pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Northwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0221554**
Facility Type	**Non-Municipal**	APS ID	**1018944**
Major / Minor	**Minor**	Authorization ID	**1319007**

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Bruce Wish Management LP**	Facility Name	**Gateway Commerce Center**
	DBA Wampum Underground Commerce Ctr		DBA Wampum Underground Commerce Ctr
Applicant Address	1605 Old Route 18	Facility Address	1605 Old Rte 18
	Wampum, PA 16157-3417		Wampum, PA 16157
Applicant Contact	Kelly Hare	Facility Contact	Bruce Hairhogger
Applicant Phone	(724) 535-4300	Facility Phone	724-5354300
Applicant E Mail	kellyl@wampumunderground.com	Facility E Mail	bruce@wampumunderground.com
Client ID	279377	Site ID	238976
Ch 94 Load Status	Not Overloaded	Municipality	New Beaver Borough
Connection Status	No Limitations	County	Lawrence
Application Received	June 5, 2020	EPA Waived?	Yes
Application Accepted	July 30, 2020	If No, Reason	

Purpose of Application: NPDES discharge permit renewal.

Summary of Review

In compliance as of December 17. 2015 (late renewal).

No discharge is reported. The facility is a three-cell earthen lined lagoon where the previous renewal estimated the waste sources equaled the system losses. Site location is remote with no auxiliary power available.

Sludge use and disposal description and location(s): Lagoon cell bottoms

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		William H. Mentzer William H. Mentzer, P.E. Environmental Engineering Specialist	May 4, 2021
X		Justin C. Dickey Justin C. Dickey, P.E. Environmental Engineer Manager	May 6, 2021

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	0.0053
Latitude DP	40º 52' 25.50"	Longitude DP	-80º 19' 44.90"
Latitude NHD	40º 52' 21.88"	Longitude NHD	-80º 19' 8.08"
Quad Name	New Castle South	Quad Code	1103
Wastewater Description:	**Treated warehouse washroom wastes**		

Receiving Waters	Unnamed tributary to the Beaver River	Stream Code	unknown
NHD Com ID	123918279	RMI	0.625
Drainage Area	0.0108	Yield (cfs/mi^2)	0
Q_{7-10} Flow (cfs)	0	Q_{7-10} Basis	Dry stream
Elevation (ft)	906.92	Slope (ft/ft)	0.0334
Watershed No.	20-B	Chapter 93 Class.	WWF
Existing Use	**Statewide**	Existing Use Qualifier	none
Exceptions to Use	none	Exceptions to Criteria	none
Comments	Beaver River RMI 15.59 (node RMI 0.56) Drainage 2 244.22 square miles and Elevation 735.86 feet. Downstream via dry swales are a cement works IW and sewage discharges.		

Receiving Waters	Not assessed dry drainage swale		
Beaver R Assessment	Impaired		
Cause(s) of Impairment	unknown, POLYCHLORINATED BIPHENYLS (PCBS)		
Source(s) of Impairment	unknown		
TMDL Status	unknown	Name	
Comments	This discharge should not contain any PCB.		

Background/Ambient Data		Data Source
pH (SU)		
Temperature (°F)		
Hardness (mg/L)		
Other:		

Nearest Downstream Public Water Supply Intake	Beaver Falls Municipal Authority		
PWS Waters	Beaver River	Flow at Intake (cfs)	NA
PWS RMI	3.76	Distance from Outfall (mi)	10.6

Changes Since Last Permit Issuance: none

Other Comments: No downstream impairments are expected.

Treatment Facility Summary				

Treatment Facility Name: Wampum Underground Commerce Center

WQM Permit No.	Issuance Date
365-S-54	July 21, 1966
365-S-54 T-1	September 8, 1985
365-S-54 T-2	April 7, 2000
365-S-54 T-3	October 26, 2010

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Stabilization Lagoon	Hypochlorite	0.0053

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.0053	12.75	Not Overloaded	Anaerobic cell bottom	Off sight

Changes Since Last Permit Issuance: none

Other Comments:

Permitted is a 3-cell earthen lined lagoon.

