pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

**Southcentral Regional Office**
**CLEAN WATER PROGRAM**

| | | | |
|---|---|---|---|
| Application Type | **Renewal** | Application No. | **PA0262170** |
| Facility Type | **Industrial** | APS ID | **825646** |
| Major / Minor | **Minor** | Authorization ID | **1264418** |

# NPDES PERMIT FACT SHEET INDIVIDUAL INDUSTRIAL WASTE (IW) AND IW STORMWATER

## Applicant and Facility Information

| | | | |
|---|---|---|---|
| Applicant Name | **Stoneridge Retirement Living** | Facility Name | **Stoneridge Retirement Living Facility** |
| Applicant Address | 440 E Lincoln Avenue | Facility Address | 440 E Lincoln Avenue |
| | Myerstown, PA 17067-2239 | | Myerstown, PA 17067-2239 |
| Applicant Contact | Craig Garloff | Facility Contact | Craig Garloff |
| Applicant Phone | (717) 866-3300 | Facility Phone | (717) 866-3300 |
| Client ID | 307910 | Site ID | 777798 |
| SIC Code | 8361 | Municipality | Jackson Township |
| SIC Description | Services - Residential Care | County | Lebanon |
| Date Application Received | March 4, 2019 | EPA Waived? | Yes |
| Date Application Accepted | March 18, 2019 | If No, Reason | |

Purpose of Application: Permit renewal to discharge non-contact cooling water

## Summary of Review

### 1.0 General Discussion

This fact sheet supports the renewal of an existing NPDES permit for discharge of industrial waste water consisting of non-contact cooling water. Wastewater is generated by pumping groundwater through a heat exchanger of a geothermal heat pump being used to heat and cool residential units at StoneRidge Retirement community located in Jackson Township, Lebanon County. The groundwater is enclosed, not expected to contact any material during circulation and no chemical is added to the ground water. An annual average discharge of 0.06MGD of cooling water is proposed for this facility. The cooling water discharge goes through a stormwater basin on site prior to discharging to an unnamed tributary of Owl Creek classified for warm water fishes (WWF). The facility is not covered under ELG. The existing NPDES permit was issued on August 29, 2014 with an effective date of September 1, 2014 and expiration date of August 31, 2019. The applicant submitted an administratively complete NPDES renewal application to the Department on time and is currently operating under the terms and conditions in the existing permit under administrative extension provisions pending Department action on the renewal application.

Topographical Map showing the discharge location is presented in attachment A

### 1.1 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-

| Approve | Deny | Signatures | Date |
|---|---|---|---|
| X | | J. Pascal Kwedza, P.E. / Environmental Engineer | May 13, 2020 |
| X | | Daniel W. Martin, P.E. / Environmental Engineer Manager | July 1, 2020 |
| X | | Maria D. Bebenek | July 1, 2020 |

**Summary of Review**

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.

**1.2 Changes to the existing Permit**

- Dissolved Iron limitation has been removed

**1.3 Existing Permit Limits and Monitoring Requirements**

| Parameter | Effluent Limitations | | | | | | Monitoring Requirements | |
|---|---|---|---|---|---|---|---|---|
| | Mass Units (lbs/day) (1) | | Concentrations (mg/L) | | | | Minimum (2) Measurement Frequency | Required Sample Type |
| | Average Monthly | Average Weekly | Minimum | Average Monthly | Maximum | Instant. Maximum | | |
| Flow (MGD) | Report | Report Daily Max | XXX | XXX | XXX | XXX | Continuous | Measured |
| pH (S.U.) | XXX | XXX | 6.0 Inst Min | XXX | XXX | 9.0 | 1/week | Grab |
| Temperature (ºF) Apr 16 - 30 | XXX | XXX | XXX | XXX | 88 Daily Max | XXX | 1/week | I-S |
| Temperature (ºF) Apr 1 - 15 | XXX | XXX | XXX | XXX | 82 Daily Max | XXX | 1/week | I-S |
| Temperature (ºF) Jan 1 - 31 | XXX | XXX | XXX | XXX | 50 Daily Max | XXX | 1/week | I-S |
| Temperature (ºF) May 16 - 31 | XXX | XXX | XXX | XXX | 105 Daily Max | XXX | 1/week | I-S |
| Temperature (ºF) Feb 1 - 29 | XXX | XXX | XXX | XXX | 51 Daily Max | XXX | 1/week | I-S |
| Temperature (ºF) May 1 - 15 | XXX | XXX | XXX | XXX | 84 Daily Max | XXX | 1/week | I-S |
| Temperature (ºF) Jun 1 - 15 | XXX | XXX | XXX | XXX | 105 Daily Max | XXX | 1/week | I-S |
| Temperature (ºF) Jun 16 - 30 | XXX | XXX | XXX | XXX | 109 Daily Max | XXX | 1/week | I-S |
| Temperature (ºF) Mar 1 - 31 | XXX | XXX | XXX | XXX | 73 Daily Max | XXX | 1/week | I-S |
| Temperature (ºF) Aug 16 - 31 | XXX | XXX | XXX | XXX | 99 Daily Max | XXX | 1/week | I-S |
| Temperature (ºF) Aug 1 - 15 | XXX | XXX | XXX | XXX | 99 Daily Max | XXX | 1/week | I-S |

