

Application Type Renewal  
Facility Type Non-Municipal  
Major / Minor Minor

**NPDES PERMIT FACT SHEET  
INDIVIDUAL SEWAGE**

Application No. PA0217417  
APS ID 833278  
Authorization ID 1281260

**Applicant and Facility Information**

Applicant Name	<u>Kiski Area School District</u>	Facility Name	<u>South Primary School STP</u>
Applicant Address	<u>200 Poplar Street</u> <u>Vandergrift, PA 15690</u>	Facility Address	<u>722 Mamont Drive</u> <u>Export, PA 15632</u>
Applicant Contact	<u>James Perlik</u>	Facility Contact	<u>Gary Miller II</u>
Applicant Phone	<u>(724) 568-3418</u>	Facility Phone	<u>724-568-3623</u>
Client ID	<u>5318</u>	Site ID	<u>253906</u>
Ch 94 Load Status	<u>Not Overloaded</u>	Municipality	<u>Washington Township</u>
Connection Status	<u>No Limitations</u>	County	<u>Westmoreland</u>
Date Application Received	<u>July 22, 2019</u>	EPA Waived?	<u>Yes</u>
Date Application Accepted	<u>July 23, 2019</u>	If No, Reason	<u></u>
Purpose of Application	<u>See below.</u>		

**Summary of Review**

The permittee has applied for a renewal of NPDES Permit No. PA0217417. NPDES Permit No. PA0217417 was previously issued by the PA Department of Environmental Protection (DEP) on February 2, 2015. That permit expired on February 29, 2020.

This draft permit is approved during the Coronavirus pandemic requiring DEP employees to telework. Electronic signatures are considered appropriate for the draft permit documents. An electronic copy of the communication that transmitted approval of the draft permit documents has been saved and is included with the file.

Mr. Gary Miller informed this writer per telephone conversation on July 22, 2020 that electronic submission of the final permit documents is acceptable should the office still be closed.

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		<i>David R. Ponchione</i> David R. Ponchione / Project Manager	July 28, 2020
x		<i>Donald J. Leone</i> Donald J. Leone, P.E. / Environmental Engineer Manager	July 28, 2020
x		<i>Christopher Kriley</i> Christopher Kriley, P.E. / Project Manager	July 28, 2020

**Discharge, Receiving Waters and Water Supply Information**

Outfall No.	001	Design Flow (MGD)	.0046
Latitude	40° 28' 36"	Longitude	-79° 35' 10"
Quad Name	Slickville	Quad Code	1509
Wastewater Description: Sewage Effluent			
Receiving Waters	Unnamed Tributary of Beaver Run (HQ-CWF)	Stream Code	42976
NHD Com ID	125291803	RMI	0.75
Drainage Area	0.1	Yield (cfs/mi <sup>2</sup> )	0.016
Q <sub>7-10</sub> Flow (cfs)	0.0016	Q <sub>7-10</sub> Basis	PA Water Resources Bulletin #12, Sta. #03048300, Beaver Run at Slickville
Slope (ft/ft)	0.025		
Watershed No.	18-B	Chapter 93 Class.	HQ-CWF
Existing Use	All	Existing Use Qualifier	None
Exceptions to Use	None	Exceptions to Criteria	None
Assessment Status	Attaining Use(s) in Receiving Tributary; Impaired in Downstream Watersheds		
Cause(s) of Impairment	Metals in Downstream Kiskiminetas-Conemaugh River Watersheds		
Source(s) of Impairment	Abandoned Mine Drainage in Downstream Kiskiminetas-Conemaugh River Watersheds		
TMDL Status	Final, 01/29/2010	Name	Watersheds TMDL
Nearest Downstream Public Water Supply Intake	Westmoreland County Municipal Authority		
PWS Waters	Beaver Run Reservoir on Beaver Run	Flow at Intake (cfs)	9.9

