

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

**NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE**

Application No. PA0209651
APS ID 1002897
Authorization ID 1290492

Applicant and Facility Information

Applicant Name	<u>Columbia Investment Corporation</u>	Facility Name	<u>Country Terrace Estates WWTF</u>
Applicant Address	<u>6009 Columbia Boulevard</u> <u>Bloomsburg, PA 17815-8800</u>	Facility Address	<u>Reagan Trail</u> <u>Bloomsburg, PA 17815</u>
Applicant Contact	<u>Frank C. Baker</u>	Facility Contact	<u>Frank C. Baker</u>
Applicant Phone	<u>570-387-0902</u>	Facility Phone	<u>570-387-0902</u>
Client ID	<u>6750</u>	Site ID	<u>241646</u>
Ch 94 Load Status	<u>N/A</u>	Municipality	<u>Main Township</u>
Connection Status	<u>N/A</u>	County	<u>Columbia</u>
Date Application Received	<u>September 26, 2019</u>	EPA Waived?	<u>Yes</u>
Date Application Accepted	<u>October 09, 2019</u>	If No, Reason	<u>N/A</u>
Purpose of Application	<u>Renewal of NPDES Permit</u>		

Summary of Review

INTRODUCTION

The Columbia Investment Corporation (CIC) has proposed the renewal of the existing National Pollution Discharge Elimination System (NPDES) authorizing the discharge from the on-site wastewater treatment facility (WWTF) serving the Country Terrace Estates Park in Main Township, Columbia County.

APPLICATION

The CIC submitted the "National Pollution Discharge Elimination System (NPDES) Application for Individual Permit to Discharge Sewage Effluent from Minor Sewage Facilities" (DEP #3800-PM-BPNPSM0342b). This application was received by the Department on September 26, 2019 and was considered administratively complete on October 09, 2019. The client and site contact is Frank C. Baker, Owner and Operator. His contact information is (phone) 570-387-0902, (fax) 570-387-0163 and (email) frankcbaker@outlook.com.

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.

The case file, permit application package and the draft permit will be available for public review at the Department's Northcentral Regional Office. The address is 208 West Third Street, Suite 101, Williamsport, PA 17701. An appointment can be made to review these materials during the comment period by calling the file coordinator at 570-327-3636.

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APPROVE	DENY	SIGNATURES		DATE
X		Jeffrey J. Gocek, EIT	<i>Jeffrey J. Gocek</i> Project Manager	08/13/2020
X		Nicholas W. Hartranft, PE	<i>Nicholas W. Hartranft</i> Environmental Engineer Manager	08/13/2020

DISCHARGE, RECEIVING WATERS AND WATER SUPPLY INFORMATION

Outfall No.	001	Design Flow (MGD)	0.0165
Latitude	40° 59' 24.66"	Longitude	-76° 23' 28.26"
Quad Name	Catawissa	Quad Code	1134
Wastewater Description:	Sewage Effluent		
Receiving Waters	UNT to Catawissa Creek (CWF)	Stream Code	27539
NHD Com ID	65640553	RMI	0.23
Drainage Area	0.34	Yield (cfs/mi ²)	0.1869
Q ₇₋₁₀ Flow (cfs)	0.064	Q ₇₋₁₀ Basis	USGS Gage #01442500
Elevation (ft)	659	Slope (ft/ft)	N/A
Watershed No.	5-E	Chapter 93 Class.	CWF
Existing Use	None	Existing Use Qualifier	N/A
Exceptions to Use	None	Exceptions to Criteria	None
Assessment Status	Attaining Use(s)		
Cause(s) of Impairment	N/A		
Source(s) of Impairment	N/A		
TMDL Status	Final (04/09/2003)	Name	Catawissa Creek
Nearest Downstream Public Water Supply Intake	Catawissa Borough Municipal Water Authority		
PWS Waters	Catawissa Creek	Flow at Intake (cfs)	28
PWS RMI	1.0	Distance from Outfall (mi)	6.11

Q_{7,10} Determination

The Q_{7,10} is the lowest seven consecutive days of flow in a 10-year period and is used for modeling wastewater treatment plant discharges. 25 PA § 96.1 defines Q_{7,10} as "the actual or estimated lowest seven consecutive day average flow that occurs once in 10 years for a stream with unregulated flow or the estimated minimum flow for a stream with regulated flow".