**Summary of Review**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Temperature (ºF) Jul 1 - 31 | XXX | XXX | XXX | XXX | 100 Daily Max | XXX | 1/week | I-S |
| Temperature (ºF) Sep 16 - 30 | XXX | XXX | XXX | XXX | 87 Daily Max | XXX | 1/week | I-S |
| Temperature (ºF) Sep 1 - 15 | XXX | XXX | XXX | XXX | 93 Daily Max | XXX | 1/week | I-S |
| Temperature (ºF) Dec 1 - 31 | XXX | XXX | XXX | XXX | 50 Daily Max | XXX | 1/week | I-S |
| Temperature (ºF) Oct 16 - 31 | XXX | XXX | XXX | XXX | 75 Daily Max | XXX | 1/week | I-S |
| Temperature (ºF) Oct 1 - 15 | XXX | XXX | XXX | XXX | 81 Daily Max | XXX | 1/week | I-S |
| Temperature (ºF) Nov 16 - 30 | XXX | XXX | XXX | XXX | 58 Daily Max | XXX | 1/week | I-S |
| Temperature (ºF) Nov 1 - 15 | XXX | XXX | XXX | XXX | 68 Daily Max | XXX | 1/week | I-S |
| Nitrate-Nitrite | XXX | XXX | XXX | Report Annl Avg | XXX | XXX | 1/year | Grab |
| Total Nitrogen | XXX | XXX | XXX | Report Annl Avg | XXX | XXX | 1/year | Calculation |
| TKN | XXX | XXX | XXX | Report Annl Avg | XXX | XXX | 1/year | Grab |
| Total Phosphorus | XXX | XXX | XXX | Report Annl Avg | XXX | XXX | 1/year | Grab |
| Dissolved Iron | XXX | XXX | XXX | 0.4 | 0.72 Daily Max | XXX | 2/month | Grab |

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

| | | | |
|---|---|---|---|
| Outfall No. | 001 | Design Flow (MGD) | 0.06 |
| Latitude | 40° 22' 43.00" | Longitude | 76° 17' 49.00" |
| Quad Name | Bethel | Quad Code | 1535 |
| Wastewater Description: | Non-contact geothermal cooling water | | |
| Receiving Waters | UNT Owl Creek | Stream Code | No Code |
| NHD Com ID | 25963006 | RMI | 0.500 |
| Drainage Area | 0.23 | Yield (cfs/mi$^2$) | |
| $Q_{7-10}$ Flow (cfs) | 0.03 | $Q_{7-10}$ Basis | USGS Gage station |
| Elevation (ft) | 444.46 | Slope (ft/ft) | |
| Watershed No. | 3-C | Chapter 93 Class. | WWF, MF |
| Existing Use | | Existing Use Qualifier | |
| Exceptions to Use | | Exceptions to Criteria | |
| Assessment Status | Impaired | | |
| Cause(s) of Impairment | Nutrients, Siltation | | |
| Source(s) of Impairment | Agriculture | | |
| TMDL Status | Final, 04/09/2003 | Name | Owl Creek |

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

| | | | |
|---|---|---|---|
| Nearest Downstream Public Water Supply Intake | Western Berks Water Authority | | |
| PWS Waters | Tulpehocken Creek | Flow at Intake (cfs) | |
| PWS RMI | | Distance from Outfall (mi) | 33 |

Changes Since Last Permit Issuance:

Other Comments:

**1.4.1 Public water supply**

The nearest downstream water supply intake is located approximately 33 miles downstream from the discharge located in Lower Heidelberg Township on Tulpehocken Creek. The Western Berks Water Authority owns it. No impact from this discharge is expected

## 2.0 Compliance History

### 2.1 DMR Data for Outfall 001 (from April 1, 2019 to March 31, 2020)

| Parameter | MAR-20 | FEB-20 | JAN-20 | DEC-19 | NOV-19 | OCT-19 | SEP-19 | AUG-19 | JUL-19 | JUN-19 | MAY-19 | APR-19 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flow (MGD) Average Monthly | 0.009 | FF | 0.016 | 0.001 | 0.001 | 0.023 | 0.044 | 0.046 | FF | FF | FF | FF |
| Flow (MGD) Daily Maximum | 0.020 | FF | 0.035 | 0.001 | 0.036 | 0.043 | 0.047 | 0.052 | FF | FF | FF | FF |
| pH (S.U.) Minimum | 6.75 | FF | 6.72 | 6.78 | 7.27 | 6.58 | 6.50 | 6.60 | 6.78 | 7.80 | 7.70 | 7.80 |
| pH (S.U.) Instantaneous Maximum | 6.91 | FF | 6.95 | 7.03 | 7.31 | 7.23 | 7.03 | 7.07 | 7.25 | 7.86 | 7.87 | 7.80 |
| Temperature (Day 1 thru 15) (ºF) <br/> Daily Maximum | | | | | 52.7 | 72.1 | 84.73 | 82.48 | | 81.6 | 73.9 | 76.51 |
| Temperature (Day 16 thru End of Month) (ºF) <br/> Daily Maximum | | | | | FF | 79.8 | 79.00 | 83.68 | | 70.5 | 79.4 | FF |
| Temperature (ºF) Daily Maximum | 63.9 | FF | 70.55 | 69.58 | | | | | 93.64 | | | |
| Nitrate-Nitrite (mg/L) Annual Average | | | | < 0.40 | | | | | | | | |
| Total Nitrogen (mg/L) Annual Average | | | | < 1.4 | | | | | | | | |
| TKN (mg/L) Annual Average | | | | < 1.0 | | | | | | | | |
| Total Phosphorus (mg/L) Annual Average | | | | < 0.10 | | | | | | | | |
| Dissolved Iron (mg/L) Average Monthly | < 0.060 | < 0.060 | < 0.060 | E | E | < 0.060 | < 0.060 | < 0.060 | < 0.060 | < 0.06 | < 0.060 | < 0.060 |
| Dissolved Iron (mg/L) Daily Maximum | < 0.060 | < 0.060 | < 0.060 | E | E | < 0.060 | < 0.060 | < 0.060 | < 0.060 | < 0.06 | < 0.060 | < 0.060 |

