

Application Type Renewal
 Facility Type Non-Municipal
 Major / Minor Minor

**NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE**

Application No. PA0052426
 APS ID 627311
 Authorization ID 1293148

Applicant and Facility Information

Applicant Name	<u>Allied Utility Services, Inc.</u>	Facility Name	<u>Schnecksville North STP</u>
Applicant Address	<u>P.O. Box 1488</u> <u>Skippack, PA 19474-1488</u>	Facility Address	<u>Schneck Road & Spruce Street</u> <u>Schnecksville, PA 18078</u>
Applicant Contact	<u>H. James Wilson, Jr.</u>	Facility Contact	<u>H. James Wilson, Jr.</u>
Applicant Phone	<u>(610) 584-3593</u>	Facility Phone	<u>(610) 584-3593</u>
Client ID	<u>76050</u>	Site ID	<u>445481</u>
Ch 94 Load Status	<u>-</u>	Municipality	<u>North Whitehall Township</u>
Connection Status	<u>-</u>	County	<u>Lehigh</u>
Date Application Received	<u>August 10, 2018</u>	EPA Waived?	<u>Yes</u>
Date Application Accepted	<u>October 23, 2019</u>	If No, Reason	<u>-</u>
Purpose of Application	<u>Renewal of existing NPDES permit.</u>		

Summary of Review

The applicant is requesting renewal of their NPDES permit to discharge treated sewage to Tributary 3649 to Coplay Creek, a CWF/MF designated receiving water in state water plan basin 02-C (Lower Lehigh River). As per the Department's current existing use list, the receiving stream does not have an existing use classification that is more protective than its designated use. This segment of the receiving stream is not considered a CWF with naturally reproducing salmonid in early life stages as per the PA Fish & Boat Commission.

The applicant also requested a permit amendment to increase the hydraulic capacity of the WWTP from 0.075 MGD to 0.120 MGD. The renewal and amendment will be processed simultaneously. WQM permit application 3996401A-1 was submitted to rerate the hydraulic capacity of the WWTP and will be issued with the final NPDES permit. As of the date on this fact sheet, the permittee has yet to receive planning approval for the increased capacity. A planning module was received by DEP on January 10, 2020. The final NPDES permit and WQM permit 3996401A-1 cannot be issued until planning is approved. This permit is being drafted assuming approval of the 0.120 MGD flow.

A point of first use (POFU) analysis was conducted by Tim Daley, DEP Aquatic Biologist, on January 28, 2020. It was determined that the stream is perennial at the discharge point, therefore, the POFU is at Outfall 001 on Tributary 3649 to Coplay Creek. The final memo will be attached to the final permit fact sheet addendum.

The Q₇₋₁₀ stream flow to wastewater flow ratio is approximately 1:6 (1 part stream flow, 6 parts wastewater flow). Generally, when the ratio approaches 3:1 (3 parts stream flow, 1 part wastewater flow), wastewater treatment standards found in the Department's *Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers (391-2000-014)* are applied. Since the ratio is significantly less than 3:1, the standards found in that guidance document apply to the expanded discharge. Limitations applied during this renewal are the most stringent of that guidance document, water quality modeling, and Allied's DRBC discharge docket.

Approve	Deny	Signatures	Date
X		/s/ Brian Burden, E.I.T. / Project Manager	February 6, 2020
X		/s/ Amy M. Bellanca, P.E. / Environmental Engineer Manager	February 6, 2020

Summary of Review

Since there are no nearby representative gages to obtain flow data from and the drainage area at Outfall 001 is too small for USGS StreamStats to estimate accurate low flow values (see StreamStats Low Flow attachment), the default LFY of 0.1 cfs/mi² was chosen to model the discharge. For modeling inputs, RMI values were obtained using the "PA Historic Streams" feature of eMapPA as well as the "measure" tool. Drainage areas were delineated using USGS's StreamStats Interactive Map and elevations were obtained using the elevation profile feature of StreamStats (see Watershed Information attachment).

TRC limitations in the previously issued permit were old technology-based limitations (1.2 mg/L monthly average, 2.8 mg/L IMAX). As per PA Code 92a.47(a)(8) (which refers to PA Code 92a.48(b)(2)), a monthly average TRC facility-specific BAT effluent limit of 0.5 mg/L and an IMAX limit of 1.6 mg/L is applied to this permit renewal. These limitations will come into effect 1 year after the Permit Effective Date.

When modeling the discharge using the latest TRC calculation spreadsheet, a monthly average limitation of 0.03 mg/L and an IMAX of 0.11 mg/L was recommended. These water quality-based limitations will come into effect 4 years after the Permit Effective Date. The permittee may conduct site-specific studies to alter the new TRC limitations (see Part C.III). Several factors can change the recommended TRC limitations as calculated by the spreadsheet, such as: chlorine demand of stream, chlorine demand of discharge, and stream flow. Default values for chlorine demand were used to develop the limitations (0.3 mg/L for stream demand, 0 mg/L for discharge demand). The stream flow value was determined by multiplying the drainage area at Outfall 001 (delineated using USGS's StreamStats) by the default LFY of 0.1 cfs/mi².

