Pennsylvania Department of Environmental Protection

Southeast Regional Office
CLEAN WATER PROGRAM

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Application Type	**Amendment, Major**	Application No.	**PA0036200 A-1**
Facility Type	**Non-Municipal**	APS ID	**1121866**
Major / Minor	**Minor**	Authorization ID	**1499861**

Applicant and Facility Information

Applicant Name	**Radley Run Mews Sewer Assoc**	Facility Name	**Radley Run Mews STP**
Applicant Address	PO Box 84	Facility Address	Queens Way
	Pocopson, PA 19366-0084		West Chester, PA 19382
Applicant Contact	Greg Pikul	Facility Contact	Dave Scholl
Applicant Phone	(732) 742-6152	Facility Phone	(610) 413-6764
Client ID	66964	Site ID	452778
Ch 94 Load Status	Not Overloaded	Municipality	Birmingham Township
Connection Status		County	Chester
Date Application Received	August 28, 2024	EPA Waived?	No
Date Application Accepted	September 26, 2024	If No, Reason	DEP Discretion

Purpose of Application: Amendment to replace chlorine disinfection with UV disinfection.

Summary of Review

On behalf of Radley Run Mews Sewer Association, Spotts, Stevens and McCoy submitted the NPDES Permit Amendment Application for the addition of an Ultraviolet (UV) Disinfection System at the Radley Run Mews' STP located in Birmingham Township, Chester County

Radley Run Mews currently owns and operates a STP, which is operated under NPDES Permit No. PA0036200 and WQM Permit No. 1524402. The Radley Run Mews STP has a design capacity of 32,000 Gallons per Day (GPD) and currently treats domestic wastewater that is generated by the approximately 200 residents of the Mews at Radley Run. Wastewater is treated and is discharged to Plum Run, which is designated as Warm Water Fishery (WWF) and Migratory Fishery (MF). In 2023, the STP treated an annual average of 9,900 GPD.

Radley Run Mews is proposing the addition of an Ultraviolet (UV) Disinfection System to replace the existing chlorine contact tank (CCT). The UV System would be installed adjacent to the CCT, and the existing tank will be kept in place for backup treatment. This tank will be filled with potable water and can be maintained as a standby disinfection tank if needed at a later date. The proposed UV system is an open channel gravity flow Trojan System Model US3000 PTP, or alternate system Glasco Glow-300-2 (or a similar system with the same design criteria). The Trojan UV System is designed for 54,000 Gallons per Day (GPD) at 55% UVT, and a peak flow of 74,000 GPD at 65% UVT. This addition is being proposed only to allow Radley Run Mews to continue providing adequate wastewater treatment services, and the project does not involve any addition or changes to the existing treatment capacity.

Proposed monitoring requirements are carried over from current permit, with the addition of once per year E. Coli monitoring in accordance with SOP and PA Code 92a.61. TRC and UV dosage monitoring requirements are tiered with tentative completion of UV disinfection system construction date, 2/1/2025. Once construction is complete, daily UV dosage monitoring begins and TRC monitoring is required daily when CCT is in use.

Approve	Deny	Signatures	Date
X		Christian French Christian French / Environmental Engineering Specialist	October 15, 2024
X		Pravin Patel Pravin Patel / Environmental Engineer Manager	October 15, 2024

Summary of Review

WQM Permit No. 1524402 was amended for addition of UV treatment system May 29, 2024.

Act 14 Notification – Birmingham Township – February 2, 2024

Act 14 Notification – Chester County – February 2, 2024

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.	001	Design Flow (MGD)	.032
Latitude	39º 54' 58.77"	Longitude	-75º 37' 36.72"
Quad Name		Quad Code	
Wastewater Description:	Sewage Effluent		
Receiving Waters	Plum Run (WWF, MF)	Stream Code	
NHD Com ID	26106686	RMI	0.2400
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	3-H	Chapter 93 Class.	WWF, MF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	FLOW REGIME MODIFICATION, FLOW REGIME MODIFICATION, SILTATION, SILTATION, SILTATION, SILTATION		
Source(s) of Impairment	AGRICULTURE, AGRICULTURE, URBAN RUNOFF/STORM SEWERS, URBAN RUNOFF/STORM SEWERS, URBAN RUNOFF/STORM SEWERS, URBAN RUNOFF/STORM SEWERS		
TMDL Status	Final	Name	Christina River Basin

Treatment Facility Summary

Treatment Facility Name: Radley Run Mews STP

WQM Permit No.	Issuance Date
1524402 A-1	5/29/24

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

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.032	67.8	Not Overloaded		Other WWTP

Changes Since Last Permit Issuance:

Other Comments:

Compliance History

DMR Data for Outfall 001 (from September 1, 2023 to August 31, 2024)

Parameter	AUG-24	JUL-24	JUN-24	MAY-24	APR-24	MAR-24	FEB-24	JAN-24	DEC-23	NOV-23	OCT-23	SEP-23
Flow (MGD) Average Monthly	0.010	0.009	0.010	0.009	0.015	0.012	0.012	0.014	0.013	0.009	0.010	0.014
pH (S.U.) Instantaneous Minimum	6.9	6.8	6.8	6.9	6.7	6.8	6.9	6.8	6.7	6.6	6.7	6.7
pH (S.U.) Instantaneous Maximum	7.3	7.3	7.8	7.5	7.3	7.5	7.4	7.5	7.3	7.3	7.4	7.1
DO (mg/L) Instantaneous Minimum	3.2	3.2	3.5	4.5	4.2	6.0	3.5	5.9	5.1	4.3	4.2	3.4
TRC (mg/L) Average Monthly	0.04	0.04	0.04	0.04	0.04	0.10	0.1	0.1	0.04	0.1	0.1	0.1
CBOD5 (lbs/day) Average Monthly	< 0.3	< 0.2	< 0.1	< 0.2	0.3	0.3	< 0.1	0.5	1.2	0.3	0.5	< 0.3
CBOD5 (mg/L) Average Monthly	< 2	< 2	< 3	< 2	3	3	< 2	3	11	3	4	< 3
BOD5 (lbs/day) Raw Sewage Influent Average Monthly	71	71	8	39	20	13	12	28	16	20	23	30
BOD5 (mg/L) Raw Sewage Influent Average Monthly	458	687	198	463	162	119	172	165	263	215	179	236
TSS (lbs/day) Average Monthly	< 0.6	< 0.3	0.3	0.5	1.5	< 0.9	0.4	1.9	2.7	0.7	2.0	< 0.9
TSS (lbs/day) Raw Sewage Influent Average Monthly	144	135	12	60	26	14	13	28	20	33	42	168
TSS (mg/L) Average Monthly	< 5	< 4	8	7	12	< 7	6	11	13	8	15	< 9

TSS (mg/L) Raw Sewage Influent Average Monthly	894	1322	310	706	208	126	192	160	340	341	314	1134
Fecal Coliform (No./100 ml) Geometric Mean	8	129	183	18	< 1	< 26	57	5	59	11	2	64
Fecal Coliform (No./100 ml) Instantaneous Maximum	20	7000	712	20	1	3400	3300	53	168	116	3	588
Total Nitrogen (lbs/day) Average Monthly	5.6	3.6	1.8	3.1	3.8	3.0	2.0	4.5	4.5	3.8	4.7	4.4
Total Nitrogen (mg/L) Average Monthly	37.8	43	41.8	40.4	28.3	28.2	28.9	27.4	32.0	40.7	36.2	36.4
Ammonia (lbs/day) Average Monthly	< 0.01	< 0.01	< 0.004	< 0.01	< 0.01	< 0.01	< 0.01	< 0.02	< 0.02	0.04	< 0.03	< 0.01
Ammonia (mg/L) Average Monthly	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.5	< 0.3	< 0.1
Total Phosphorus (lbs/day) Average Monthly	0.37	0.21	0.11	0.27	0.25	0.18	0.09	0.23	0.14	0.20	0.15	0.25
Total Phosphorus (mg/L) Average Monthly	2.5	2.4	2.6	3.4	1.9	1.6	1.3	1.4	0.9	2.0	1.3	2.1

Compliance History

Effluent Violations for Outfall 001, from: October 1, 2023 To: August 31, 2024

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
Fecal Coliform	02/29/24	IMAX	3300	No./100 ml	1000	No./100 ml
Fecal Coliform	07/31/24	IMAX	7000	No./100 ml	1000	No./100 ml
Fecal Coliform	03/31/24	IMAX	3400	No./100 ml	1000	No./100 ml
Total Nitrogen	12/31/23	Avg Mo	32.0	mg/L	30.0	mg/L