**2.2 Effluent Violations for Outfall 001, from: May 1, 2019 To: March 31, 2020**

| Parameter | Date | SBC | DMR Value | Units | Limit Value | Units |
|---|---|---|---|---|---|---|
| Temperature | 12/31/19 | Daily Max | 69.58 | ºF | 50 | ºF |
| Temperature | 01/31/20 | Daily Max | 70.55 | ºF | 50 | ºF |

Discharge Monitoring Reports (DMRs) review for the facility for the last 12 months of operation presented on the table above indicate permit limits have been met most of the time. Effluent violations occurred in December 2019 and January 2020, which appeared to be addressed.

**2.3 Summary of Inspections:**

The facility has been inspected 4 times during the past permit cycle. No effluent violation noted during plant inspections. The facility has difficulty at times trying to retrieve monitoring data from the facility's database and advised to prepare an alternative to monitoring data if data cannot be retrieved.

## 3.0 Development of Effluent Limitations

| | | | |
|---|---|---|---|
| **Outfall No.** | 001 | **Design Flow (MGD)** | .06 |
| **Latitude** | 40º 22' 43.00" | **Longitude** | -76º 17' 49.00" |

**Wastewater Description:** Noncontact Cooling Water (NCCW)

### 3.1 Basis for Effluent Limitations

In general, the Clean Water Act (AWA) requires that the effluent limits for a particular pollutant be the more stringent of either technology-based limits or water quality-based limits. Technology-based limits are set according to the level of treatment that is achievable using available technology. A water quality-based effluent limit is designed to ensure that the water quality standards applicable to a waterbody are being met and may be more stringent than technology-based effluent limits

### 3.1.1 Technology-Based Limitations

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

**pH**

Following PA code 25 § 95.2, a pH of not less than 6 and not greater than 9, will be required in the permit for this industrial waste discharge with daily monitoring requirement

### 4.0 Water Quality-Based Limitations

Streamflows for the water quality analysis were determined by correlating with the yield of USGS gauging station No. 1471000 on Tulpehocken Creek downstream of the Blue Marsh dam. The $Q_{7-10}$ and drainage area at the gage is 26.8ft3/s and 211$mi^2$ respectively. The resulting yields are as follows:

$Q_{7-10}$ = (26.8$ft^3$/s)/211$mi^2$ = 0.13$ft^3$/s/ $mi^2$

The drainage area at discharge point calculated by streamStats is 0.23 $mi^2$

The $Q_{7-10}$ = 0.23$mi^2$ x 0.13 $ft^3$/s/$mi^2$ = 0.030$ft^3$/s.

### 4.1 Temperature

Effluent limitations for temperature were calculated using the Case 2 Thermal Worksheet with the proposed wasteflow of 0.06MGD and ambient temperature for warm water fishes. The attached result (attachment B) from the case 2 thermal worksheet is recommended for each month. The recommended thermal limits on attachment B are consistent with the existing thermal limits in the permit and the permittee has been meeting the limits. Daily flow measurement and weekly temperature monitoring will be required in the permit. In addition, the facility's thermal discharge should not increase the temperature of the stream more than $2^0$F in one 1 hour.

### 4.2 Toxics

For the original permit, a reasonable potential (RP) was done for pollutant Groups 1 and 2 sampled from the ground water supply well since there was no effluent data. The analysis resulted in an average monthly limit of 0.4mg/l for Dissolved Iron. During the permit term, all samples results for Dissolved Iron were non-detect at MDL of 0.06mg/l. An RP analysis was conducted for the current renewal using Toxics Screening Analysis spreadsheet to determine if any pollutants were candidates for PENTOXSD modeling. Dissolved Iron was no longer determined to be candidate for PENTOXSD modeling and deleted from the existing permit. See the RP Screening Analysis spreadsheet presented in attachment C. The elimination of the limit is justified due to the availability of new information. Effluent data rather than influent data was used in the development of the renewed permit.

**4.3 TDS, Chloride, Sulfate, Bromide, and 1,4-dioxane**

Under the authority of §92a.61, DEP has determined it should implement increased monitoring in NPDES permits for TDS, sulfate, chloride, bromide, and 1,4-dioxane. The following approach will be implemented for point source discharges upon issuance or reissuance of an individual NPDES permit:

- Where the concentration of TDS in the discharge exceeds 1,000 mg/L, or the net TDS load from a discharge exceeds 20,000 lbs/day, and the discharge flow exceeds 0.1 MGD, Part A of the permit should include monitor and report for TDS, sulfate, chloride, and bromide. Discharges of 0.1 MGD or less should monitor and report for TDS, sulfate, chloride, and bromide if the concentration of TDS in the discharge exceeds 5,000 mg/L.