Changes Since Last Permit Issuance: None

**Compliance History**

**DMR Data for Outfall 001 (from June 1, 2019 to May 31, 2020)**

Parameter	MAY-20	APR-20	MAR-20	FEB-20	JAN-20	DEC-19	NOV-19	OCT-19	SEP-19	AUG-19	JUL-19	JUN-19
Flow (MGD) Average Monthly	0.00001	0.00002	0.0004	0.0005	0.0002	0.0002	0.0007	0.0008	0.0011	0.0004	0.00003	0.0001
Flow (MGD) Daily Maximum	0.0002	0.0001	0.0019	0.001	0.0007	0.0004	0.0015	0.0019	0.0021	0.0019	0.0002	0.0008
pH (S.U.) Minimum	6.9	7.2	7.1	6.4	6.9	6.9	7.2	7.0	7.1	7.1	6.6	7.1
pH (S.U.) Maximum	8.8	8.4	8.4	8.4	8.6	8.5	8.5	8.4	8.5	8.0	7.5	8.5
DO (mg/L) Minimum	8.4	10.3	9.8	11.4	12.0	11.6	10.3	10.0	9.0	8.9	7.1	17.2
TRC (mg/L) Average Monthly	0.01	0.01	0.01	0.01	0.01	0.001	0.001	0.01	0.01	0.001	0.01	0.01
TRC (mg/L) Instantaneous Maximum	0.01	0.01	0.01	0.01	0.01	0.001	0.001	0.01	0.01	0.001	0.01	0.01
CBOD5 (mg/L) Average Monthly	21	13	4	3	5	7	3	6	4	3	6	3
CBOD5 (mg/L) Instantaneous Maximum	21	18	6	3	6	8	3	10	5	3	6	3
TSS (mg/L) Average Monthly	5	5	5	5	5	5	5	5	5	5	6	5
TSS (mg/L) Instantaneous Maximum	5	5	5	5	5	5	5	5	5	5	6	5
Fecal Coliform (CFU/100 ml) Geometric Mean	1	1	7	2	1	1	1	1	1	3	54	1
Fecal Coliform (CFU/100 ml) Instantaneous Maximum	1	1	13	3	1	1	1	1	1	5	54	1
Total Nitrogen (mg/L) Daily Maximum						31.70						
Ammonia (mg/L) Average Monthly	0.8	0.01	0.8	0.8	0.8	1.1	0.8	0.8	0.8	2.4	0.8	0.8
Ammonia (mg/L) Instantaneous Maximum	0.8	0.01	0.8	0.8	0.8	1.3	0.8	0.8	0.8	4.0	0.8	0.8

Total Phosphorus (mg/L) Average Monthly	1.5	2.2	1.8	0.7	0.2	1.4	0.6	1.9	1.3	1.8	2.5	3.0
Total Phosphorus (mg/L) Instantaneous Maximum	1.5	2.3	2.2	0.9	0.3	2.0	0.6	3.1	1.3	2.0	2.5	3.1
Total Aluminum (mg/L) Daily Maximum						0.153						
Total Iron (mg/L) Daily Maximum						0.299						
Total Manganese (mg/L) Daily Maximum						0.121						

**Compliance History**

**Effluent Violations for Outfall 001, from: July 1, 2019 To: May 31, 2020**

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
CBOD5	04/30/20	Avg Mo	13	mg/L	10	mg/L
CBOD5	05/31/20	Avg Mo	21	mg/L	10	mg/L
CBOD5	05/31/20	IMAX	21	mg/L	20	mg/L
Ammonia	08/31/19	Avg Mo	2.4	mg/L	1.5	mg/L
Ammonia	08/31/19	IMAX	4.0	mg/L	3.0	mg/L
Total Phosphorus	10/31/19	Avg Mo	1.9	mg/L	1.0	mg/L
Total Phosphorus	12/31/19	Avg Mo	1.4	mg/L	1.0	mg/L
Total Phosphorus	07/31/19	Avg Mo	2.5	mg/L	1.0	mg/L
Total Phosphorus	08/31/19	Avg Mo	1.8	mg/L	1.0	mg/L
Total Phosphorus	09/30/19	Avg Mo	1.3	mg/L	1.0	mg/L
Total Phosphorus	04/30/20	Avg Mo	2.2	mg/L	1.0	mg/L
Total Phosphorus	03/31/20	Avg Mo	1.8	mg/L	1.0	mg/L

Total Phosphorus	05/31/20	Avg Mo	1.5	mg/L	1.0	mg/L
Total Phosphorus	03/31/20	IMAX	2.2	mg/L	2.0	mg/L
Total Phosphorus	04/30/20	IMAX	2.3	mg/L	2.0	mg/L
Total Phosphorus	07/31/19	IMAX	2.5	mg/L	2.0	mg/L
Total Phosphorus	10/31/19	IMAX	3.1	mg/L	2.0	mg/L

Other Comments: DEP plans to issue a CACP to the permittee. The DMR data shows there are 24 violations since December 2017, with most of the exceedances being within the last year.

