

Application Type Renewal
Facility Type Municipal
Major / Minor Minor

**NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE**

Application No. PA0026336
APS ID 712357
Authorization ID 1348318

Applicant and Facility Information

Applicant Name	<u>Hopewell Township</u>	Facility Name	<u>Wickham Village STP</u>
Applicant Address	<u>1700 Clark Boulevard</u> <u>Aliquippa, PA 15001</u>	Facility Address	<u>Diamond Street</u> <u>Aliquippa, PA 15001</u>
Applicant Contact	<u>Jamie Yurcina</u>	Facility Contact	<u>Jamie Yurcina</u>
Applicant Phone	<u>(724) 378-1460, ext. 105</u>	Facility Phone	<u>(724) 378-1460, ext. 105</u>
Client ID	<u>110590</u>	Site ID	<u>237430</u>
Ch 94 Load Status	<u>Not Overloaded</u>	Municipality	<u>Hopewell Township</u>
Connection Status	<u>No Limitations</u>	County	<u>Beaver County</u>
Date Application Received	<u>March 29, 2021</u>	EPA Waived?	<u>Yes</u>
Date Application Accepted	<u>April 6, 2021</u>	If No, Reason	<u>-</u>
Purpose of Application	<u>Renewal of an NPDES Permit for an existing discharge of treated sanitary wastewater from a POTW.</u>		

Summary of Review

Act 14 - Proof of Notification was submitted and received.

A Part II Water Quality Management permit is not required at this time.

The applicant should be able to continue to meet the limits of this permit, which will continue to protect the uses of the receiving stream.

I. OTHER REQUIREMENTS:

- A. Stormwater into Sewers
- B. Right of Way
- C. Solids Handling
- D. Effluent Chlorine Optimization and Minimization

SPECIAL CONDITIONS:

- II. Solids Management

There are no open violations in effects associated with the subject Client ID (110590) as of 5/24/2021.

Approve	Deny	Signatures	Date
X		Stephen A. McCauley Stephen A. McCauley, E.I.T. / Environmental Engineering Specialist	5/24/2021
X		Justin C. Dickey Justin C. Dickey, P.E. / Environmental Engineer Manager	5/25/2021

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	<u>010</u>	Design Flow (MGD)	<u>0.12</u>
Latitude	<u>40° 33' 24.00"</u>	Longitude	<u>-80° 15' 15.00"</u>
Quad Name	<u>-</u>	Quad Code	<u>-</u>
Wastewater Description: <u>Sewage Effluent</u>			
Receiving Waters	<u>Unnamed Tributary to the Boggs Run (WWF)</u>	Stream Code	<u>N/A (36643)</u>
NHD Com ID	<u>99683528</u>	RMI	<u>N/A (1.1)</u>
Drainage Area	<u>0.22</u>	Yield (cfs/mi ²)	<u>0.15</u>
Q ₇₋₁₀ Flow (cfs)	<u>0.033</u>	Q ₇₋₁₀ Basis	<u>calculated</u>
Elevation (ft)	<u>1026</u>	Slope (ft/ft)	<u>0.02307</u>
Watershed No.	<u>20-G</u>	Chapter 93 Class.	<u>WWF</u>
Existing Use	<u>-</u>	Existing Use Qualifier	<u>-</u>
Exceptions to Use	<u>-</u>	Exceptions to Criteria	<u>-</u>
Assessment Status	<u>Attaining Use(s)</u>		
Cause(s) of Impairment	<u>-</u>		
Source(s) of Impairment	<u>-</u>		
TMDL Status	<u>-</u>	Name	<u>-</u>
Background/Ambient Data		Data Source	
pH (SU)	<u>-</u>		<u>-</u>
Temperature (°F)	<u>-</u>		<u>-</u>
Hardness (mg/L)	<u>-</u>		<u>-</u>
Other:	<u>-</u>		<u>-</u>
Nearest Downstream Public Water Supply Intake	<u>Creswell Heights Joint Authority</u>		
PWS Waters	<u>Ohio River</u>	Flow at Intake (cfs)	<u>2,940</u>
PWS RMI	<u>965.0</u>	Distance from Outfall (mi)	<u>6.0</u>

Sludge use and disposal description and location(s): Sludge is not used, it is disposed of at an approved landfill.

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.