- Where the concentration of bromide in a discharge exceeds 1 mg/L and the discharge flow exceeds 0.1 MGD, Part A of the permit should include monitor and report for bromide. Discharges of 0.1 MGD or less should monitor and report for bromide if the concentration of bromide in the discharge exceeds 10 mg/L.

- Where the concentration of 1,4-dioxane (CAS 123-91-1) in a discharge exceeds 10 µg/L and the discharge flow exceeds 0.1 MGD, Part A of the permit should include monitor and report for 1,4-dioxane. Discharges of 0.1 MGD or less should monitor and report for 1,4-dioxane if the concentration of 1,4-dioxane in the discharge exceeds 100 µg/L.

The maximum daily TDS discharge results submitted with the application is 536 mg/L which is equivalent to 268 lbs/day based on the design flow of 0.06 MGD. The discharge level for TDS is below the minimum 1000 mg/l and 20,000lbs/day, to require monitoring, therefore no monitoring of TDS, Chloride, Sulfate, and Bromide will be required in the permit. There is no data for 1,4-dioxane, therefore no monitoring is required for 1,4-dioxane at this time.

**4.5 Chesapeake Bay Strategy:**

In 2003, EPA established state-wide cap loads for Total Nitrogen and Total Phosphorus for Pennsylvania that are needed to ensure compliance with new water quality standards enacted to restore the water quality of the Chesapeake Bay. DEP released Pennsylvania's Chesapeake Bay Tributary Strategy (CBTS) in January of 2005 to guide Pennsylvania's efforts to meet those cap loads and made revisions to the Strategy in 2006-2007 following a stakeholder process. Industrial discharges have been prioritized by Central Office based on their delivered TN loadings to the Bay. Significant industrial wastewater dischargers are facilities that discharge more than 75 lbs/day of TN or 25 lbs/day of TP on an average annual basis and the rest are classified as non-significant dischargers. Allocation of cap load for significant industrial dischargers is divided into five categories. 1. Facilities that reduced TN and TP prior to 2002 – Cap Loads established using the 2002 load or the current (2007-2008) load, whichever is greater, plus 10%. 2. Facilities that submitted a Nutrient Reduction Evaluation (NRE) as requested by DEP and reduced their TN and TP loads between 2002 and 2009 – Cap Loads established using the current (2007-2008) load, plus 10%. 3. Facilities that submitted an NRE and planning to reduce TN and TP loads through facility upgrades or operational improvements – Cap Loads established as requested by the facility in the NRE, with a compliance schedule. 4. Facilities that are already at "low levels" of nutrient discharge loads – Cap Loads established at current (2007-2008) loads. 5. Facilities that did not submit an NRE or submitted an NRE but did not propose to reduce nutrient loads – Cap Loads established at current (2007-2008) loads, reduced by 33%. Non-significant dischargers will monitor and report TN and TP for the permit cycle. Frequency of monitoring will depend on the type of industry.

Prior to implementing DEPs industrial discharger cap load, EPA published the Chesapeake Bay Total Maximum Daily Load (TMDL) in December of 2010. The TMDL was prompted by insufficient progress and continued poor water quality in the Chesapeake Bay and its tidal tributaries. In order to address the TMDL, Pennsylvania developed a Chesapeake Watershed Implementation Plan (WIP) – Phase 1, Phase 2 WIP and a supplement to phase 2 WIP and Phase 3 WIP and supplement to phase 3 WIP

As outlined in the phase 3 WIP, and its supplement, permitting for significant Industrial discharges will follow the original categorical approach established during the stakeholder process. This facility discharges a non-contact cooling water and is considered as a non-significant discharger. In accordance with Supplement to Phase 3 WIP, this facility will monitor and report Total Nitrogen, Nitrate-Nitrite as N, Total Kjeldahl Nitrogen and Total Phosphorus once a year for the permit cycle.

## 5.0 Other Requirements

### 5.1 Anti-backsliding

Dissolved Iron was deleted from the permit. The limit was based on influent data and was deleted when a new information become available based on the effluent indicate the limit was not required.

### 5.2 Antidegradation (93.4):

The effluent limits for this discharge have been developed to ensure that existing instream water uses and the level of water quality necessary to protect the existing uses are maintained and protected. No High-Quality Waters are impacted by this discharge. No Exceptional Value Waters are impacted by this discharge.

### 5.3 Class A Wild Trout Fisheries:

No Class A Wild Trout Fisheries are impacted by this discharge.

### 5. 4 303d listed stream

Oil creek watershed is impaired for aquatic life due to nutrients and siltation from agricultural activities as indicated on the table below. TMDL was finalized for the watershed in April, 2003 which recommended non-point source load reduction for total suspended solids and total phosphorus. The non-contact cooling water discharge proposed under this permit is not expected to add phosphorus to the receiving water; therefore, no further action is required except monitoring of TP and TN.

