pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southwest Regional Office
CLEAN WATER PROGRAM

NPDES PERMIT FACT SHEET INDIVIDUAL SEWAGE

Application Type	**DEP-Initiated Major Amendment**	Application No.	**PA0205877 A-1**
Facility Type	**Municipal**	APS ID	**1034107**
Major / Minor	**Minor**	Authorization ID	**1346250**

Applicant and Facility Information

Applicant Name	**Redstone Township Sewer Authority**	Facility Name	**Redstone Township Sewer Authority WWTP**
Applicant Address	1010 Main Street PO Box 753	Facility Address	100 Treatment Plant Road
	Republic, PA 15475-0751		Allison, PA 15475
Applicant Contact	Mr. Mike Cetera	Facility Contact	Same as Applicant
Applicant Phone	(724) 246-8751	Facility Phone	Same as Applicant
Client ID	155156	Site ID	271315
Ch 94 Load Status	Not Overloaded	Municipality	Redstone Township
Connection Status	**No Limitations**	County	Fayette
Date Application Received	March 17, 2021	EPA Waived?	Yes
Date Application Accepted		If No, Reason	

Purpose of Application: A Department Initiated Amendment for the Discharge of Treated Sewage from an Existing Facility.

Summary of Review

NPDES Permit No.PA0205877 was issued on December 23, 2018 and expires on December 31, 2023. Effluent limitations for Outfall 001 were determined using an effluent discharge rate of 0.45 & 0.60 MGD.

The receiving stream is to Dunlap Creek, which is classified as a WWF located in State Watershed 19-C.

WQM No. 2698401 approves a WWTP with a hydraulic design capacity of 0.45 MGD and consists of SBRs with UV disinfection. WQM Permit No. 2698401 A-2 is currently under Department review and approves plat expansion to 0.60 MGD. The expected project completion date is July 1, 2023.

On March 11, 2021, Central Office reached out to SW Regional Office to request that the DO Limitation Coding for this facility be updated in WMS. Upon further review it was determined that DO limitations were improperly implemented and that changes to the interim and final permit effective periods were needed to the Applicants NPDES Permit. A Department Initiated Amendment Auth. was generated.

The previous NPDES Fact Sheet, dated September 27, 2018, imposed a DO limit based upon Chapter 93 Standards of 7-day Average of 5.5mg/l Minimum of 5.0. This is not consistent with current SOPs or Department Policy.

Attached WQM 7.0 Modeling Data shows that no WQBEL for DO is necessary.

Best Professional Judgment (BPJ) Limitations

Approve	Deny	Signatures	Date
X		William C. Mitchell, E.I.T. / Project Manager	April 1, 2021
X		Christopher Kriley, P.E. / Program Manager	April 1, 2021

Summary of Review

Comments: A Dissolved Oxygen minimum limitation of 4.0 mg/L will be implemented based on the standard in 25 PA Code Chapter 93 and best professional judgment.

Anti-Backsliding

Section 402(o) of the Clean Water Act (CWA), enacted in the Water Quality Act of 1987, establishes anti-backsliding rules governing two situations. The first situation occurs when a permittee seeks to revise a Technology-Based effluent limitation based on BPJ to reflect a subsequently promulgated effluent guideline which is less stringent. The second situation addressed by Section 402(o) arises when a permittee seeks relaxation of an effluent limitation which is based upon a State treatment standard of water quality standard.

Previous limits can be used pursuant to EPA's anti-backsliding regulation 40 CFR 122.44 (l) *Reissued permits.*

(1) Except as provided in paragraph (l)(2) of this section when a permit is renewed or reissued. Interim effluent limitations, standards or conditions must be at least as stringent as the final effluent limitations, standards, or conditions in the previous permit (unless the circumstances on which the previous permit was based have materially and substantially changed since the time the permit was issued and would constitute cause for permit modification or revocation and reissuance under §122.62).

(2) In the case of effluent limitations established on the basis of Section 402(a)(1)(B) of the CWA, a permit may not be renewed, reissued, or modified on the basis of effluent guidelines promulgated under section 304(b) subsequent to the original issuance of such permit, to contain effluent limitations which are less stringent than the comparable effluent limitations in the previous permit.

(i) Exceptions – A permit with respect to which paragraph (l)(2) of this section applies may be renewed, reissued, or modified to contain a less stringent effluent limitation applicable to a pollutant, if –

(A) Material and substantial alterations or additions to the permitted facility occurred after permit issuance which justify the application of the less stringent effluent limitation;

(B)(1) Information is available which was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and which would have justified to application of a less stringent effluent limitation at the time of permit issuance; or

(2) The Administrator determines that technical mistakes or mistaken interpretations of law were made in issuing the permit under section 402(a)(1)(b)

As discussed above, A Dissolved Oxygen minimum limitation of 4.0 mg/L will be implemented based on the standard in 25 PA Code Chapter 93 and best professional judgment. This technical mistake qualifies the facility to provision to allow less stringent limits pursuant to 40 CFR 122.44 (l)(2)(i)(B)(2).

Changes were made to Pages 2 and 3 of the NPDES Permit. DO Limitations were changed from 5.0 mg/L Inst. Min. & 5.5 mg/L Weekly Average to 4.0 mg/L Inst. Min. Final Effluent Limits, which are based upon an expanded hydraulic design capacity of 0.6 MGD, now become effective on July 1, 2023. This date was provided to the Department by K2 Engineering and is based upon their revised construction schedule.

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.