According to the Standard Operating Procedure for Clean Water Program New and Reissuance Sewage Individual NPDES Permit Applications Final, November 9, 2012 Revised, January 6, 2020 the application manager must verify that an inspection has occurred in the past five years. Operations Supervisor John Murphy informed this writer that an inspection has not been performed during the past 5 years. Before a CACP is drafted, DEP plans to inspect the plant and issue a Notice of Violation. Mr. Zachary Flannigan was informed by way of email sent July 8, 2020 by Compliance Specialist Jeffrey Kohut that an inspection needed to be performed and a NOV prepared.

According to the SOP, the application manager does not need to wait for the inspection to occur before issuing the permit.

It is hoped by this writer that the inspection will occur during the draft comment period.

Treatment Facility Summary				
<b>Treatment Facility Name:</b> South Primary School STP				
<b>WQM Permit No.</b>		<b>Issuance Date</b>		
6596409		January 13, 1997		
6596401-A1		October 28, 2003		
6596401-A2		June 8, 2015		
<b>Waste Type</b>	<b>Degree of Treatment</b>	<b>Process Type</b>	<b>Disinfection</b>	<b>Avg Annual Flow (MGD)</b>
Sewage	Tertiary	Attached Growth, Fixed Film System	Chlorine with De-chlorination	Year 2017-0.0007 mgd
<b>Hydraulic Capacity (MGD)</b>	<b>Organic Capacity (lbs/day)</b>	<b>Load Status</b>	<b>Biosolids Treatment</b>	<b>Biosolids Use/Disposal</b>
0.0046	12.4	Not Overloaded	Aerobic Digester (Sludge Holding Tank)	(1)

This writer spoke with Mr. Gary Miller of McCutcheon Enterprises on July 22, 2020. Mr. Miller confirmed that the modifications approved by WQM Permit No. 6596409 A-2 were constructed and are operational. He believes the modified plant went on-line in 2016.

The existing plant process consists of an attached growth fixed film process using textile filters as the fixed film media (Advantex Orenco system). A summary of the plant units is as follows:

- Influent bar screen.
- Flow equalization tank. This tank includes two grinder pumps (capacity 11 gal./min. each with one as a backup), which convey the average design flow using timers and floats.
- Primary Sedimentation Tanks. These consist of three units in series with a total of four compartments, and with an effluent cartridge filter.
- Stage 1 Recirculation Tank, with three filter dosing pumps (50 gal./min. capacity each to provide a 4:1 recirculation ratio, with a spare pump) and recirculating valve.
- Stage 1 Textile Filters. These consist of three AX-100 Filter Units, each 100 ft<sup>2</sup> of area.
- Stage 2 Recirculation Tank, with two recirculating pumps (50 gal./min. capacity each to provide a 4:1 recirculation ratio, with one as a backup) and recirculating valve.
- Stage 2 Textile Filter. This consists of one AX-100 Filter Unit, with 100 ft<sup>2</sup> of area.
- Chlorinator, Contact tank, De-chlorinator, Reaeration (Post-Aeration) Tank and Flow Meter;
- Outfall Sewer to Stream.
- Chemical Feeders for alkalinity (caustic soda) for ammonia-nitrogen reduction, and alum for phosphorus reduction, with dual pumps, one as a backup.
- Four existing blowers. The two largest blowers provide 61 cfm each. With the largest blower out of service, the remaining blowers (108 cfm total) meet the plant air demand uses of approx. 45 cfm.
- Aerobic digester, with adjustable decant pipe, and airlift. This tank contains an emergency overflow to the equalization tank.