Originally a sewage treatment facility serving an underground limestone mine. These facilities were abandoned then reactivated to serve an underground storage facility. Later a glass polishing (mirror) and warehouse waste streams were authorized. Both waste streams have been discontinued.

No discharge reported for 2018 through 2020

No sludge removed.

Influent

Parameter	Min	Mean	Max	#
pH	6.88		6.88	1
BOD5	8.16		8.16	1
TSS	6.24		6.24	1
P	0.243		0.243	1
NH3N	1.28		1.28	1
TDS	590		590	1
Coliform	< 1		< 1	1
TKN	6.1		6.1	1
NO3-NO2	0.14		0.14	1
TRC	0.13		0.13	1
DO	6.12		6.12	1

Based on influent concentrations compliance with the effluent limitations is expected.
Nine employees are reported. Estimated current load 315 to 540-gallons based on 35 to 60-gpd/capita*9 capita and 0.8 to 1.1- PPD based on 0.085to 0.12-PPD/capita*9 capita

Compliance History	
Summary of DMRs:	none
Summary of Inspections:	none

Other Comments: S**ome groundwater infiltration is possible**

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** .0053
Latitude 40º 52' 35.50" **Longitude** -80º 19' 44.90"
Wastewater Description: 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)
DO	4.0-mg/L	Daily Minimum		BPJ

Water Quality-Based Limitations

A Sewage program based “Reasonable Potential Analysis” determined the following parameters were candidates for limitations: CBOD5, TSS, nitrogen, phosphorus, ammonia, dissolved oxygen, total residual chlorine, and pH.

The receiving water are a 0.625-mile dry drainage swale flowing to the Beaver River. No aquatic life is assumed in this stream reach. Downstream are a cement plant wastewater and sewage discharges.

A 3-mg/L dry stream DO goal is achievable. At 0.0053-MGD and 0.44-mile downstream the dry stream DO is 5.04-mg/L, CBOD 5 is 8.37-mg/L and ammonia is 12.79-mg/L. At 0.002-MGD the instream data does not change significantly. At 0.0001-MGD a 5-mg/L in stream DO is achievable at the discharge. Monthly monitoring based on the small flow guidance should be acceptable

Also, as the receiving waters are a dry drainage swale no aquatic life is assumed present and no TRC WQ requirements are necessary.

Best Professional Judgment (BPJ) Limitations

Comments: Applied to DO.at 4.0-mg/L.

Additional Considerations

E. Coli monitoring of 1/year has been added based on Ch. 92a.61 and the Department’s Standard Operating Procedure (SOP) for Establishing Effluent Limitations for Individual Sewage Permits (SOP No. CCW-PMT-033, Rev. 3/24/2021, V 1.9) JCD

Anti-Backsliding

Not applicable to TRC as current daily maximum compliance is shown.

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/month	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/month	Grab
DO	XXX	XXX	4.0 Daily Min	XXX	XXX	XXX	1/month	Grab
TRC	XXX	XXX	XXX	0.5	XXX	1.2	1/month	Grab
CBOD5	XXX	XXX	XXX	25.0	XXX	50.0	1/month	Grab
TSS	XXX	XXX	XXX	30.0	XXX	60.0	1/month	Grab
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	1/month	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/month	Grab
E. Coli (No./100 ml)	*XXX*	*XXX*	*XXX*	*XXX*	*XXX*	*Report*	*1/year*	*Grab*
Total Nitrogen	XXX	XXX	XXX	Report	XXX	XXX	1/month	Grab
Ammonia	XXX	XXX	XXX	Report	XXX	XXX	1/month	Grab
Total Phosphorus	XXX	XXX	XXX	Report	XXX	XXX	1/month	Grab

Compliance Sampling Location: Outfall 001 after disinfection

Input Data

WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
20B	33953	BEAVER RIVER	16.215	906.92	0.01	0.00000	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	0.00	0.000	0.000	0.0	0.00	0.00	25.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Disc Conc

