pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Northwest Regional Office
CLEAN WATER PROGRAM

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Application Type	**Renewal**	Application No.	**PA0102610**
Facility Type	**Non-Municipal**	APS ID	**583311**
Major / Minor	**Minor**	Authorization ID	**1264310**

Applicant and Facility Information

Applicant Name	**Joseph E. Thrower**	Facility Name	**Villa Vista Estates**
Applicant Address	133 Terra Drive	Facility Address	159 Terra Drive
	Valencia, PA 16059-2637		Valencia, PA 16059-2637
Applicant Contact	Joseph Thrower	Facility Contact	
Applicant Phone		Facility Phone	
Client ID	143138	Site ID	262939
Ch 94 Load Status	Not Overloaded	Municipality	Middlesex Township
Connection Status	No Limitations	County	Butler
Date Application Received	March 5, 2019	EPA Waived?	Yes
Date Application Accepted	March 18, 2019	If No, Reason	

Purpose of Application: Renewal of a NPDES Permit for an existing discharge of treated sewage

Summary of Review

There are no proposed changes to discharge quality or quantity.

Permittee signed up for using the eDMR System on March 11, 2015.

There are currently no open violations listed in EFACTS (10/18/2019).

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		Adam J. Pesek, E.I.T. / Environmental Engineering Specialist	
X		Justin C. Dickey, P.E. / Environmental Engineer Manager	

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	0.0125
Latitude	40º 41' 11"	Longitude	79º 55' 3.4"
Quad Name	Valencia	Quad Code	1306
Wastewater Description:	Treated domestic sewage		
Receiving Waters	Unnamed Tributary to Glade Run	Stream Code	63690
NHD Com ID	126222511	RMI	1.11
Drainage Area	0.041 (perennial conditions)	Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)	0 (dry); 0.000165 (perennial)	Q_{7-10} Basis	Dry Stream; Streamstats
Elevation (ft)	1240	Slope (ft/ft)	
Watershed No.	20-C	Chapter 93 Class.	WWF
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		Name	

Background/Ambient Data		Data Source
pH (SU)	7.0	Default
Temperature (°C)	25	Default (WWF)
Hardness (mg/L)		
Other:		

Nearest Downstream Public Water Supply Intake	PA American Water Company – Ellwood District		
PWS Waters	Connoquenessing Creek	Flow at Intake (cfs)	67
PWS RMI	0.2	Distance from Outfall (mi)	31.8

Changes Since Last Permit Issuance: New Public Water Supply Intake put into service in 2019 which is closer proximity to the discharge than the previous intake (Beaver Falls MA @ Eastvale.

Other Comments: The source of nutrient impairment in the Glade Run watershed is listed as agriculture, which is considered the major source. Sewage discharges are also contributors to the nutrient loads in the watershed and should therefore be monitored at an increased monitoring frequency than sewage discharges to non-nutrient impaired waters for total nitrogen and total phosphorus in accordance with the Department's SOP entitled "Establishing Effluent Limitations for Individual Sewage Permits."

Treatment Facility Summary

Treatment Facility Name: Villa Vista Estates

WQM Permit No.	Issuance Date
1073417 T-1	9/05/2006

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary With Ammonia Reduction	Activated Sludge	Hypochlorite	0.0125

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.0125	50	Not Overloaded	Aerobic Digestion	Landfill

Changes Since Last Permit Issuance:

Other Comments: Treatment consists of chemical addition, aeration, settling, intermittent sand filtration, chlorine disinfection and aerated sludge holding.