Narrative: This Fact Sheet details the determination of draft NPDES permit limits for an existing discharge of 0.12 MGD of treated sewage from a municipal STP in Hopewell Township, Beaver County.

Treatment permitted under Water Quality Management Permit No. 0303407 consists of the following: A comminutor with a manual bypass bar screen, SBR tanks with aeration and settling, and ultraviolet (UV) light disinfection. Solids are wasted to an aerobic digester.

1. **Streamflow:**

Ohio River at Sewickley, PA (1935-2008) - USGS Gage 03086000:

Q ₇₋₁₀ :	<u>3,060</u>	cfs	(USGS StreamStats)
Drainage Area:	<u>19,500</u>	sq. mi.	(USGS StreamStats)
Yieldrate:	<u>0.15</u>	cfs/m	calculated

Unnamed Tributary to the Boggs Run at Outfall 001:

Yieldrate:	<u>0.15</u>	cfs/m	calculated above
Drainage Area:	<u>0.22</u>	sq. mi.	(USGS StreamStats)
Q ₇₋₁₀ :	<u>0.033</u>	cfs	calculated

% of stream allocated: 100% Basis: No nearby discharges

2. **Wasteflow:**

Maximum discharge: 0.12 MGD = 0.18 cfs

Runoff flow period: 24 hours Basis: Runoff flow for a municipal STP

There is less than 3 parts stream flow (Q7-10) to 1 part effluent (design flow). However, since this is an existing discharge, the more stringent treatment requirements cannot be achieved, and the receiving stream is not impaired by the discharge, the standards in DEP guidance (391-2000-014) will not be applied.

Flow will be required to be monitored as authorized under Chapter 92a.61, and as recommended in the SOP.

3. **Parameters:**

The following parameters were evaluated: pH, Total Suspended Solids, Fecal Coliform, E. Coli, Total Phosphorus, Total Nitrogen, NH₃-N, CBOD₅, Dissolved Oxygen, Total Residual Chlorine, influent Total Suspended Solids, and influent BOD₅. NH₃-N, CBOD₅, and Dissolved Oxygen were evaluated using WQM 7.0 at the discharge point.

a. pH

Between 6.0 and 9.0 at all times

Basis: Application of Chapter 93.7 technology-based limits. The measurement frequency was previously set to 1/day as recommended in the SOP, based on Table 6-3 in the "Technical Guidance for the Development and Specification of Effluent Limitations" (362-0400-001), which will be retained.

b. Total Suspended Solids

Limits are 30 mg/l as a monthly average and 60 as an instantaneous maximum.

Basis: Application of Chapter 92a47 technology-based limits.

c. Fecal Coliform

05/01 - 09/30: 200/100ml (monthly average geometric mean)
1,000/100ml (instantaneous maximum)

10/01 - 04/30: 2,000/100ml (monthly average geometric mean)
10,000/100ml (instantaneous maximum)

Basis: Application of Chapter 92a47 technology-based limits

d. E. Coli

Monitoring was added for E. Coli at a frequency of 1/quarter.

Basis: Application of Chapter 92a.61 as recommended by the SOP.

e. Phosphorus

- Limit necessary due to:
- Discharge to lake, pond, or impoundment
 - Discharge to stream

Basis: Chapter 96.5 does not apply.

- Limit not necessary

Basis: The previous monitoring for Total Phosphorus will be retained in accordance with the SOP, based on Chapter 92a.61.

f. Total Nitrogen

The previous monitoring for Total Nitrogen will be retained in accordance with the SOP, based on Chapter 92a.61.

g. Ammonia-Nitrogen (NH₃-N)

Median discharge pH to be used: 7.0 Standard Units (S.U.)

Basis: eDMR data

Discharge temperature: 25°C (default value used in the absence of data)

Median stream pH to be used: 7.0 Standard Units (S.U.)

Basis: default value used in the absence of data

Stream Temperature: 25°C (default value used for WWF modeling)

Background NH₃-N concentration: 0.1 mg/l

Basis: Default value.