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Design Disc Flow (mgd)	Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
Gateway	PA0221554	0.0053	0.0053	0.0053	0.000	25.00	7.00

Parameter Data

Parameter Name	(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	4.00	7.54	0.00	0.00
NH3-N	25.00	0.10	0.00	0.70

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
20B	33953	BEAVER RIVER	15.590	735.86	2244.22	0.00000	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	0.00	0.000	0.000	0.0	0.00	0.00	25.00	7.00	0.00	0.00
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

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
20B	33953	BEAVER RIVER	0.000	693.65	22761.90	0.00000	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 (ºC)	Tributary pH	Stream Temp (ºC)	Stream pH
Q7-10	0.100	0.00	0.00	0.000	0.000	0.0	0.00	0.00	25.00	7.00	0.00	0.00
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 (ºC)	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
20B	33953	BEAVER RIVER

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												
16.215	0.00	0.00	0.00	.0082	0.05184	.306	.6	1.98	0.05	0.760	25.00	7.00
15.590	224.42	0.00	224.42	.0082	0.00051	1.186	274.3	231.24	0.69	1.381	25.00	7.00
Q1-10 Flow												
16.215	0.00	0.00	0.00	.0082	0.05184	NA	NA	NA	0.05	0.778	25.00	7.00
15.590	143.63	0.00	143.63	.0082	0.00051	NA	NA	NA	0.54	1.773	25.00	7.00
Q30-10 Flow												
16.215	0.00	0.00	0.00	.0082	0.05184	NA	NA	NA	0.05	0.743	25.00	7.00
15.590	305.21	0.00	305.21	.0082	0.00051	NA	NA	NA	0.82	1.163	25.00	7.00

WQM 7.0 Modeling Specifications

Parameters	Both	Use Inputted Q1-10 and Q30-10 Flows	☑
WLA Method	Uniform Treatme	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
20B	33953	BEAVER RIVER

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
16.215	Gateway	NA	50	6.76	50	0	0
15.590		NA	NA	6.76	NA	NA	NA

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
16.215	Gateway	NA	25	1.34	25	0	0
15.590		NA	NA	1.34	NA	NA	NA

Dissolved Oxygen Allocations

		CBOD5		NH3-N		Dissolved Oxygen		Critical	Percent
RMI	Discharge Name	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Reach	Reduction
16.22	Gateway	25	25	25	25	4	5	0	0
15.59		NA	NA	NA	NA	NA	NA	NA	NA

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
20B	33953	BEAVER RIVER

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
16.215	0.005	25.000	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
0.604	0.306	1.976	0.050
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
22.32	1.466	22.10	1.029
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
5.296	26.208	Owens	NA

Reach Travel Time (days)

0.760

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.076	19.40	20.44	2.85
0.152	16.87	18.90	3.00
0.228	14.66	17.48	3.46
0.304	12.74	16.17	3.91
0.380	11.08	14.95	4.33
0.456	9.63	13.83	4.70
0.532	8.37	12.79	5.04
0.608	7.27	11.83	5.34
0.684	6.32	10.94	5.62
0.760	5.50	10.11	5.86

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
15.590	0.005	25.000	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
274.297	1.186	231.239	0.690
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
2.00	0.000	0.00	1.029
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
8.243	1.650	Tsivoglou	5

Reach Travel Time (days)

1.381

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.138	2.00	0.00	7.54
0.276	2.00	0.00	7.54
0.414	2.00	0.00	7.54
0.552	2.00	0.00	7.54
0.691	2.00	0.00	7.54
0.829	2.00	0.00	7.54
0.967	2.00	0.00	7.54
1.105	2.00	0.00	7.54
1.243	2.00	0.00	7.54
1.381	2.00	0.00	7.54

WQM 7.0 Effluent Limits

SWP Basin 20B

Stream Code 33953 Stream Name BEAVER RIVER

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)
16.215	Gateway	PA0221554	0.005	CBOD5	25		
				NH3-N	25	50	
				Dissolved Oxygen			5