

Comments: The existing requirements should be retained

### Best Professional Judgment (BPJ) Limitations

Comments: DO

### Anti-Backsliding

*Not necessary*

## Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (362-0400-001), SOPs and/or BPJ.

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

| Parameter | Effluent Limitations | | | | | | Monitoring Requirements | |
|---|---|---|---|---|---|---|---|---|
| | Mass Units (lbs/day) (1) | | Concentrations (mg/L) | | | | Minimum (2) Measurement Frequency | Required Sample Type |
| | Average Monthly | Weekly Average | Minimum | Average Monthly | Weekly Average | Instant. Maximum | | |
| Flow (MGD) | Report | Report | XXX | XXX | XXX | XXX | Continuous | Recorded |
| 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 |
| CBOD5 Nov 1 - Apr 30 | 75.1 | 112.6 | XXX | 20.0 | 30.0 | 40.0 | 1/week | 24-Hr Composite |
| CBOD5 May 1 - Oct 31 | 37.5 | 56.3 | XXX | 10.0 | 15.0 | 20.0 | 1/week | 24-Hr Composite |
| BOD5 Influent | Report | Report | XXX | Report | Report | XXX | 1/week | 24-Hr Composite |
| TSS | 112.6 | 168.9 | XXX | 30.0 | 45.0 | 60.0 | 1/week | 24-Hr Composite |
| TSS Influent | Report | Report | XXX | Report | Report | XXX | 1/week | 24-Hr Composite |
| Fecal Coliform (No./100 ml) Oct 1 - Apr 30 | XXX | XXX | XXX | 2000 Geo Mean | XXX | 10000 | 1/week | Grab |
| Fecal Coliform (No./100 ml) May 1 - Sep 30 | XXX | XXX | XXX | 200 Geo Mean | XXX | 1000 | 1/week | Grab |
| E. Coli (No./100 ml) | XXX | XXX | XXX | XXX | XXX | Report | 1/quarter | Grab |
| UV Intensity (mW/cm²) | XXX | XXX | XXX | Report | XXX | XXX | 4/week | Measured |
| Total Nitrogen | XXX | XXX | XXX | Report | XXX | XXX | 1/week | 24-Hr Composite |
| Ammonia Nov 1 - Apr 30 | 73.2 | XXX | XXX | 19.5 | XXX | 39.0 | 1/week | 24-Hr Composite |
| Ammonia May 1 - Oct 31 | 24.4 | XXX | XXX | 6.5 | XXX | 13.0 | 1/week | 24-Hr Composite |
| Total Phosphorus | XXX | XXX | XXX | Report | XXX | XXX | 1/week | 24-Hr Composite |

Compliance Sampling Location: Outfall 001 after disinfection

## Permit No. PA0022373

Input Data WQM 7.0

| Stream Code | Stream Name | RMI | Elevation (ft) | Drainage Area (sq mi) | Slope (ft/ft) | PWS Withdrawal (mgd) | Apply FC |
|---|---|---|---|---|---|---|---|
| SWP Basin | | | | | | | |
| 16G | 51322 SANDY CREEK | 18.290 | 1145.72 | 4.78 | 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 (ºC) | Tributary pH | Stream Temp (ºC) | Stream pH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Q7-10 | 0.734 | 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 | | | | | | | |

| | | | | |
|---|---|---|---|---|
| CBOD5 | 10.00 | 2.00 | 0.00 | 1.50 |
| Dissolved Oxygen | 4.00 | 7.54 | 0.00 | 0.00 |
| NH3-N | 6.50 | 0.10 | 0.00 | 0.70 |

## Permit No. PA0022373



Discharge Data

| Name | Permit Number | Existing Permitted Design Disc Flow (mgd) | Disc Flow (mgd) | Disc Flow (mgd) | Reserve Factor | Disc Temp (°C) | Disc pH |
|---|---|---|---|---|---|---|---|
| Lakeview | PA0022373 | 0.0000 | 0.4500 | 0.0000 | 0.000 | 25.00 | 7.50 |

Parameter Data

| Parameter Name | Disc Conc (mg/L) | Trib Conc (mg/L) | Stream Conc (mg/L) | Fate Coef (1/days) |
|---|---|---|---|---|

**Permit No. PA0022373**

# 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 |
|---|---|---|---|---|---|---|---|---|
| 16G | 51322 | SANDY CREEK | 0.000 | 916.32 | 161.00 | 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 | 0.734 | 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 |

**Permit No. PA0022373**

# WQM 7.0 Hydrodynamic Outputs

| SWP Basin | Stream Code | Stream Name |
|---|---|---|
| 16G | 51322 | SANDY CREEK |

| RMI | Stream Flow (cfs) | PWS With (cfs) | Net Stream Flow (cfs) | Disc Analysis Flow (cfs) | Reach Slope (ft/ft) | Depth (ft) | Width (ft) | W/D Ratio | Velocity (fps) | Reach Trav Time (days) | Analysis Temp (ºC) | Analysis pH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Q7-10 Flow | | | | | | | | | | | | |
| 18.290 | 3.51 | 0.00 | 3.51 | .6962 | 0.00238 | .628 | 21.4 | 34.07 | 0.31 | 3.572 | 25.00 | 7.05 |
| Q1-10 Flow | | | | | | | | | | | | |
| 18.290 | 2.25 | 0.00 | 2.25 | .6962 | 0.00238 | NA | NA | NA | 0.26 | 4.363 | 25.00 | 7.08 |
| Q30-10 Flow | | | | | | | | | | | | |
| 18.290 | 4.77 | 0.00 | 4.77 | .6962 | 0.00238 | NA | NA | NA | 0.36 | 3.084 | 25.00 | 7.04 |