Water quality modeling (see WQM Modeling attachment) indicated that more stringent summertime limitations are required for Ammonia-Nitrogen (1.7 mg/L average monthly; 3.4 mg/L IMAX). The standard 3x multiplier was used to develop the wintertime limitations (5.1 mg/L average monthly, 10.2 mg/L IMAX). The new limitations for Ammonia-Nitrogen will come into effect 4 years after the permit effective date. The last 2 years of DMR data shows that the Ammonia-Nitrogen concentrations in the effluent were within the new limitations every month. Until the new limitations come into effect, the limitations from the previous permit are carried over.

Limitations for CBOD₅, TSS and Nitrate-Nitrite as N are carried over from the previous permit and were derived from an earlier version of guidance document 391-2000-014. The DO minimum of 6.0 mg/L is required under 391-2000-014 and will come into effect 4 years after the permit effective date. Until then, the previous 3.0 mg/L minimum is carried over from the previous permit. Guidance document 391-2000-014 also recommends TP and TN limitations of 0.5 mg/L and 5.0 mg/L, respectively. Annual average TP and TN concentrations in 2019 were 1.49 mg/L and <8.29 mg/L, respectively. During this permit cycle, monthly monitoring/reporting requirements for TP and TN pollutant concentrations are included in the permit. The latest DRBC docket for the facility requires mass limitations for TP and TN (see below). The receiving stream is not impaired for nutrients or organic enrichment as per the 2018 Integrated Water Quality Report.

The latest DRBC docket (Docket No. D-1996-025 CP-3) includes a 1,000 mg/L quarterly average limitation for Total Dissolved Solids and an 85% minimum removal requirement for CBOD₅. Since influent CBOD₅ must be monitored to make the 85% determination, the previous permit requirement to monitor influent BOD₅ is replaced with influent CBOD₅ monitoring. The sampling frequency for influent CBOD₅ is updated to 1/week to match the effluent sampling frequency. The docket also includes mass limitations for TSS, Ammonia-N, Nitrate-Nitrite as N, Total Phosphorus and Total Nitrogen. These DRBC-required limitations will come into effect on the permit effective date.

To calculate Total Nitrogen, the monitoring/reporting frequency for TKN is updated to 1/week to match the weekly sampling requirement for Nitrate-Nitrite as N.

Limitations for pH and Fecal Coliform are technology-based and carried over from the previous permit. Monthly monitoring/reporting for influent TSS is continued. The sampling frequency for influent TSS remains at 2/month (note that influent CBOD₅ is to be measured 1/week, as described above). 8-hour composite sampling replaces the grab sampling requirement for the influent parameters.

Monitoring frequencies for all parameters with limitations have been updated to the recommended frequencies found in Table 6-3 of DEP's Technical Guidance for the Development and Specification of Effluent Limitations (doc. no. 362-0400-001), unless they were DRBC-initiated limitations. For DRBC-initiated limitations, the monitoring frequencies suggested in the latest docket are applied.

Summary of Review

DMR review of the past 2 years revealed the limitation exceedances from August 2018 listed below. There were no limitation exceedances during the other 23 months. Note that over the past 5 years, flows through the treatment plant were at their highest during August 2018 (0.094 MGD average monthly).

- Dissolved Oxygen: 2.3 mg/L (minimum was 3.0 mg/L)
- Fecal Coliform: >20000 CFU/100mL (IMAX limitation was 1000 CFU/100mL)

The last completed Sewage Sludge / Biosolids Production and Disposal supplemental report from December 2019 states that liquid sludge was hauled to Greater Hazleton Joint Sewer Authority's WWTP via Liquid Motion, Inc.

There are 2 open WPC NPDES violations for the client that would warrant withholding the issuance of the final permit:

- Violation ID 861914, 6/24/2019: Failure to properly operate and maintain all facilities which are installed or used by the permittee to achieve compliance.
- Violation ID 873547, 1/6/2020: Failure to submit NPDES renewal application at least 180 days prior to expiration or later approved date.

WQM permit application 3996401A-1 indicates that effluent flow is metered at the WWTP. As a result, the sample type for flow was changed from "weir" to "metered" and the sampling frequency was updated from "1/week" to "continuous".

Antibacksliding requirements have been met since no effluent limitations were made less stringent or removed from the permit. There is no TMDL for the receiving stream. EPA waiver is in effect.