Information was provided in the Design Report on similarly designed STPs permitted in Pennsylvania and one in Iowa using the Advantex Orenco system show that the NPDES permit effluent limits can be achieved. Mr. Kevin McLeary of our Central Office concurred the use of this system should achieve the required effluent limits.

This writer is concerned an attached growth system will have difficulty consistently achieving the effluent limitations because the filter material takes time to get properly seeded and stay properly seeded which is difficult if flows are not consistently being generated which will be the case when school is not in session.

Audio-visual alarms were approved for the equalization tank pumps, recirculation tank filter dosing pumps, and de-chlorinator low tablet level. The plant is designed with high level overflow lines between the tanks so that flow can be conveyed through the plant by gravity during a power outage. Primary treatment and disinfection will continue to function during a power outage.

- (1) Per telephone discussion with Gary Miller on July 22, 2020, solids are trucked to the McCutcheon Biosolids Facility for further treatment. Treated solids are then transported to the Apollo WWTP.

## Development of Effluent Limitations

**Outfall No.** 001  
**Latitude** 40° 28' 36.00"  
**Wastewater Description:** Sewage Effluent

**Design Flow (MGD)** 0.0046  
**Longitude** -79° 35' 10.00"

### Effluent Limits

WQM 7.0 was previously used to evaluate the design flow of 0.0046 mgd. The limits were previously based on the more stringent of the water quality modeling results, or the Special Protection Waters Implementation Handbook requirements because the discharge is in a high-quality watershed.



Adobe Acrobat  
Document

### 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 <sub>5</sub>	10	Average Monthly		Special Protection Waters Handbook
Total Suspended Solids	10	Average Monthly		Special Protection Waters Handbook
Ammonia-Nitrogen May 1 - Oct 31	1.5	Average Monthly		Special Protection Waters Handbook
Ammonia-Nitrogen Nov 1 - Apr 30	4.5	Average Monthly		Special Protection Waters Handbook
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 Phosphorus	1.0	Average Monthly	-	Special Protection Waters Handbook

### Water Quality-Based Limitations

The following limitations were determined through water quality modeling:

Parameter	Limit (mg/l)	SBC	Model
Dissolved Oxygen	7.0	Minimum	WQM 7.0
Total Residual Chlorine	0.07	Average Monthly	TRC CALC Program

The above technology-based and water quality-based limitations are consistent with the previous permit.

### Phosphorus and Nitrogen

In accordance with applicable regulations, procedures and guidelines, monitoring requirements are imposed for Phosphorus and Nitrogen. A Phosphorus limit from the above Special Protection Waters Implementation Handbook was already included in the NPDES permit and will continue to be included. Monitoring requirements for Nitrogen will also be continued.

**Aluminum (Al), Manganese (Mn), and Iron (Fe)**

The permit will reflect yearly monitoring requirements for the parameters of Aluminum, Iron and Manganese, consistent with the previous permit. The South Primary School STP has been provided a WLA (Waste Load Allocation) in the TMDL (Total Maximum Daily Load for the Kiski-Conemaugh River Basins). It is listed as a negligible discharger in Appendix C of the approved TMDL and is covered under the aggregate WLA for negligible dischargers in Appendix G ("Negligible Discharge Gross WLAs" tab). There is no reasonable potential to expect that a discharge of sewage from an elementary school will exceed the TMDL WLAs for negligible discharges for the abandoned mine drainage parameters. The data from the required effluent monitoring for these parameters in the permit will continue to assist in any revisions to the TMDL in the watersheds as needed.

**Anti-Backsliding**

The current Antidegradation Implementation Guidance (Guidance) supplanted the 1992 Special Protection Waters Implementation Handbook (Handbook). Antidegradation Best Available Combination of Technologies ABACT requirements are defined in the Guidance to help maintain existing water quality. Per the guidance, the average monthly ABACT limitations (mg/l) for a 0.0046 mgd plant are as follows:

CBOD5 (May 1, - Oct. 31)	10
CBOD5 (Nov. 1, - Apr. 30)	20
Suspended Solids	10
NH3-N (May 1 - Oct. 31)	3.0
NH3-N (Nov. 1 - Apr. 30)	9.0

*Disinfection should be accomplished using a method that leaves no detectable residual. Disinfection using ultra-violet light or other non-chlorine-based systems is encouraged and must be considered.*

The STP was designed to meet the limits in the Handbook which are more stringent. The more stringent limitations will better maintain existing water quality. Therefore, anti-backsliding regulations are deemed appropriate and the more stringent limitations will be reapplied.