Streams Integrated List Non-Attain

| GNIS_NAME | STR_ASSESSED_USE_DESC | STR_ATTAIN_USE_DESC | SOURCE_CAUSE |
|---|---|---|---|
| Owl Creek | Aquatic Life | Impaired | Agriculture - Nutrients ; Agriculture - Siltation |

### 5.5 Basis for Effluent and Surface Water Monitoring

Section 308 of the CWA and federal regulation 40 CFR 122.44(i) require monitoring in permits to determine compliance with effluent limitations. Monitoring may also be required to gather effluent and surface water data to determine if additional effluent limitations are required and/or to monitor effluent impacts on receiving water quality. The permittee is responsible for conducting the monitoring and for reporting results on Discharge Monitoring Reports (DMRs).

### 5.6 Effluent Monitoring Frequency

Monitoring frequencies are based on the nature and effect of the pollutant, as well as a determination of the minimum sampling necessary to adequately monitor the facility's performance. Permittees have the option of taking more frequent samples than are required under the permit. These samples can be used for averaging if they are conducted using EPA-approved test methods (generally found in 40 CFR 136) and if the Method Detection Limits are less than the effluent limits. The sampling location must be after the last treatment unit and prior to discharge to the receiving water. If no discharge occurs during the reporting period, "no discharge" shall be reported on the DMR.

## 6.0 Proposed Effluent Limitations and Monitoring Requirements

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

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

| Parameter | Effluent Limitations | | | | | | Monitoring Requirements | |
|---|---|---|---|---|---|---|---|---|
| | Mass Units (lbs/day) [1] | | Concentrations (mg/L) | | | | Minimum [2] Measurement Frequency | Required Sample Type |
| | Average Monthly | Average Weekly | Minimum | Average Monthly | Maximum | Instant. Maximum | | |
| Flow (MGD) | Report | Report Daily Max | XXX | XXX | XXX | XXX | Continuous | Measured |
| pH (S.U.) | XXX | XXX | 6.0 Inst Min | XXX | XXX | 9.0 | 1/week | Grab |
| Temperature (ºF) Apr 16 - 30 | XXX | XXX | XXX | XXX | 88 Daily Max | XXX | 1/week | I-S |
| Temperature (ºF) Apr 1 - 15 | XXX | XXX | XXX | XXX | 82 Daily Max | XXX | 1/week | I-S |
| Temperature (ºF) Jan 1 - 31 | XXX | XXX | XXX | XXX | 50 Daily Max | XXX | 1/week | I-S |
| Temperature (ºF) May 16 - 31 | XXX | XXX | XXX | XXX | 105 Daily Max | XXX | 1/week | I-S |
| Temperature (ºF) Feb 1 - 29 | XXX | XXX | XXX | XXX | 51 Daily Max | XXX | 1/week | I-S |
| Temperature (ºF) May 1 - 15 | XXX | XXX | XXX | XXX | 84 Daily Max | XXX | 1/week | I-S |
| Temperature (ºF) Jun 1 - 15 | XXX | XXX | XXX | XXX | 105 Daily Max | XXX | 1/week | I-S |
| Temperature (ºF) Jun 16 - 30 | XXX | XXX | XXX | XXX | 109 Daily Max | XXX | 1/week | I-S |
| Temperature (ºF) Mar 1 - 31 | XXX | XXX | XXX | XXX | 73 Daily Max | XXX | 1/week | I-S |
| Temperature (ºF) Aug 16 - 31 | XXX | XXX | XXX | XXX | 99 Daily Max | XXX | 1/week | I-S |
| Temperature (ºF) Aug 1 - 15 | XXX | XXX | XXX | XXX | 99 Daily Max | XXX | 1/week | I-S |
| Temperature (ºF) Jul 1 - 31 | XXX | XXX | XXX | XXX | 100 Daily Max | XXX | 1/week | I-S |

