pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southeast Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0053244**
Wastewater Type	**Sewage**	APS ID	**1028170**
Facility Type	**SFTF**	Authorization ID	**1335653**

NPDES PERMIT FACT SHEET
INDIVIDUAL SFTF/SRSTP

Applicant, Facility and Project Information

Applicant Name	**Charles Adcock Dba The Valley Queen**	Facility Name	**Valley Queen Apt STP**
Applicant Address	13 Bennington Place	Facility Address	1058 Little Road
	Newtown, PA 18940-1701		Washington Crossing, PA 18977
Applicant Contact	Charles Adcock	Facility Contact	Charles Adcock
Applicant Phone	(215) 669-9054	Facility Phone	(215) 669-9054
Client ID	277211	Site ID	236837
SIC Code	4952	Municipality	Upper Makefield Township
SIC Description	Trans. & Utilities - Sewerage Systems	County	Bucks
Date Application Received	December 4, 2020	WQM Required	No
Date Application Accepted	Not Applicable	WQM App. No.	N/A

Project Description: Permit Renewal.

Summary of Review

This application was received to renew a NPDES permit. This is a Small Flow Treatment Facility (SFTF) with a design flow of 1,400 gallons per day (gpd), which is discharged to Houghs Creek (WWF). The limitations, monitoring frequency and sample type are the same in this renewal as the existing permit, except for Dissolved oxygen (DO) which was increased from 3 mg/l to 4 mg/l. An evaluation of eDMR data indicates the facility can meet the more stringent DO limitation.

The treatment plant is Norweco package treatment plant consisting of a primary scum baffle, aeration tank, clarifier, two sand filters, and a chlorination tank. The plant was permitted around 1990.

Act 14 Notifications:
Upper Makefield Twp: Received 11-13-2020
Bucks County: Received 11-10-2020

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		Harmonie Hawley, PhD, PE / Environmental Engineering Specialist /s/	December 15, 2020
X		Pravin C. Patel, P.E. / Environmental Engineer Manager /s/	12/15/2020

Discharge and Stream Data – Receiving Waters and PWS

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	001	Design Flow (MGD)	.0014
Latitude	40º 17' 3.54"	Longitude	-74º 52' 52.28"
Quad Name	Lambertville	Quad Code	1646
Wastewater Description:	Effluent		
Receiving Waters	Houghs Creek (WWF, MF)	Stream Code	02958
NHD Com ID	26043928	RMI	1.5 miles
Drainage Area	3.49 square miles	Yield (cfs/mi^2)	0.015
Q_{7-10} Flow (cfs)	0.0528	Q_{7-10} Basis	PA Streamstats
Elevation (ft)	85.3	Slope (ft/ft)	0.00458
Watershed No.	2-E	Chapter 93 Class.	WWF
Assessment Status	Attaining Use(s)		
Cause(s) of Impairment	None		
Source(s) of Impairment	N/A		
TMDL Status	None	Name	N/A
Background/Ambient Data		Data Source	
pH (SU)	7	TRG WQM (391-2000-007 default data)	
Temperature (°F)	68 (20 °C)	TRG WQM (391-2000-007 default data)	
Nearest Downstream Public Water Supply Intake		None downstream on Houghs Creek	

Changes Since Last Permit Issuance: Not Applicable

Other Comments: None

Compliance History	
Summary of DMRs:	A review of the past 2 years of eDMR data was conducted (Attachment A). There were several times that the flowrates were above permitted flows, but it was noted in the Inspection Report that those were due to Covid restrictions.
Summary of Inspections:	No violations were noted.

Other Comments: No open violations by client number or permit number were found in WMS. The most recent inspection was conducted on 9/17/2020 by DEP Water Quality Specialist B. Krasnisky.