**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) <sup>(1)</sup>		Concentrations (mg/L)				Minimum <sup>(2)</sup> Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (MGD)	0.0046	XXX	XXX	XXX	XXX	XXX	2/month	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	Daily when Discharging	Grab
DO	XXX	XXX	7.0 Inst Min	XXX	XXX	XXX	Daily when Discharging	Grab
TRC	XXX	XXX	XXX	0.07	XXX	0.16	Daily when Discharging	Grab
CBOD <sub>5</sub>	XXX	XXX	XXX	10.0	XXX	20.0	2/month	Grab
TSS	XXX	XXX	XXX	10.0	XXX	20.0	2/month	Grab
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	XXX	Report Daily Max	XXX	1/year	Grab
Ammonia Nov 1 - Apr 30	XXX	XXX	XXX	4.5	XXX	9.0	2/month	Grab
Ammonia May 1 - Oct 31	XXX	XXX	XXX	1.5	XXX	3.0	2/month	Grab
Total Phosphorus	XXX	XXX	XXX	1.0	XXX	2.0	2/month	Grab
Total Aluminum	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	Grab

**Outfall 001 , Continued (from Permit Effective Date through Permit Expiration Date )**

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) <sup>(1)</sup>		Concentrations (mg/L)				Minimum <sup>(2)</sup> Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum		
Total Iron	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	Grab
Total Manganese	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	Grab

Compliance Sampling Location: Outfall 001

Other Comments:

The effluent limitations for this renewal permit are consistent with the previous permit and are thoroughly explained in the attached Water Quality Protection Report. The attached WQPR includes the modeling results, pertinent guidance’s, and previous fact sheets. Because there have been no changes to the discharge or the receiving stream, it was unnecessary to remodel these parameters.

The following modifications have been made to be consistent with current DEP policy:

- Standard Operating Procedure (SOP) for Clean Water Program New and Reissuance Sewage Individual NPDES Permit Applications Final, November 9, 2012 Revised, January 6, 2020 Version 1.9, Section IV.E.2 requires pH, Dissolved Oxygen (DO) and Total Residual Chlorine (TRC) be monitored at a frequency of “1/day,” “daily when discharging,” “1/shift” or “continuous.” In general, less frequent monitoring may be established only when the permittee demonstrates that there will be no discharge on days where monitoring is not required. For example, a facility that is always closed on Sundays and does not discharge may receive a monitoring frequency of “6/week.” This writer contemplated re-imposing the frequency of “5/week” for these parameters because it is not an activated sludge system. If appears the intent of the SOP is to enforce this requirement whether it is an activated sludge plant or not. Daily sampling when there is a discharge has therefore been imposed for pH, Dissolved Oxygen (DO) and Total Residual Chlorine (TRC) to ensure the operator is attending to the plant whenever there is a discharge. Perhaps lower flow rates on weekends will require recirculation rates to be adjusted. This frequency replaces “5/week” that was in the previous permit. The draft cover letter informs the permittee of this change.
- Effluent limitations for pH and DO are to be reported as “Instantaneous Minimum” in lieu of “Minimum”.
- The units for Fecal Coliform are now “No./100 ml” in lieu of “CFU/100 ml”.
- Mass loading limits and influent monitoring are not applicable for non-publicly owned treatment works.
- The daily max reporting requirement for the flow parameter was removed. This is not required per Table 6-3 of the Permits Writers Manual for this size plant and doesn’t seem logical for flows only required to be reported 2/month.
- The design flow of the sewage treatment plant is less than 0.1 mgd. For this reason, the permittee is not required to report influent and effluent concentrations for various parameters as listed in the NPDES application. Total Dissolved Solids and its major constituents are therefore not a concern at this time.