**Outfall 001 , Continued (from Permit Effective Date through Permit Expiration Date )**

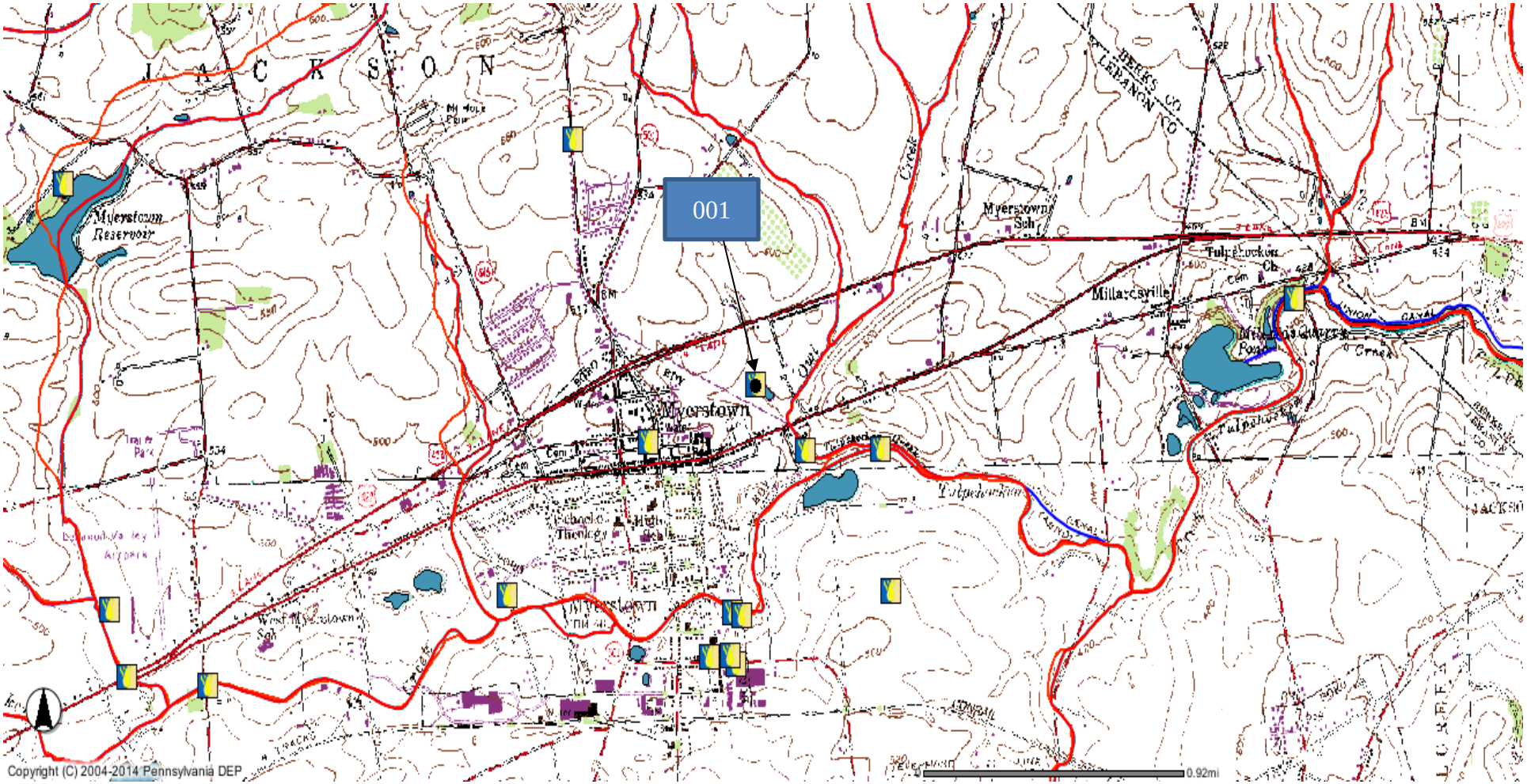
| Parameter | Effluent Limitations | | | | | | Monitoring Requirements | |
|---|---|---|---|---|---|---|---|---|
| | Mass Units (lbs/day) (1) | | Concentrations (mg/L) | | | | Minimum (2) Measurement Frequency | Required Sample Type |
| | Average Monthly | Average Weekly | Minimum | Average Monthly | Maximum | Instant. Maximum | | |
| Temperature (ºF) Sep 16 - 30 | XXX | XXX | XXX | XXX | 87 Daily Max | XXX | 1/week | I-S |
| Temperature (ºF) Sep 1 - 15 | XXX | XXX | XXX | XXX | 93 Daily Max | XXX | 1/week | I-S |
| Temperature (ºF) Dec 1 - 31 | XXX | XXX | XXX | XXX | 50 Daily Max | XXX | 1/week | I-S |
| Temperature (ºF) Oct 16 - 31 | XXX | XXX | XXX | XXX | 75 Daily Max | XXX | 1/week | I-S |
| Temperature (ºF) Oct 1 - 15 | XXX | XXX | XXX | XXX | 81 Daily Max | XXX | 1/week | I-S |
| Temperature (ºF) Nov 16 - 30 | XXX | XXX | XXX | XXX | 58 Daily Max | XXX | 1/week | I-S |
| Temperature (ºF) Nov 1 - 15 | XXX | XXX | XXX | XXX | 68 Daily Max | XXX | 1/week | I-S |
| Nitrate-Nitrite | XXX | XXX | XXX | Report Annl Avg | XXX | XXX | 1/year | Grab |
| Total Nitrogen | XXX | XXX | XXX | Report Annl Avg | XXX | XXX | 1/year | Calculation |
| TKN | XXX | XXX | XXX | Report Annl Avg | XXX | XXX | 1/year | Grab |
| Total Phosphorus | XXX | XXX | XXX | Report Annl Avg | XXX | XXX | 1/year | Grab |