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 (GPD)	Report	XXX	XXX	XXX	XXX	XXX	1/month	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	2/month	Grab
DO	XXX	XXX	4.0 Inst Min	XXX	XXX	XXX	2/month	Grab
TRC	XXX	XXX	XXX	0.5	XXX	1.2	2/month	Grab
CBOD5	XXX	XXX	XXX	25.0	XXX	50	1/month	8-Hr Composite
TSS	XXX	XXX	XXX	30.0	XXX	60	1/month	8-Hr Composite
Fecal Coliform (No./100 ml)	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/month	Grab
Ammonia Nov 1 - Apr 30	XXX	XXX	XXX	20.0	XXX	40	1/month	8-Hr Composite
Ammonia May 1 - Oct 31	XXX	XXX	XXX	8.0	XXX	16	1/month	8-Hr Composite

Compliance Sampling Location: Outfall 001

Other Comments: No changes were made to the sampling type or minimum measurement frequency in this permit renewal. The TRC spreadsheet was run (Attachment B) and resulted are the same TRC limitations as the existing permit. The TBEL for pH is above 6.0 and below 9.0 S.U. (40 CFR §133.102(c) and Pa Code 25 § 95.2(1)) which are existing limits and will be carried over. The existing limit for TSS of 30 mg/L average monthly will remain in the permit based on the minimum level of effluent quality attainable by secondary treatment, 25 Pa. Code § 92a.47 and 40CFR 133.102(b). The fecal coliform limit in the current permit is consistent with 25 Pa. code § 92a.47 and the SOP and will be carried over. The existing CBOD5 and NH3-N limits will be retained in this permit.

The DO was raised from an instantaneous minimum of 3.0 mg/l to 4.0 mg/l. A review of DMRs from the past two (2) years indicate that the facility can meet 4.0 mg/l. Pa Code 25 Chapter 93.7 requires a minimum DO of 5.0 mg/l for WWF. However, this system doesn't have a mechanism to control the DO in the effluent; therefore, it is recommended that existing limits will be increased to 4 which is consistent with other permits and the facility can meet the more stringent limit.

Reference
SOP: New and Reissuance Small Flow Treatment Facility Individual NPDES Permit Applications (SOP No. BCW-PMT-003, revised May 17, 2019)

Attachment A

	Oct-20	Sep-20	Aug-20	Jul-20	20-Jun	20-May	20-Apr	20-Mar	20-Feb	20-Jan	19-Dec	19-Nov	19-Oct
DO mg/l	8.42	7.43	4.84	4.7	7.37	6.86	8.35	7.7	9.85	10.41	9.32	9.9	8.68
pH min	6.7	6.76	6.7	6.61	6.54	6.99	6.9	7.04	7.08	6.94	7.01	7.55	7.08
pH max	7.28	7.3	7	7.13	7.6	7.49	7.6	7.28	7.52	7.6	7.55	7.6	7.64
TSS avg	<1	3	<1	5	<1	2	2	<1	1	<1	<1	<1	<1.0
TSS imax													
NH3-N avg	<.1	<0.1	<.1	<0.1	<0.1	<0.1	<.1	<.1	<0.1	<1	<0.1	<0.1	<0.1
NH3-N imax													
TRC avg	0.5	<0.3	0.1	0.2	0.2	0.3	0.1	<0.02	<0.1	<0.1	<0.01	<0.04	0.04
TRC imax	1.05	1.13	0.43	0.49	0.4	0.62	0.2	0.07	0.17	0.22	0.32	0.1	0.09
CBOD5 avg	16	4.2	4	<2	7.5	<2	4.3	<2	<2	<2	<2	5.5	<2
CBOD5 imax													
Fecal avg	<2	<2	<2	<2	<2	<2	10	<2	<2	<2	5	<2	<2
Fecal imax	<2	<2	<2	<2	<2	<2	10	<2	<2	<2	5	<2	<2
Flow gpd	357.1	6892.4	804	1987.4	1557.943	1903	1803.3	1146	1426	1127	30949.5	1102	1365