Basin characteristics, for a watershed based on the discharge location, were obtained from the USGS StreamStats webpage. Based on those characteristics (at the last renewal), an appropriate reference gage was selected utilizing the USGS' *Pennsylvania Baseline Streamflow Estimator (BaSE)*. This reference gage is USGS #01442500 (Brodhead Creek at Minisink Hills, PA). A Q_{7,10} flow for that gage and drainage area were obtained from "*Selected Streamflow Statistics for Streamflow Locations in and near Pennsylvania*" (USGS Open Files Report 2011-1070). Knowing the drainage area at the discharge (0.34 mi²) and both the drainage area (259 mi²) and the Q_{7,10} (48.4 CFS) at the reference gage, the Q_{7,10} at the discharge was calculated to be 0.064 CFS.

See Attachment 01 for the Q_{7,10} determination.

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TREATMENT FACILITY SUMMARY

The CIC owns and operates the WWTF serving the modular home development known as Country Terrace Estates.

See Attachment 02 for a map of the WWTP location.

The treatment system consists of a bar screen, an aeration tank, a clarifier, an erosion chlorinator, a chlorine contact tank, dechlorination, and a flow meter prior to the outfall. Sludge, prior to disposal, is stored in a sludge holding tank (aerobic digestion).

WWTP characteristics are as follows.

Waste Type	Degree of Treatment	Process Type	Disinfection	Annual Average Design Flow (MGD)
Sewage	Secondary	Extended Aeration	Erosion Chlorination	0.0165
Hydraulic Capacity (MGD)	Organic Capacity (lbs BOD5/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.0165	27.7	N/A	Storage	Hauled Away

The annual average flow for the year prior to application submission (2018) was 0.0047 MGD. The month of highest flow during that year was January with 0.0054 MGD.

The wastewater treatment facilities described above were approved by the Department in Water Quality Management (WQM) permit #1998404, issued on September 1, 1998.

COMPLIANCE HISTORY

The WMS Query *Open Violations for Client by Permit Number* revealed no open violations for the CIC.

The most recent Department inspection, a compliance evaluation inspection (CEI), was conducted February 07, 2020. At the time of the inspection, all required treatment units appeared online and operational. No sample was collected. No violations were noted during this inspection. Effluent was clear with fine solids. Due to recent rain, no impact to the receiving stream could be identified from high flows and high turbidity.

Recent Discharge Monitoring Report (DMR) data, from July 2019 to June 2020, is presented in the table below.

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Parameter	JUN-20	MAY-20	APR-20	MAR-20	FEB-20	JAN-20	DEC-19	NOV-19	OCT-19	SEP-19	AUG-19	JUL-19
Flow (MGD) Average Monthly	0.004	0.0049	0.0051	0.0049	0.0048	0.0056	0.0062	0.0055	0.0061	0.0045	0.0045	0.0044
Flow (MGD) Daily Maximum	0.0048	0.0056	0.0057	0.0059	0.0057	0.0069	0.0078	0.0063	0.0074	0.0057	0.0049	0.0047
pH (S.U.) Minimum	7.0	7.1	7.1	7.1	7.1	7.0	7.1	7.0	7.0	7.1	7.1	7.1
pH (S.U.) Maximum	7.4	7.4	7.3	7.4	7.6	7.4	7.3	7.5	8.0	7.7	7.7	7.7
DO (mg/L) Minimum	0.98	0.98	0.95	0.97	0.99	0.98	0.98	0.97	0.96	0.97	0.91	0.97
TRC (mg/L) Average Monthly	0.16	0.17	0.18	0.16	0.14	0.17	0.17	0.16	0.16	0.15	0.16	0.14
TRC (mg/L) Instantaneous Maximum	0.19	0.23	0.25	0.21	0.18	0.21	0.23	0.20	0.21	0.19	0.20	0.18
CBOD5 (mg/L) Average Monthly	2.5	< 2.2	< 2.1	4.7	< 2.2	< 1.8	< 2.2	< 2.2	< 2.1	< 2.0	< 2.1	2.2
TSS (mg/L) Average Monthly	5.5	11.0	6.0	19.0	< 4.0	< 4.0	6.0	4.0	17.5	4.0	11.0	15.0
Fecal Coliform (No./100 ml) Geometric Mean	1.7	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1.4	< 1.0	< 1.0
Fecal Coliform (No./100 ml) Instantaneous Maximum	2.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	2.0	< 1.0	< 1.0
Total Nitrogen (mg/L) Average Monthly							43.2					
Ammonia (mg/L) Average Monthly	0.70	2.30	1.00	5.70	0.14	0.18	0.13	0.32	0.20	0.18	0.58	1.40
Total Phosphorus (mg/L) Average Monthly							4.4					
Total Aluminum (mg/L) Average Monthly							< 0.05					
Total Iron (mg/L) Average Monthly							< 0.07					
Total Manganese (mg/L) Average Monthly							0.0353					