Compliance Sampling Location: At Outfall 001

| **7.0 Tools and References Used to Develop Permit** | |
|---|---|
| | |
| ☐ | WQM for Windows Model (see Attachment) |
| ☒ | PENTOXSD for Windows Model (see Attachment **D**) |
| ☐ | TRC Model Spreadsheet (see Attachment) |
| ☒ | Temperature Model Spreadsheet (see Attachment **B**) |
| ☒ | Toxics Screening Analysis Spreadsheet (see Attachment **C**) |
| ☒ | Water Quality Toxics Management Strategy, 361-0100-003, 4/06. |
| ☒ | Technical Guidance for the Development and Specification of Effluent Limitations, 362-0400-001, 10/97. |
| ☐ | Policy for Permitting Surface Water Diversions, 362-2000-003, 3/98. |
| ☐ | Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 362-2000-008, 11/96. |
| ☐ | Technology-Based Control Requirements for Water Treatment Plant Wastes, 362-2183-003, 10/97. |
| ☐ | Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 362-2183-004, 12/97. |
| ☐ | Pennsylvania CSO Policy, 385-2000-011, 9/08. |
| ☐ | Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03. |
| ☐ | Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 391-2000-002, 4/97. |
| ☒ | Determining Water Quality-Based Effluent Limits, 391-2000-003, 12/97. |
| ☐ | Implementation Guidance Design Conditions, 391-2000-006, 9/97. |
| ☐ | Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 391-2000-007, 6/2004. |
| ☐ | Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 391-2000-008, 10/1997. |
| ☐ | Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 391-2000-010, 3/99. |
| ☒ | Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 391-2000-011, 5/2004. |
| ☐ | Implementation Guidance for Section 93.7 Ammonia Criteria, 391-2000-013, 11/97. |
| ☐ | Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 391-2000-014, 4/2008. |
| ☐ | Implementation Guidance Total Residual Chlorine (TRC) Regulation, 391-2000-015, 11/1994. |
| ☐ | Implementation Guidance for Temperature Criteria, 391-2000-017, 4/09. |
| ☐ | Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 391-2000-018, 10/97. |
| ☐ | Implementation Guidance for Application of Section 93.5(e) for Potable Water Supply Protection Total Dissolved Solids, Nitrite-Nitrate, Non-Priority Pollutant Phenolics and Fluorides, 391-2000-019, 10/97. |
| ☐ | Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 391-2000-021, 3/99. |
| ☐ | Implementation Guidance for the Determination and Use of Background/Ambient Water Quality in the Determination of Wasteload Allocations and NPDES Effluent Limitations for Toxic Substances, 391-2000-022, 3/1999. |
| ☒ | Design Stream Flows, 391-2000-023, 9/98. |
| ☐ | Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics, 391-2000-024, 10/98. |
| ☐ | Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 391-3200-013, 6/97. |
| ☒ | Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07. |
| ☐ | SOP: |
| ☐ | Other: |

## Attachments

### A. Topographical Map



**B. Temperature Limits**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Facility:** | **StoneRidge Retirement Community** | | | | | | |
| **Permit Number:** | PA0262170 | | | | | | |
| **Stream Name:** | UNT Owl Creek | | | | | | |
| **Analyst/Engineer:** | J.P Kwedza | | | | | | |
| **Stream Q7-10 (cfs):** | 0.06 | | | | | | |
| | | | | | | | |
| | **Facility Flows[1]** | | | | | **Stream Flows** | |
| | Stream (Intake) (MGD) | External (Intake) (MGD) | Consumptive (Loss) (MGD) | Discharge (MGD) | | Adj. Q7-10 Stream Flow (cfs) | Downstream[2] Stream Flow (cfs) |
| Jan 1-31 | 0 | 0.06 | 0 | 0.06 | | 0.2 | 0.3 |
| Feb 1-29 | 0 | 0.06 | 0 | 0.06 | | 0.2 | 0.3 |
| Mar 1-31 | 0 | 0.06 | 0 | 0.06 | | 0.4 | 0.5 |
| Apr 1-15 | 0 | 0.06 | 0 | 0.06 | | 0.6 | 0.7 |
| Apr 16-30 | 0 | 0.06 | 0 | 0.06 | | 0.6 | 0.7 |
| May 1-15 | 0 | 0.06 | 0 | 0.06 | | 0.3 | 0.4 |
| May 16-30 | 0 | 0.06 | 0 | 0.06 | | 0.3 | 0.4 |
| Jun 1-15 | 0 | 0.06 | 0 | 0.06 | | 0.2 | 0.3 |
| Jun 16-30 | 0 | 0.06 | 0 | 0.06 | | 0.2 | 0.3 |
| Jul 1-31 | 0 | 0.06 | 0 | 0.06 | | 0.1 | 0.2 |
| Aug 1-15 | 0 | 0.06 | 0 | 0.06 | | 0.1 | 0.2 |
| Aug 16-31 | 0 | 0.06 | 0 | 0.06 | | 0.1 | 0.2 |
| Sep 1-15 | 0 | 0.06 | 0 | 0.06 | | 0.1 | 0.2 |
| Sep 16-30 | 0 | 0.06 | 0 | 0.06 | | 0.1 | 0.2 |
| Oct 1-15 | 0 | 0.06 | 0 | 0.06 | | 0.1 | 0.2 |
| Oct 16-31 | 0 | 0.06 | 0 | 0.06 | | 0.1 | 0.2 |
| Nov 1-15 | 0 | 0.06 | 0 | 0.06 | | 0.1 | 0.2 |
| Nov 16-30 | 0 | 0.06 | 0 | 0.06 | | 0.1 | 0.2 |
| Dec 1-31 | 0 | 0.06 | 0 | 0.06 | | 0.1 | 0.2 |