Calculated NH₃-N Summer limits: 1.7 mg/l (monthly average)
3.4 mg/l (instantaneous maximum)

Calculated NH₃-N Winter limits: 5.1 mg/l (monthly average)
10.2 mg/l (instantaneous maximum)

Result: WQ modeling resulted in the summer limits above (see Attachment 1). The winter limits are calculated as three times the summer limits. Since the newly calculated summer NH₃-N limits are more restrictive than the previous summer limits, but are still attainable based on the eDMR data,

they will be set with this renewal without a compliance schedule. Since the previous winter NH3-N limits are more restrictive, and are being attained, they will be retained.

h. CBOD₅

Median discharge pH to be used: 7.0 Standard Units (S.U.)

Basis: eDMR data

Discharge temperature: 25°C (default value used in the absence of data)

Median stream pH to be used: 7.0 Standard Units (S.U.)

Basis: default value used in the absence of data

Stream Temperature: 25°C (default value used for WWF modeling)

Background CBOD₅ concentration: 2.0 mg/l

Basis: Default value

CBOD₅ Summer limits: 25.0 mg/l (monthly average)

50.0 mg/l (instantaneous maximum)

CBOD₅ Winter limits: 25.0 mg/l (monthly average)

50.0 mg/l (instantaneous maximum)

Result: WQ modeling resulted in the summer limits above (see Attachment 1), which are the same as in the previous permit. The winter limits are calculated as three times the summer limits, but since the technology-based limits would govern, they will be used. Since the summer and winter limits are technology-based, per the SOP, the year-round limit of 25.0 mg/l monthly average and 50.0 mg/l instantaneous maximum will be retained with this renewal.

i. Dissolved Oxygen (DO)

4.0 mg/l - minimum desired in effluent to protect all aquatic life

5.0 mg/l - desired in effluent for CWF, WWF, or TSF

6.0 mg/l - minimum required due to discharge falling under guidance document 391-2000-014

8.0 mg/l - required due to discharge going to a naturally reproducing salmonid stream

Discussion: The Dissolved Oxygen minimum of 5.0 mg/l will be retained with this renewal. The technology-based minimum of 5.0 mg/l is recommended by the WQ Model (see Attachment 1) and the SOP based on Chapter 93.7, under the authority of Chapter 92a.61. The measurement frequency was previously set to 1/day as recommended in the SOP, based on Table 6-3 in the "Technical Guidance for the Development and Specification of Effluent Limitations" (362-0400-001), which will be retained.

j. Total Residual Chlorine (TRC)

No limit necessary

Basis: Monitoring for UV Transmittance (%) will be retained from the previous permit. The measurement frequency was previously set to 1/day as recommended in the SOP, based on Table 6-3 in the "Technical Guidance for the Development and Specification of Effluent Limitations" (362-0400-001), which will be retained.

TRC limits: _____ mg/l (monthly average)
_____ mg/l (instantaneous maximum)

Basis: N/A

k. Anti-Backsliding

Since all the permit limits in this renewal are the same or more restrictive than the previous NPDES Permit, anti-backsliding is not applicable.

4. **Reasonable Potential Analysis for Receiving Stream:**

A Reasonable Potential Analysis was not performed in accordance with State practices for Outfall 001 since no sampling other than sewage-related parameters was performed for this facility with the renewal application.

5. **Reasonable Potential for Downstream Public Water Supply (PWS):**

A Reasonable Potential Analysis, if performed, does not calculate limits for parameters that are based on PWS criteria (TDS, Chloride, Bromide, and Sulfate). Since data was provided, mass-balance calculations were performed to see if monitoring or limits might be necessary.

Nearest Downstream potable water supply (PWS): Creswell Heights Joint Authority

Distance downstream from the point of discharge: 6.0 miles (approximate)

PWS Evaluation:

Stream flow (sf) at the potable water supply intake = 2,940 cfs

Waste flow (wf) from the STP = 0.12 MGD = 0.18 cfs

Total flow = 2,940.18 cfs

Background Concentrations: No data available (assumed zero)