Thursday,
May 6,
2021

## Permit No. PA0022373

Version 1.1

**Permit No. PA0022373**

# WQM 7.0 Modeling Specifications

| | | | |
|---|---|---|---|
| Parameters | Both | Use Inputted Q1-10 and Q30-10 Flows | ☑ |
| WLA Method | EMPR | Use Inputted W/D Ratio | ☐ |
| Q1-10/Q7-10 Ratio | 0.64 | Use Inputted Reach Travel Times | ☐ |
| Q30-10/Q7-10 Ratio | 1.36 | Temperature Adjust Kr | ☑ |
| D.O. Saturation | 90.00% | Use Balanced Technology | ☑ |
| D.O. Goal | 5 | | |

Thursday,
May 6,
2021

## Permit No. PA0022373

Version 1.1

**Permit No. PA0022373**

# WQM 7.0 Wasteload Allocations

| SWP Basin | Stream Code | Stream Name |
|---|---|---|
| 16G | 51322 | SANDY CREEK |

## NH3-N Acute Allocations

| RMI | Discharge Name | Baseline Criterion (mg/L) | Baseline WLA (mg/L) | Multiple Criterion (mg/L) | Multiple WLA (mg/L) | Critical Reach | Percent Reduction |
|---|---|---|---|---|---|---|---|
| 18.290 | Lakeview | 10.32 | 13 | 10.32 | 13 | 0 | 0 |

## NH3-N Chronic Allocations

| RMI | Discharge Name | Baseline Criterion (mg/L) | Baseline WLA (mg/L) | Multiple Criterion (mg/L) | Multiple WLA (mg/L) | Critical Reach | Percent Reduction |
|---|---|---|---|---|---|---|---|
| 18.290 | Lakeview | 1.35 | 6.5 | 1.35 | 6.5 | 0 | 0 |

## Dissolved Oxygen Allocations

| | | CBOD5 | | NH3-N | | Dissolved 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 |
| 18.29 | Lakeview | 10 | 10 | 6.5 | 6.5 | 4 | 4 | 0 | 0 |

## Permit No. PA0022373

**Permit No. PA0022373**

# WQM 7.0 D.O.Simulation

| SWP Basin | Stream Code | Stream Name |
|---|---|---|
| 16G | 51322 | SANDY CREEK |

| RMI | Total Discharge Flow (mgd) | Analysis Temperature (°C) | Analysis pH |
|---|---|---|---|
| 18.290 | 0.450 | 25.000 | 7.052 |
| **Reach Width (ft)** | **Reach Depth (ft)** | **Reach WDRatio** | **Reach Velocity (fps)** |
| 21.396 | 0.628 | 34.066 | 0.313 |
| **Reach CBOD5 (mg/L)** | **Reach Kc (1/days)** | **Reach NH3-N (mg/L)** | **Reach Kn (1/days)** |
| 3.32 | 0.113 | 1.16 | 1.029 |
| **Reach DO (mg/L)** | **Reach Kr (1/days)** | **Kr Equation** | **Reach DO Goal (mg/L)** |
| 6.954 | 7.952 | Tsivoglou | 5 |
| **Reach Travel Time (days)** | | | |
| 3.572 | | | |

Subreach Results

| TravTime (days) | CBOD5 (mg/L) | NH3-N (mg/L) | D.O. (mg/L) |
|---|---|---|---|
| 0.357 | 3.16 | 0.80 | 7.54 |
| 0.714 | 3.00 | 0.56 | 7.54 |
| 1.072 | 2.85 | 0.39 | 7.54 |
| 1.429 | 2.71 | 0.27 | 7.54 |
| 1.786 | 2.58 | 0.18 | 7.54 |
| 2.143 | 2.45 | 0.13 | 7.54 |
| 2.501 | 2.33 | 0.10 | 7.54 |
| 2.858 | 2.21 | 0.10 | 7.54 |
| 3.215 | 2.10 | 0.10 | 7.54 |
| 3.572 | 2.00 | 0.10 | 7.54 |

**Permit No. PA0022373**

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# WQM 7.0 Effluent Limits

| SWP Basin | Stream Code | Stream Name |
|---|---|---|
| 16G | 51322 | SANDY CREEK |

| 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) |
|---|---|---|---|---|---|---|---|
| 18.290 | Lakeview | PA0022373 | 0.000 | CBOD5 | 10 | | |
| | | | | NH3-N | 6.5 | 13 | |
| | | | | Dissolved Oxygen | | | 4 |