	19-Sep	19-Aug	19-Jul	19-Jun	19-May	19-Apr	19-Mar	19-Feb	19-Jan	18-Dec	18-Nov	18-Oct
DO mg/l	7.99	7.64	7.21	6.55	7.07	8.81	9.8	11.2	9.91	8.83	8.26	8.03
pH min	7.05	6.84	7.1	6.94	7.13	7.03	6.68	6.86	7.08	6.72	6.84	6.99
pH max	7.42	7.47	7.31	7.22	7.25	7.36	7.4	7.41	7.49	7.38	7.31	7.55
TSS avg	<1	<1	3	<1	<1	2	<1	<1	1	<1	2	<1
TSS imax												
NH3-N avg	<0.1	<0.1	<0.1	<0.1	<0.1	<.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
NH3-N imax												
TRC avg	<0.1	<.1	<0.1	0.1	0.01	<0.01	<0.04	0.1	0.21	0.1	0.04	<0.1
TRC imax	0.16	0.15	0.3	0.15	0.19	0.02	0.11	0.12	0.46	0.2	0.33	0.09
CBOD5 avg	<2	<2	<2	<2	<2	<2	9	<2	<2	2	5	3
CBOD5 imax												
Fecal avg	<2	<2	8	<2	5	92	<2	<2	<2	<2	3	<2
Fecal imax	<2	<2	8	<2	5	92	<2	<2	<2	<2	3	<2
Flow gpd	1220	844	550	824.684	711	929.9	970	641	704	683	517	15017

Attachment B

Copy of TRC_CALC

TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9

0.0528	= Q stream (cfs)	0.5	= CV Daily
0.0014	= Q discharge (MGD)	0.5	= CV Hourly
4	= no. samples	1	= AFC_Partial Mix Factor
0.3	= Chlorine Demand of Stream	1	= CFC_Partial Mix Factor
0	= Chlorine Demand of Discharge	15	= AFC_Criteria Compliance Time (min)
0.5	= BAT/BPJ Value	720	= CFC_Criteria Compliance Time (min)
0	= % Factor of Safety (FOS)		=Decay Coefficient (K)

Source	Reference	AFC Calculations	Reference	CFC Calculations
TRC	1.3.2.iii	WLA afc = 7.796	1.3.2.iii	WLA cfc = 7.593
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373	5.1c	LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc= 2.905	5.1d	LTA_cfc = 4.414

Source		Effluent Limit Calculations	
PENTOXSD TRG	5.1f	AML MULT = 1.720	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.500	BAT/BPJ
		INST MAX LIMIT (mg/l) = 1.170	

WLA afc	(.019/e(-k*AFC_tc)) + [(AFC_Yc*Qs*.019/Qd*e(-k*AFC_tc))...
	...+ Xd + (AFC_Yc*Qs*Xs/Qd)]*(1-FOS/100)
LTAMULT afc	EXP((0.5*LN(cvh^2+1))-2.326*LN(cvh^2+1)^0.5)
LTA_afc	wla_afc*LTAMULT_afc
WLA_cfc	(.011/e(-k*CFC_tc) + [(CFC_Yc*Qs*.011/Qd*e(-k*CFC_tc))...
	...+ Xd + (CFC_Yc*Qs*Xs/Qd)]*(1-FOS/100)
LTAMULT_cfc	EXP((0.5*LN(cvd^2/no_samples+1))-2.326*LN(cvd^2/no_samples+1)^0.5)
LTA_cfc	wla_cfc*LTAMULT_cfc
AML MULT	EXP(2.326*LN((cvd^2/no_samples+1)^0.5)-0.5*LN(cvd^2/no_samples+1))
AVG MON LIMIT	MIN(BAT_BPJ,MIN(LTA_afc,LTA_cfc)*AML_MULT)
INST MAX LIMIT	1.5*((av_mon_limit/AML_MULT)/LTAMULT_afc)