Mass balance for TDS at the potable water supply intake:

$$(sf @ PWS)(bkrd. conc.) + (wf)(x) = (tot. flow)(criteria)$$
$$(2,940 cfs)(0 mg/l) + (0.18 cfs)(x) = (2,940.18 cfs)(500 mg/l)$$

$$x = 8,167,166 mg/l \text{ (renewal application maximum was 491 mg/l - ok)}$$

Mass balance for Chloride at the potable water supply intake:

$$(sf @ PWS)(bkrd. conc.) + (wf)(x) = (tot. flow)(criteria)$$
$$(2,940 cfs)(0 mg/l) + (0.18 cfs)(x) = (2,940.18 cfs)(250 mg/l)$$

$$x = 4,083,583 mg/l \text{ (renewal application maximum was 158 mg/l - ok)}$$

Mass balance for Bromide at the potable water supply intake:

$$(sf @ PWS)(bkrd. conc.) + (wf)(x) = (tot. flow)(criteria)$$
$$(2,940 cfs)(0 mg/l) + (0.18 cfs)(x) = (2,940.18 cfs)(1 mg/l)$$

$$x = 16,334 mg/l \text{ (renewal application maximum was 0.169 mg/l - ok)}$$

Mass balance for Sulfate at the potable water supply intake:

$$(sf @ PWS)(bkrd. conc.) + (wf)(x) = (tot. flow)(criteria)$$
$$(2,940 cfs)(0 mg/l) + (0.18 cfs)(x) = (2,940.18 cfs)(250 mg/l)$$

$$x = 4,083,583 mg/l \text{ (renewal application maximum was 72.2 mg/l - ok)}$$

No limits necessary

Limits needed

Basis: Significant dilution available.

6. Flow Information:

The Wickham Village STP receives 100% of its flow from the Hopewell Township sewers.

All the sewers in the Hopewell Township system are separate sewers.

7. Attachment List:

Attachment 1 - WQ Modeling Printouts

(The Attachments above can be found at the end of this document)

Compliance History

DMR Data for Outfall 010 (from April 1, 2020 to March 31, 2021)

Parameter	MAR-21	FEB-21	JAN-21	DEC-20	NOV-20	OCT-20	SEP-20	AUG-20	JUL-20	JUN-20	MAY-20	APR-20
Flow (MGD) Average Monthly	0.123	0.106	0.091	0.102	0.059	0.056	0.045	0.05	0.051	0.044	0.07	0.138
Flow (MGD) Daily Maximum	0.773	0.501	0.402	0.368	0.143	0.186	0.084	0.132	0.189	0.065	0.18	0.363
pH (S.U.) Minimum	6.79	6.88	6.40	6.81	6.91	6.61	6.96	6.88	6.9	6.88	6.94	6.85
pH (S.U.) Maximum	7.51	7.33	7.49	7.27	7.66	7.86	7.86	7.84	7.81	7.86	7.54	7.31
DO (mg/L) Minimum	6.3	7.1	5.6	5.5	5.2	5.6	5.6	5.4	5.4	5.7	5.5	6.3
CBOD5 (lbs/day) Average Monthly	1.7	2.0	1.6	2.4	1.5	1.2	1.0	0.8	0.8	0.8	1.4	2.5
CBOD5 (lbs/day) Raw Sewage Influent Average Monthly	77	141	95	138	130	106	110	84	66	80	86	117
CBOD5 (lbs/day) Raw Sewage Influent Daily Maximum	102	232	142	222	200	151	149	114	88	135	95	184
CBOD5 (lbs/day) Weekly Average	3.0	2.6	2.1	3.5	1.2	2.0	1.1	0.9	0.8	1.3	2.0	3.5
CBOD5 (mg/L) Average Monthly	2	3	3	3	2	3	3	2	2	2	2	2
CBOD5 (mg/L) Raw Sewage Influent Average Monthly	115	195	149	164	239	262	295	226	195	221	157	101.7
CBOD5 (mg/L) Weekly Average	3	3	4	4	2	4	3	2	3	3	3	2
TSS (lbs/day) Average Monthly	2.0	2.2	2.3	4.5	2.1	1.8	0.8	0.8	0.8	0.7	1.4	2.7
TSS (lbs/day) Raw Sewage Influent Average Monthly	2.0	148	60	111	126	194	111	82	86	68	86	126
TSS (lbs/day) Raw Sewage Influent Daily Maximum	4.5	256	81	164	205	122	147	120	104	102	100	254
TSS (lbs/day) Weekly Average	4.5	3.4	4.6	6.6	2.9	3.1	0.9	0.9	1.0	0.9	2.1	4.5
TSS (mg/L) Average Monthly	2	3	3	5	4	4	2	2	2	2	2	2