Total Nitrogen	12/31/23	Avg Mo	32.0	mg/L	30.0	mg/L
Total Nitrogen	05/31/24	Avg Mo	40.4	mg/L	30.0	mg/L
Total Nitrogen	07/31/24	Avg Mo	43	mg/L	30.0	mg/L
Total Nitrogen	10/31/23	Avg Mo	36.2	mg/L	30.0	mg/L
Total Nitrogen	08/31/24	Avg Mo	37.8	mg/L	30.0	mg/L
Total Nitrogen	11/30/23	Avg Mo	40.7	mg/L	30.0	mg/L
Total Nitrogen	10/31/23	Avg Mo	36.2	mg/L	30.0	mg/L
Total Nitrogen	06/30/24	Avg Mo	41.8	mg/L	30.0	mg/L
Total Phosphorus	08/31/24	Avg Mo	2.5	mg/L	2.0	mg/L
Total Phosphorus	05/31/24	Avg Mo	3.4	mg/L	2.0	mg/L
Total Phosphorus	06/30/24	Avg Mo	2.6	mg/L	2.0	mg/L
Total Phosphorus	07/31/24	Avg Mo	2.4	mg/L	2.0	mg/L

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" (386-0400-001), SOPs and/or BPJ.

Outfall 001, Effective Period: Permit Effective Date through January 31, 2025.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Instantaneous Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (MGD)	Report	XXX	XXX	XXX	XXX	XXX	Continuous	Recorded
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.6	XXX	1.5	1/day	Grab
CBOD5 Nov 1 - Apr 30	15	XXX	XXX	20	XXX	40	2/month	24-Hr Composite
CBOD5 May 1 - Oct 31	7.5	XXX	XXX	10	XXX	20	2/month	24-Hr Composite
TSS	7.5	XXX	XXX	10	XXX	20	2/month	24-Hr Composite
Fecal Coliform (No./100 ml)	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/month	Grab
E. Coli (No./100 ml)	XXX	XXX	Report	XXX	XXX	100	1/year	Grab
Nitrate-Nitrite	7.5	XXX	XXX	10	XXX	20	2/month	24-Hr Composite
Total Nitrogen	15.0	XXX	XXX	10.0	XXX	20	2/month	24-Hr Composite
Ammonia Nov 1 - Apr 30	2.3	XXX	XXX	3.0	XXX	6	2/month	24-Hr Composite

Outfall 001 , Continued (from Permit Effective Date through January 31, 2025)

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Instantaneous Minimum	Average Monthly	Maximum	Instant. Maximum		
Ammonia May 1 - Oct 31	0.8	XXX	XXX	1.0	XXX	2	2/month	24-Hr Composite
Total Phosphorus	0.37	XXX	XXX	0.5	XXX	1	2/month	24-Hr Composite

Compliance Sampling Location: Outfall 001

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" (386-0400-001), SOPs and/or BPJ.

Outfall 001, Effective Period: February 1, 2025 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	Instantaneous Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (MGD)	Report	XXX	XXX	XXX	XXX	XXX	Continuous	Recorded
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.6	XXX	1.5	Daily when Discharging*	Grab
CBOD5 Nov 1 - Apr 30	15	XXX	XXX	20	XXX	40	2/month	24-Hr Composite
CBOD5 May 1 - Oct 31	7.5	XXX	XXX	10	XXX	20	2/month	24-Hr Composite
TSS	7.5	XXX	XXX	10	XXX	20	2/month	24-Hr Composite
Fecal Coliform (No./100 ml)	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/month	Grab
E. Coli (No./100 ml)	XXX	XXX	Report	XXX	XXX	100	1/year	Grab
Nitrate-Nitrite	7.5	XXX	XXX	10	XXX	20	2/month	24-Hr Composite
Total Nitrogen	15.0	XXX	XXX	10.0	XXX	20	2/month	24-Hr Composite
Ammonia Nov 1 - Apr 30	2.3	XXX	XXX	3.0	XXX	6	2/month	24-Hr Composite
Ammonia May 1 - Oct 31	0.8	XXX	XXX	1.0	XXX	2	2/month	24-Hr Composite

Outfall 001 , Continued (from February 1, 2025 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	Instantaneous Minimum	Average Monthly	Maximum	Instant. Maximum		
Total Phosphorus	0.37	XXX	XXX	0.5	XXX	1	2/month	24-Hr Composite
UV Dosage (mjoules/cm²)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Recorded

* Daily TRC monitoring is required only when Chlorine Contact Tank is in use for disinfection.

Compliance Sampling Location: Outfall 001

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" (386-0400-001), 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		
BOD5 Raw Sewage Influent	Report	XXX	XXX	Report	XXX	XXX	2/month	24-Hr Composite
TSS Raw Sewage Influent	Report	XXX	XXX	Report	XXX	XXX	2/month	24-Hr Composite

Compliance Sampling Location: Outfall 001

Pennsylvania
Department of
Environmental Protection

Approve	Deny	Signatures	Date
X		Christian French Christian French / Environmental Engineering Specialist	October 15, 2024
X		Pravin Patel Pravin Patel / Environmental Engineer Manager	October 15, 2024