| Facility: | **StoneRidge Retirement Community** | | | | | | |
|---|---|---|---|---|---|---|---|
| Permit Number: | PA0262170 | | | | | | |
| Stream: | UNT Owl Creek | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | **WWF** | | | **WWF** | | **WWF** | |
| | Ambient Stream | Ambient Stream | Target Maximum | Daily | | Daily | |
| | Temperature (ºF) | Temperature (ºF) | Stream Temp.[1] | WLA[2] | | WLA[3] | at Discharge |
| | (Default) | (Site-specific data) | (ºF) | (Million BTUs/day) | | (ºF) | Flow (MGD) |
| Jan 1-31 | 35 | 0 | 40 | N/A -- Case 2 | | 50.3 | 0.06 |
| Feb 1-29 | 35 | 0 | 40 | N/A -- Case 2 | | 51.3 | 0.06 |
| Mar 1-31 | 40 | 0 | 46 | N/A -- Case 2 | | 73.1 | 0.06 |
| Apr 1-15 | 47 | 0 | 52 | N/A -- Case 2 | | 82.1 | 0.06 |
| Apr 16-30 | 53 | 0 | 58 | N/A -- Case 2 | | 88.1 | 0.06 |
| May 1-15 | 58 | 0 | 64 | N/A -- Case 2 | | 83.8 | 0.06 |
| May 16-30 | 62 | 0 | 72 | N/A -- Case 2 | | 105.0 | 0.06 |
| Jun 1-15 | 67 | 0 | 80 | N/A -- Case 2 | | 105.2 | 0.06 |
| Jun 16-30 | 71 | 0 | 84 | N/A -- Case 2 | | 109.2 | 0.06 |
| Jul 1-31 | 75 | 0 | 87 | N/A -- Case 2 | | 100.2 | 0.06 |
| Aug 1-15 | 74 | 0 | 87 | N/A -- Case 2 | | 98.8 | 0.06 |
| Aug 16-31 | 74 | 0 | 87 | N/A -- Case 2 | | 98.8 | 0.06 |
| Sep 1-15 | 71 | 0 | 84 | N/A -- Case 2 | | 93.2 | 0.06 |
| Sep 16-30 | 65 | 0 | 78 | N/A -- Case 2 | | 87.2 | 0.06 |
| Oct 1-15 | 60 | 0 | 72 | N/A -- Case 2 | | 81.3 | 0.06 |
| Oct 16-31 | 54 | 0 | 66 | N/A -- Case 2 | | 75.3 | 0.06 |
| Nov 1-15 | 48 | 0 | 58 | N/A -- Case 2 | | 68.3 | 0.06 |
| Nov 16-30 | 42 | 0 | 50 | N/A -- Case 2 | | 58.3 | 0.06 |
| Dec 1-31 | 37 | 0 | 42 | N/A -- Case 2 | | 49.8 | 0.06 |

[1] This is the maximum of the WWF WQ criterion or the ambient temperature. The ambient temperature may be either the design (median) temperature for WWF, or the ambient stream temperature based on site-specific data entered by the user. A minimum of 1ºF above ambient stream temperature is allocated.

[2] The WLA expressed in Million BTUs/day is valid for Case 1 scenarios, and disabled for Case 2 scenarios.

[3] The WLA expressed in ºF is valid only if the limit is tied to a daily discharge flow limit (may be used for Case 1 or Case 2). WLAs greater than 110ºF are displayed as 110ºF.

## C. Toxics Screening Analysis Spreadsheet

**TOXICS SCREENING ANALYSIS**
**WATER QUALITY POLLUTANTS OF CONCERN**
**VERSION 2.7**

Facility: **StoneRidge Retirement Home** NPDES Permit No.: **PA0262170** Outfall: **001**
Analysis Hardness (mg/L): **100** Discharge Flow (MGD): **0.06** Analysis pH (SU): **7**
Stream Flow, $Q_{7-10}$ (cfs): **0.13**

| | Parameter | Maximum Concentration in Application or DMRs (µg/L) | | Most Stringent Criterion (µg/L) | Candidate for PENTOXSD Modeling? | Most Stringent WQBEL (µg/L) | Screening Recommendation |
|---|---|---|---|---|---|---|---|
| Group 1 | Total Dissolved Solids | | | 500000 | | | |
| | Chloride | | | 250000 | | | |
| | Bromide | | | N/A | | | |
| | Sulfate | | | 250000 | | | |
| Group 2 | Total Aluminum | | | 750 | | | |
| | Total Antimony | | | 5.6 | | | |
| | Total Arsenic | | | 10 | | | |
| | Total Barium | | | 2400 | | | |
| | Total Beryllium | | | N/A | | | |
| | Total Boron | | | 1600 | | | |
| | Total Cadmium | | | 0.271 | | | |
| | Total Chromium | | | N/A | | | |
| | Hexavalent Chromium | | | 10.4 | | | |
| | Total Cobalt | | | 19 | | | |
| | Total Copper | | | 9.3 | | | |
| | Free Available Cyanide | | | 5.2 | | | |
| | Total Cyanide | | | N/A | | | |
| | Dissolved Iron | | 60 | 300 | No | | |
| | Total Iron | | | 1500 | | | |
| | Total Lead | | | 3.2 | | | |
| | Total Manganese | | | 1000 | | | |
| | Total Mercury | | | 0.05 | | | |
| | Total Nickel | | | 52.2 | | | |
| | Total Phenols (Phenolics) | | | 5 | | | |
| | Total Selenium | | | 5.0 | | | |
| | Total Silver | | | 3.8 | | | |
| | Total Thallium | | | 0.24 | | | |
| | Total Zinc | | | 119.8 | | | |
| | Total Molybdenum | | | N/A | | | |