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EXISTING PERMIT LIMITATIONS

The following limitations were established at the last renewal issuance which occurred January 26, 2015.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass (lb/day)		Concentration (mg/L, unless noted)				Minimum Measurement Frequency	Required Sample Type
	Average Monthly	Maximum Daily	Minimum	Average Monthly	Maximum Daily	Instant. Maximum		
Flow	Report	Report	XXX	XXX	XXX	XXX	1/Week	Meter
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	5/Week	Grab
Total Residual Chlorine	XXX	XXX	XXX	0.37	XXX	1.2	5/Week	Grab
Dissolved Oxygen	XXX	XXX	Monitor	XXX	XXX	XXX	5/Week	Grab
Fecal Coliform (#/100mL) 05/01-09/30	XXX	XXX	XXX	200	XXX	1,000	2/Month	Grab
Fecal Coliform (#/100mL) 10/01-04/30	XXX	XXX	XXX	2,000	XXX	10,000	2/Month	Grab
CBOD ₅	XXX	XXX	XXX	25	XXX	50	2/Month	Grab
Total Suspended Solids	XXX	XXX	XXX	30	XXX	60	2/Month	Grab
Ammonia-N 05/01-10/31	XXX	XXX	XXX	5.2	XXX	10	2/Month	Grab
Ammonia-N 11/01-04/30	XXX	XXX	XXX	15	XXX	30	2/Month	Grab
Total Nitrogen	XXX	XXX	XXX	Report	XXX	XXX	1/Year	Grab
Total Phosphorus	XXX	XXX	XXX	Report	XXX	XXX	1/Year	Grab
Total Aluminum	XXX	XXX	XXX	Report	XXX	XXX	1/Year	Grab
Total Iron	XXX	XXX	XXX	Report	XXX	XXX	1/Year	Grab
Total Manganese	XXX	XXX	XXX	Report	XXX	XXX	1/Year	Grab

DEVELOPMENT OF EFFLUENT LIMITATIONS

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)

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Total Residual Chlorine

The Department's *TRC_CALC spreadsheet* is a model used to evaluate Total Residual Chlorine (TRC) effluent limitations. This model determines applicable acute and chronic wasteload allocations (WLAs) for TRC based on the data supplied by the user and then compares the WLAs to the technology-based average monthly limit using the procedures described in the EPA Technical Support Document (for Water Quality-based Toxics Control).

Parameter	Effluent Limitations (mg/L)	
	Monthly Average	IMAX
Total Residual Chlorine	0.376	1.228

See Attachment 03 for the TRC_CALC output.

Water Quality-Based Limitations

CBOD₅, NH₃-N and DO

WQM 7.0 for Windows is a DEP computer model used to determine wasteload allocations and effluent limitations for CBOD₅, NH₃-N and DO for single and multiple point source discharge scenarios. This model simulates two basic processes. The NH₃-N module simulates the mixing and degradation of NH₃-N in the stream and compares calculated instream NH₃-N concentrations to the water quality criteria. The DO module simulates the mixing and consumption of DO in the stream due to degradation of CBOD₅ and NH₃-N and compares the calculated instream DO concentrations to the water quality criteria. The model then determines the highest pollutant loading the stream can assimilate and still meet water quality under design conditions.

This model recommended the following limitations.