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 June 30, 2023.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Daily Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	0.45	XXX	XXX	XXX	XXX	XXX	Continuous	Recorded
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	5/week	Grab
DO	XXX	XXX	4.0 Inst Min	XXX	XXX	XXX	5/week	Grab
CBOD5	93.9	140.8	XXX	25.0	40.0	50	1/week	24-Hr Composite
TSS	112.7	169.0	XXX	30.0	45.0	60	1/week	24-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	1/week	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/week	Grab
UV Transmittance (%)	XXX	XXX	Report	XXX	XXX	XXX	5/week	Measured
Ammonia Nov 1 - Apr 30	28.2	42.2	XXX	7.5	11.3	15	1/week	24-Hr Composite
Ammonia May 1 - Oct 31	9.4	14.1	XXX	2.5	3.8	5	1/week	24-Hr Composite

Compliance Sampling Location: Outfall 001

Other Comments: Changes were made to the DO Effluent Limitation.

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: July 1, 2023 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	Weekly Average	Daily Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	0.60	XXX	XXX	XXX	XXX	XXX	Continuous	Recorded
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	4.0 Inst Min	XXX	XXX	XXX	5/week	Grab
CBOD5	125.1	187.6	XXX	25.0	40.0	50	1/week	24-Hr Composite
TSS	150.1	225.1	XXX	30.0	45.0	60	1/week	24-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	1/week	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/week	Grab
UV Transmittance (%)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Measured
Ammonia Nov 1 - Apr 30	37.5	56.2	XXX	7.5	11.3	15	1/week	24-Hr Composite
Ammonia May 1 - Oct 31	12.5	18.7	XXX	2.5	3.8	5	1/week	24-Hr Composite

Compliance Sampling Location: Outfall 001

Other Comments: Changes were made to the DO Effluent Limitation.

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	Weekly Average	Minimum	Average Monthly	Maximum	Instant. Maximum		
BOD5 Raw Sewage Influent	Report	Report	XXX	Report	XXX	XXX	1/week	24-Hr Composite
TSS Raw Sewage Influent	Report	Report	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Total Nitrogen	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	24-Hr Composite
Total Phosphorus	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	24-Hr Composite

Compliance Sampling Location: 001

Other Comments: No Changes to the Limitations Above.

Archived Data Inputs WQM 7.0 - Version 1.0b

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
19C	40140	DUNLAP CREEK	6.411	940.00	33.50	0.00410	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.100	0.00	20.24	0.000	0.000	5.0	0.00	0.00	0.00	0.00	5.00	8.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
Redstone WWTP	PA0205877	0.6000	0.0000	0.0000	0.000	15.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	2.00	10.82	0.00	0.00
NH3-N	7.50	0.56	0.00	0.70

Archived Data Inputs WQM 7.0 - Version 1.0b

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
19C	40140	DUNLAP CREEK	6.031	931.80	33.70	0.00410	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.100	0.00	20.24	0.000	0.000	5.0	0.00	0.00	0.00	0.00	5.00	8.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
		0.0000	0.0000	0.0000	0.000	25.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	3.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
19C	40140	DUNLAP CREEK

RMI	Stream Flow (cfs)	PWS With (cfs)	Net Stream Flow (cfs)	Disc Analysis Flow (cfs)	Reach Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Reach Trav Time (days)	Analysis Temp (°C)	Analysis pH
Q7-10 Flow												
6.411	20.24	0.00	20.24	.9282	0.00410	2.833	14.17	5	0.53	0.044	5.44	7.86
Q1-10 Flow												
6.411	12.95	0.00	12.95	.9282	0.00410	NA	NA	NA	0.42	0.056	5.67	7.80
Q30-10 Flow												
6.411	27.53	0.00	27.53	.9282	0.00410	NA	NA	NA	0.62	0.037	5.33	7.89

WQM 7.0 Modeling Specifications

Parameters	Both	Use Inputted Q1-10 and Q30-10 Flows	☑
WLA Method	EMPR	Use Inputted W/D Ratio	☑
Q1-10/Q7-10 Ratio	0.64	Use Inputted Reach Travel Times	☐
Q30-10/Q7-10 Ratio	1.36	Temperature Adjust Kr	☐
D.O. Saturation	90.00%	Use Balanced Technology	☐
D.O. Goal	5		

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
19C	40140	DUNLAP CREEK

NH3-N Acute Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
6.411	Redstone WWTP	7.89	15	7.89	15	0	0

NH3-N Chronic Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
6.411	Redstone WWTP	1.76	7.5	1.76	7.5	0	0

Dissolved Oxygen Allocations

RMI	Discharge Name	CBOD5		NH3-N		Dissolved Oxygen		Critical Reach	Percent Reduction
		Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)		
6.41	Redstone WWTP	25	25	7.5	7.5	2	2	0	0

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
19C	40140	DUNLAP CREEK

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
6.411	0.600	5.438	7.856
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
14.166	2.833	5.000	0.527
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
3.01	0.541	0.86	0.228
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
10.433	1.964	O'Connor	5
Reach Travel Time (days)			
0.044			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.004	3.00	0.86	10.44
0.009	3.00	0.86	10.45
0.013	3.00	0.86	10.46
0.018	2.99	0.86	10.47
0.022	2.99	0.86	10.48
0.026	2.99	0.86	10.49
0.031	2.98	0.86	10.50
0.035	2.98	0.86	10.50
0.040	2.98	0.86	10.51
0.044	2.97	0.86	10.52

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
19C	40140	DUNLAP CREEK

RMI	Name	Permit Number	Disc Flow (mgd)	Parameter	Effl. Limit 30-day Ave. (mg/L)	Effl. Limit Maximum (mg/L)	Effl. Limit Minimum (mg/L)
6.411	Redstone WWTP	PA0205877	0.600	CBOD5	25		
				NH3-N	7.5	15	
				Dissolved Oxygen			2