**NPDES Permit Fact Sheet
Wickham Village STP**

NPDES Permit No. PA0026336

TSS (mg/L) Raw Sewage Influent Average Monthly	2	196	99	129	226	235	296	219	255	187	155	111
TSS (mg/L) Weekly Average	3	3	5	6	5	6	2	2	3	2	3	3
Fecal Coliform (CFU/100 ml) Geometric Mean	8	10	4	14	10	7	3	4	3	2	2	4
Fecal Coliform (CFU/100 ml) Instantaneous Maximum	23	21	22	28	26	16						6
UV Transmittance (%) Average Monthly	63	60	60	64	99	60	60	60	60	60	60	61
Total Nitrogen (mg/L) Daily Maximum	8.16			0.8			9.58			9.12		
Ammonia (lbs/day) Average Monthly	0.2	0.4	0.3	0.4	0.3	0.2	0.06	0.04	0.07	0.04	0.09	0.2
Ammonia (lbs/day) Weekly Average	0.2	0.7	0.7	0.8	0.3	0.4	0.09	0.08	0.1	0.05	0.2	0.4
Ammonia (mg/L) Average Monthly	0.2	0.5	0.7	0.4	0.4	0.5	0.2	0.1	0.2	0.1	0.1	0.2
Ammonia (mg/L) Weekly Average	0.4	0.9	1.5	0.7	0.5	0.9	0.3	0.2	0.4	0.1	0.2	0.2
Total Phosphorus (mg/L) Daily Maximum	1.62			8.65			3.62			1.73		

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 010, 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	Daily Maximum	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	Continuous	Recorded
pH (S.U.)	XXX	XXX	6.0 Daily Min	XXX	9.0 Daily Max	XXX	1/day	Grab
DO	XXX	XXX	5.0 Daily Min	XXX	XXX	XXX	1/day	Grab
CBOD5 Raw Sewage Influent	Report	Report	XXX	Report	XXX	XXX	1/week	8-Hr Composite
CBOD5	25.0	38.0 Wkly Avg	XXX	25.0	38.0	50	1/week	8-Hr Composite
TSS	30.0	45.0 Wkly Avg	XXX	30.0	45.0	60	1/week	8-Hr Composite
TSS Raw Sewage Influent	Report	Report	XXX	Report	XXX	XXX	1/week	8-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
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/quarter	Grab
UV Transmittance (%)	XXX	XXX	XXX	Report	XXX	XXX	1/day	Measured
Total Nitrogen	XXX	XXX	XXX	Report Daily Max	XXX	XXX	1/quarter	8-Hr Composite
Ammonia-Nitrogen Nov 1 - Apr 30	3.0	4.5 Wkly Avg	XXX	3.0	4.5	6	1/week	8-Hr Composite
Ammonia-Nitrogen May 1 - Oct 31	1.7	2.5 Wkly Avg	XXX	1.7	2.5	3.4	1/week	8-Hr Composite

Outfall010, Continued (from 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	Daily Maximum	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Total Phosphorus	XXX	XXX	XXX	Report Daily Max	XXX	XXX	1/quarter	8-Hr Composite

Compliance Sampling Location: Outfall 001, after ultraviolet (UV) light disinfection.

Flow is monitor only based on Chapter 92a.61. The limits for pH and Dissolved Oxygen are technology-based on Chapter 93.7. The limits for CBOD₅, Total Suspended Solids, and Fecal Coliforms are technology-based on Chapter 92a.47. Monitoring for influent BOD₅ and influent Total Suspended Solids is based on Chapter 92a.61. Monitoring for E. Coli, Total Nitrogen, Total Phosphorus, and UV Dosage is based on Chapter 92a.61. The limits for Ammonia-Nitrogen are water quality-based on Chapter 93.7.

Attachment 1

WQM 7.0 Effluent Limits

<u>SWP Basin</u>		<u>Stream Code</u>		<u>Stream Name</u>			
20G		36643		BOGGS RUN			
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)
1.100	Wickham Village	PA0026336	0.120	CBOD5	25		
				NH3-N	1.7	3.4	
				Dissolved Oxygen			5