Parameter	Effluent Limitations (mg/L)		
	30 Day Average	Maximum	Minimum
CBOD ₅	25		
NH ₃ -N	7.38	14.76	
DO			3.0

The Department only incorporates a water quality-based DO limitation when the model recommends a limitation which exceeds that of the in-stream target criteria. As an existing discharge to a Cold Water stream, with a target in-stream criteria of 6.0 mg/L DO, the model did not recommend a DO effluent limit greater than the target in-stream criteria.

See Attachment 04 for the WQM model output.

Best Professional Judgment (BPJ) Limitations

In the absence of applicable effluent guidelines for the discharge or pollutant, permit writers must identify and/or develop needed technology-based effluent limitations (TBELs) on a case-by-case basis (best professional judgment (BPJ)), in accordance with the statutory factors specified in the Clean Water Act.

A minimum limitation of 4.0 mg/L will be established as BPJ. This value was selected since the receiving stream is protected for Cold Water Fishes (CWF) and Migratory Fishes (MF) and allows the Department to ensure adequate operation and maintenance of the WWTF.

Anti-Backsliding

In order to comply with 40 CFR § 122.44(l) (anti-backsliding requirements), the Department must issue a renewed permit with limitations as stringent as that of the previous permit.

The above modeled NH₃-N limitations are less stringent than the existing WQBELs of 5.2 mg/L monthly average (summer) and 10 mg/L instantaneous maximum (summer). DMR data shows the facility can meet the existing NH₃-N limitations, which will remain in the permit.

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RECEIVING STREAMStream Characteristics

The receiving stream is an Unnamed Tributary to Catawissa Creek. According to 25 PA § 93.9K, this stream is protected for Cold Water Fishes (CWF) and Migratory Fishes (MF). These are the streams *Designated Uses*, which are defined in 25 PA § 93.1 as “those uses specified in §§ 93.9a – 93.9z for each waterbody or segment whether or not the use is being attained”. Designated uses are regulations promulgated by the Environmental Quality Board (EQB) throughout the rulemaking process. This stream currently has no *Existing Use*. Existing Use is defined in 25 PA § 93.1 as “those uses actually attained in the waterbody on or after November 28, 1975 whether or not they are included in the water quality standards”.

It is located in Drainage List K and State Water Plan 5E (Catawissa Creek). It is identified by stream code 27539.

Total Maximum Daily Load

The receiving stream, an Unnamed Tributary to Catawissa Creek, is tributary to Catawissa Creek (see above). Catawissa Creek, protected for Trout Stock Fishes (TSF) and Migratory Fishes (MF), is considered impaired by the Department. This indicates that this stream is not meeting its designated uses. Because of that, a Total Maximum Daily Load (TMDL) was finalized for this waterbody on March 1, 2003. A TMDL sets a ceiling on the pollutant loads that can enter a waterbody so that the waterbody will meet water quality standards. This TMDL was approved by EPA on April 9, 2003. The cause of the impairment is Metals and Low pH, while the source of the impairment is Abandoned Mine Drainage.

DEVELOPMENT OF EFFLUENT MONITORING

In the above mentioned TMDL, this facility is not identified as a significant source of impairment and has, accordingly, not received a wasteload allocation. It is not expected to make significant contribution to the impairment and consistently meets the pH limitations. Monitoring of the TMDL pollutants of concern (Al, Fe and Mn) will be required, in accordance with 40 CFR § 122.44(d)(1)(vii)(B), to ensure that this discharge is not contributing to the impairment of this waterbody. Once per year monitoring will be required.

REMOVAL OF EFFLUENT MONITORINGChesapeake Bay TMDL

Despite 25 years of extensive restoration efforts, the Chesapeake Bay Total Maximum Daily Load (TMDL) was prompted by insufficient progress and continued poor water quality in the Chesapeake Bay and its tidal tributaries. This TMDL, required by the Clean Water Act, is the largest ever developed by the Environmental Protection Agency (EPA). This document identifies the necessary pollution reductions of nitrogen, phosphorus and sediment across Delaware, Maryland, New York, Virginia, West Virginia, District of Columbia and Pennsylvania. It also sets pollution limits necessary to meet applicable water quality standards in the Bay, tidal rivers and embayments.