WQM
Modeling.pdf



TRC Calculation.pdf



Watershed
Information.pdf



StreamStats Low
Flow.pdf



DRBC Docket.pdf

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>0.120</u>
Latitude	<u>40° 40' 38"</u>	Longitude	<u>-75° 36' 24"</u>
Quad Name	<u>Cementon</u>	Quad Code	<u>1341</u>
Wastewater Description: <u>Sewage Effluent</u>			
Receiving Waters	<u>Tributary 3649 to Coplay Creek</u>	Stream Code	<u>3649</u>
NHD Com ID	<u>26293043</u>	RMI	<u>0.66</u>
Drainage Area	<u>0.32 mi²</u>	Yield (cfs/mi ²)	<u>0.1</u>
Q ₇₋₁₀ Flow (cfs)	<u>0.032</u>	Q ₇₋₁₀ Basis	<u>Default LFY</u>
Elevation (ft)	<u>610</u>	Slope (ft/ft)	<u>0.021</u>
Watershed No.	<u>2-C</u>	Chapter 93 Class.	<u>CWF/MF</u>
Existing Use	<u>-</u>	Existing Use Qualifier	<u>-</u>
Exceptions to Use	<u>-</u>	Exceptions to Criteria	<u>-</u>
Assessment Status	<u>Attaining Use(s)</u>		
Cause(s) of Impairment	<u>-</u>		
Source(s) of Impairment	<u>-</u>		
TMDL Status	<u>-</u>	Name	<u>-</u>
Background/Ambient Data		Data Source	
pH (SU)	<u>-</u>		<u>-</u>
Temperature (°F)	<u>-</u>		<u>-</u>
Hardness (mg/L)	<u>-</u>		<u>-</u>
Other:	<u>-</u>		<u>-</u>
Nearest Downstream Public Water Supply Intake	<u>LCA Allentown Division</u>		
PWS Waters	<u>Lehigh River</u>	Flow at Intake (cfs)	<u>103 (using default LFY)</u>
PWS RMI	<u>17.1</u>	Distance from Outfall (mi)	<u>~15.3</u>

Changes Since Last Permit Issuance: WQM Permit application 3996401A-1 submitted on 11/26/2019 for WWTP re-rate to 0.120 MGD.

Treatment Facility Summary				
Treatment Facility Name: Schnecksville North STP				
WQM Permit No.		Issuance Date		
3996401A-1		To be issued with final NPDES permit		
Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Modified Ludzak-Ettinger Activated Sludge	Hypochlorite	0.052 (2017)
Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.120	350	Not Overloaded	Sludge Holding Tank	Hauled

Changes Since Last Permit Issuance: WQM Permit application 3996401A-1 submitted on 11/26/2019 for WWTP re-rate to 0.120 MGD.

Development of Effluent Limitations

Outfall No. 001
 Latitude 40° 40' 38"
 Wastewater Description: Sewage Effluent

Design Flow (MGD) 0.120
 Longitude -75° 36' 24"

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
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)
	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)
	10,000 / 100 ml	IMAX	-	92a.47(a)(5)

Water Quality-Based Limitations

The following limitations were determined through water quality modeling:

Parameter	Limit (mg/l)	SBC	Model	
CBOD ₅ (5/1 – 10/31)	10.0	Average Monthly	Previous Modeling	
	20.0	IMAX		
CBOD ₅ (11/1 – 4/30)	20.0	Average Monthly		
	40.0	IMAX		
CBOD ₅ Minimum Removal	85%	Average Monthly Minimum	DRBC Docket D-1996-025 CP-3	
Total Suspended Solids	10.0	Average Monthly	Previous Modeling	
	20.0	IMAX		
	11.45 lbs/day	Average Monthly	DRBC Docket D-1996-025 CP-3	
Nitrate-Nitrite as N	10.0	Average Monthly	Previous Modeling	
	20.0	IMAX		
	7.21 lbs/day	Average Monthly	DRBC Docket D-1996-025 CP-3	
Ammonia-Nitrogen (5/1 – 10/31)	1.7	Average Monthly	2020 WQM 7.0 Modeling	
	3.4	IMAX		
Ammonia-Nitrogen (11/1 – 4/30)	5.1	Average Monthly		
	10.2	IMAX		
Ammonia-Nitrogen	1.74 lbs/day	Average Monthly		DRBC Docket D-1996-025 CP-3
Dissolved Oxygen	6.0	Minimum		DEP Doc. No. 391-2000-014
Total Residual Chlorine	0.03	Average Monthly	2020 TRC Calculation Spreadsheet	
	0.11	IMAX		
Total Phosphorus	3.50 lbs/day	Average Monthly	DRBC Docket D-1996-025 CP-3	
Total Nitrogen	11.13 lbs/day	Average Monthly	DRBC Docket D-1996-025 CP-3	
Total Dissolved Solids	1,000	Average Quarterly	DRBC Docket D-1996-025 CP-3	

Comments: The Ammonia-Nitrogen, Dissolved Oxygen and Total Residual Chlorine limitations will come into effect 4 years from the permit effective date.