Compliance History

DMR Data for Outfall 001 (from September 1, 2018 to August 31, 2019)

Parameter	AUG-19	JUL-19	JUN-19	MAY-19	APR-19	MAR-19	FEB-19	JAN-19	DEC-18	NOV-18	OCT-18	SEP-18
Flow (MGD) Average Monthly	0.0085	0.0011	0.0072	0.00109	0.0085	0.0079	0.0095	0.0095	0.0075	0.0085	0.0082	0.0800
pH (S.U.) Minimum	7.0	7.0	7.0	7.0	7.0	7.0	7.0	6.9	6.9	6.8	7.0	6.9
pH (S.U.) Maximum	7.2	7.1	7.0	7.1	7.1	7.1	8.0	7.1	7.0	7.0	7.1	7.1
DO (mg/L) Minimum	7.51	7.12	6.76	8.12	8.9	10.1	10.22	11.98	11.72	10.18	6.85	6.95
TRC (mg/L) Average Monthly	0.10	0.15	0.18	0.15	0.2	0.18	0.2	0.2	0.2	0.18	0.18	0.1
TRC (mg/L) Instantaneous Maximum	0.10	0.2	0.20	0.20	0.3	0.20	0.2	0.2	0.2	0.2	0.20	0.2
CBOD5 (mg/L) Average Monthly	< 2.0	< 2.0	< 2	2.2	< 2.0	< 2.0	6.2	2.2	< 2.0	< 2	2.2	< 2.0
TSS (mg/L) Average Monthly	9	< 5	5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Fecal Coliform (CFU/100 ml) Geometric Mean	62	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	22
Fecal Coliform (CFU/100 ml) Instantaneous Maximum	385	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	50
Total Nitrogen (mg/L) Average Monthly	10.7	18.6	14.3	36.3	54.9	23.8	21.0	18.9	18.0	10.7	9.79	6.91
Ammonia (mg/L) Average Monthly	< 0.10	1.9	9.6	4.9	3.9	12.9	4.3	3.55	0.14	0.68	1.64	0.10
Total Phosphorus (mg/L) Average Monthly	0.12	0.14	0.10	0.13	0.15	0.15	0.13	0.14	0.13	0.14	0.18	0.48

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0.0125
Latitude 40º 41' 11.00" **Longitude** -79º 55' 3.40"
Wastewater Description: Treated Sewage 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)

Comments:

Water Quality-Based Limitations

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

Parameter	Limit (mg/l)	SBC	Model
None			

Comments: No WQM modeling was done as the existing BPJ/TBELS are considered more stringent than any modeling would calculate.

No TRC modeling was not conducted due to the assumption that any chlorine residual would dissipate prior to reaching perennial stream conditions.

Best Professional Judgment (BPJ) Limitations

Comments: Limits for ammonia nitrogen, CBOD, and TSS come from an earlier version of the Department's "Drainage Swales and Ditches" guidance document. The TRC limit is BAT for dry streams (TRC Implementation Guidance). Dissolved Oxygen limit of a minimum of 4.0 mg/l and monitoring for total nitrogen is in the permit as directed in the Department's SOP "Establishing Effluent Limits for Discharges of Sewage." Total phosphorus limit is derived from the watershed implantation plan for Connoquenessing Creek below the confluence of Slippery Rock Creek.

Anti-Backsliding

N/A

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	1/day	Measured
pH (S.U.)	XXX	XXX	6.0 Daily Min	XXX	9.0 Daily Max	XXX	1/day	Grab
DO	XXX	XXX	4.0 Daily Min	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.5	XXX	0.8	1/day	Grab
CBOD5	XXX	XXX	XXX	10.0	XXX	20	2/month	8-Hr Composite
TSS	XXX	XXX	XXX	10.0	XXX	20	2/month	8-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/month	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/month	Grab
Total Nitrogen	XXX	XXX	XXX	Report	XXX	XXX	1/month	8-Hr Composite
Ammonia Nov 1 - Apr 30	XXX	XXX	XXX	7.5	XXX	15	2/month	8-Hr Composite
Ammonia May 1 - Oct 31	XXX	XXX	XXX	2.5	XXX	5	2/month	8-Hr Composite
Total Phosphorus	XXX	XXX	XXX	2.0	XXX	4	2/month	8-Hr Composite

Compliance Sampling Location: Outfall 001 (after disinfection)