Pennsylvania explains how and when it will meet its pollution allocations in its Watershed Implementation Plan (WIP), which is incorporated into the TMDL. Pennsylvania’s permitting strategy for significant dischargers has been outlined in the Phase I WIP and incorporated in the Phase II WIP by reference, and imposes Total Nitrogen (TN) and Total Phosphorus (TP) cap loads on the significant dischargers.

Because the design of this facility is less than 0.2 MGD, the Department considers this an existing Phase 5 sewage facility for the purposes of implementing the Chesapeake Bay TMDL. This system has a design flow of 0.0165 MGD. According to the Department’s Wastewater Supplement to Phase III WIP (last revised December 17, 2019), renewed Phase 5 facilities are required to contain monitoring and reporting for TN and TP throughout the permit term at a frequency of no less than annually, unless two years of data has been collected.

Nutrient data was collected during the previous permit term. This data is summarized below.

Year	Total Nitrogen (mg/L)	Total Phosphorus (mg/L)
2017	22.5	2.85
2018	22.0	3.84
2019	43.2	4.40

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ADDITIONAL CONSIDERATIONSHauled-In Wastes

According to the application materials, the Country Terrace WWTF has not received hauled-in wastes during the past three years and does not anticipate receiving hauled-in wastes in the next five years.

Whole Effluent Toxicity (WET) Testing

According to the application materials, the Country Terrace WWTF does not accept wastewater from industrial users. Because of this, a WET test evaluation is not required.

Rounding of Limitations

Limitations have been rounded in accordance with the Department's *Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits* (#362-0400-001).

Limit Multipliers

The instantaneous maximum limitations have been calculated using multipliers of 2.0 (for conventional pollutants) and 2.5 (for toxic pollutants) for determining the monthly average. This practice is in accordance with the Department's *Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits* (#362-0400-001).

Sample Frequencies and Types

The sample type and minimum measurement frequencies are in accordance with the Department's *Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits* (#362-0400-001).

Standard Operating Procedures (SOPs)

The review of this permit application was performed in accordance with the Department's *SOP for New and Reissuance Sewage Individual NPDES Permit Applications* and *SOP for Establishing Effluent Limitations for Individual Sewage Permits* (SOP #BPNPSM-PMT-033).

Special Permit Conditions

Stormwater Prohibition
Approval Contingencies
Proper Waste Disposal
Municipal Facilities Availability
Solids Management

Supplemental Discharge Monitoring Reports

Daily Effluent Monitoring
Non-Compliance Reporting
Biosolids Production and Disposal
Hauled-in Municipal Waste
Influent and Process Control
Lab Accreditation

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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.

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

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass (lb/day)		Concentration (mg/L, unless noted)				Minimum Measurement Frequency	Required Sample Type
	Average Monthly	Maximum Daily	Minimum	Average Monthly	Maximum Daily	Instant. Maximum		
Flow	Report	Report	XXX	XXX	XXX	XXX	Continuous	Meter
pH (S.U.)	XXX	XXX	6.0 Instant Min	XXX	XXX	9.0	1/Day	Grab
Total Residual Chlorine	XXX	XXX	XXX	0.37	XXX	1.2	1/Day	Grab
Dissolved Oxygen	XXX	XXX	4.0 Instant Min	XXX	XXX	XXX	1/Day	Grab
Fecal Coliform (#/100mL) 05/01-09/30	XXX	XXX	XXX	200 Geometric Mean	XXX	1,000	2/Month	Grab
Fecal Coliform (#/100mL) 10/01-04/30	XXX	XXX	XXX	2,000 Geometric Mean	XXX	10,000	2/Month	Grab
CBOD ₅	XXX	XXX	XXX	25	XXX	50	2/Month	Grab
Total Suspended Solids	XXX	XXX	XXX	30	XXX	60	2/Month	Grab
Ammonia-N 05/01-10/31	XXX	XXX	XXX	5.2	XXX	10	2/Month	Grab
Ammonia-N 11/01-04/30	XXX	XXX	XXX	15	XXX	30	2/Month	Grab
Total Aluminum	XXX	XXX	XXX	Report Daily Max	XXX	XXX	1/Year	Grab
Total Iron	XXX	XXX	XXX	Report Daily Max	XXX	XXX	1/Year	Grab
Total Manganese	XXX	XXX	XXX	Report Daily Max	XXX	XXX	1/Year	Grab

END of Fact Sheet.