WQM 7.0 D.O.Simulation

<u>SWP Basin</u>	<u>Stream Code</u>	<u>Stream Name</u>		
20G	36643	BOGGS RUN		
<u>RMI</u>	<u>Total Discharge Flow (mgd)</u>	<u>Analysis Temperature (°C)</u>		<u>Analysis pH</u>
1.100	0.120	25.000		7.000
<u>Reach Width (ft)</u>	<u>Reach Depth (ft)</u>	<u>Reach WDRatio</u>		<u>Reach Velocity (fps)</u>
3.652	0.421	8.665		0.142
<u>Reach CBOD5 (mg/L)</u>	<u>Reach Kc (1/days)</u>	<u>Reach NH3-N (mg/L)</u>		<u>Reach Kn (1/days)</u>
21.53	1.466	1.44		1.029
<u>Reach DO (mg/L)</u>	<u>Reach Kr (1/days)</u>	<u>Kr Equation</u>		<u>Reach DO Goal (mg/L)</u>
5.489	32.683	Owens		5
<u>Reach Travel Time (days)</u>	Subreach Results			
0.473	<u>TravTime (days)</u>	<u>CBOD5 (mg/L)</u>	<u>NH3-N (mg/L)</u>	<u>D.O. (mg/L)</u>
	0.047	19.73	1.37	6.24
	0.095	18.08	1.31	6.53
	0.142	16.57	1.25	6.70
	0.189	15.18	1.19	6.84
	0.237	13.91	1.13	6.96
	0.284	12.75	1.08	7.07
	0.331	11.68	1.03	7.18
	0.379	10.71	0.98	7.27
	0.426	9.81	0.93	7.36
	0.473	8.99	0.89	7.44

WQM 7.0 Modeling Specifications

Parameters	Both	Use Inputted Q1-10 and Q30-10 Flows	<input checked="" type="checkbox"/>
WLA Method	EMPR	Use Inputted W/D Ratio	<input type="checkbox"/>
Q1-10/Q7-10 Ratio	0.64	Use Inputted Reach Travel Times	<input type="checkbox"/>
Q30-10/Q7-10 Ratio	1.36	Temperature Adjust Kr	<input checked="" type="checkbox"/>
D.O. Saturation	90.00%	Use Balanced Technology	<input checked="" type="checkbox"/>
D.O. Goal	5		

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
20G	36643	BOGGS RUN	1.100	1026.00	0.22	0.00000	0.00	<input checked="" type="checkbox"/>

Stream Data

Design Cond.	LFY	Trib Flow	Stream Flow	Rch Trav Time	Rch Velocity	WD Ratio	Rch Width	Rch Depth	Tributary		Stream	
	(cfsm)	(cfs)	(cfs)	(days)	(fps)		(ft)	(ft)	Temp (°C)	pH	Temp (°C)	pH
Q7-10	0.150	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
Wickham Village	PA0026336	0.1200	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	4.00	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
20G	36643	BOGGS RUN	0.000	892.00	2.38	0.00000	0.00	<input checked="" type="checkbox"/>

Stream Data

Design Cond.	LFY	Trib Flow	Stream Flow	Rch Trav Time	Rch Velocity	WD Ratio	Rch Width	Rch Depth	Tributary		Stream	
	(cfsm)	(cfs)	(cfs)	(days)	(fps)		(ft)	(ft)	Temp (°C)	pH	Temp (°C)	pH
Q7-10	0.150	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

WQM 7.0 Wasteload Allocations

<u>SWP Basin</u>	<u>Stream Code</u>	<u>Stream Name</u>
20G	36643	BOGGS RUN

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
1.100	Wickham Village	11.07	12.33	11.07	12.33	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
1.100	Wickham Village	1.37	1.7	1.37	1.7	0	0

Dissolved Oxygen Allocations

RMI	Discharge Name	<u>CBOD5</u>		<u>NH3-N</u>		<u>Dissolved Oxygen</u>		Critical Reach	Percent Reduction
		Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)		
1.10	Wickham Village	25	25	1.7	1.7	5	5	0	0

WQM 7.0 Hydrodynamic Outputs

<u>SWP Basin</u>		<u>Stream Code</u>				<u>Stream Name</u>						
20G		36643				BOGGS RUN						
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												
1.100	0.03	0.00	0.03	.1856	0.02307	.421	3.65	8.67	0.14	0.473	25.00	7.00
Q1-10 Flow												
1.100	0.02	0.00	0.02	.1856	0.02307	NA	NA	NA	0.14	0.488	25.00	7.00
Q30-10 Flow												
1.100	0.04	0.00	0.04	.1856	0.02307	NA	NA	NA	0.15	0.459	25.00	7.00