pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Northcentral Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0112810**
Facility Type	**Non-Municipal**	APS ID	**983927**
Major / Minor	**Minor**	Authorization ID	**1257185**

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Karl L. & Yvonne S. Drescher**	Facility Name	**Kipps Run MHP WWTF**
Applicant Address	46 Stacy Drive	Facility Address	40 Kipps Run Court
	Barto, PA 19504-8886		Danville, PA 17821
Applicant Contact	Karl L. Drescher	Facility Contact	Karl L. Drescher
Applicant Phone	484-919-3496	Facility Phone	484-919-3496
Client ID	213578	Site ID	241796
Ch 94 Load Status	Not Overloaded	Municipality	Riverside Borough
Connection Status	No Limitations	County	Northumberland
Date Application Received	January 02, 2019	EPA Waived?	Yes
Date Application Accepted	May 19, 2019	If No, Reason	N/A
Purpose of Application	Renewal of existing NPDES permit		

Summary of Review

INTRODUCTION

Karl L. & Yvonne S. Drescher, owners, has proposed the renewal of the existing National Pollution Discharge Elimination System (NPDES) authorizing the discharge from the on-site wastewater treatment facility (WWTF) serving the Kipps Run Mobile Home Park (MHP).

APPLICATION

Karl L. Drescher, the client and site contact for this application, submitted the NPDES Application for Individual Permit to Discharge Sewage Effluent from Minor Sewage Facilities (DEP #3800-PM-BCW0342b). This application was received by the Department on January 02, 2019 and was considered administratively complete on May 19, 2019. Additional contact information is (email) ydrescher52@gmail.com.

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.

The case file, permit application package and the draft permit will be available for public review at the Department's Northcentral Regional Office. The address is 208 West Third Street, Suite 101, Williamsport, PA 17701. An appointment can be made to review these materials during the comment period by calling the file coordinator at 570-327-3636.

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APPROVE	DENY	SIGNATURES	DATE
		Jeffrey J. Gocek /s/ *Jeffrey J. Gocek* Project Manager	
		Nicholas W. Hartranft, PE /s/ *Nicholas W. Hartranft* Environmental Engineer Manager	

DISCHARGE, RECEIVING WATERS AND WATER SUPPLY INFORMATION

Outfall No.	001	Design Flow (MGD)	0.0085
Latitude	40º 56' 39.04"	Longitude	-76º 39' 23.72"
Quad Name	Riverside, PA	Quad Code	1132
Wastewater Description:	Sewage Effluent		
Receiving Waters	Kipps Run (CWF)	Stream Code	27324
NHD Com ID	65642071	RMI	0.67
Drainage Area	0.28	Yield (cfs/mi^2)	1.57
Q_{7-10} Flow (cfs)	0.44	Q_{7-10} Basis	USGS Gage #01540500
Elevation (ft)		Slope (ft/ft)	N/A
Watershed No.	5-E	Chapter 93 Class.	CWF
Existing Use	None	Existing Use Qualifier	N/A
Exceptions to Use	N/A	Exceptions to Criteria	N/A
Assessment Status	See Narrative		
Cause(s) of Impairment	See Narrative		
Source(s) of Impairment	See Narrative		
TMDL Status	None	Name None	
Nearest Downstream Public Water Supply Intake	Sunbury Municipal Water Authority		
PWS Waters	Susquehanna River	Flow at Intake (cfs)	N/A
PWS RMI	N/A	Distance from Outfall (mi)	11.00

$Q_{7,10}$ DETERMINATION

The $Q_{7,10}$ flow is used for modeling wastewater treatment plant discharges. 25 PA §96.1 defines $Q_{7,10}$ as *the actual or estimated lowest seven consecutive day average flow that occurs once in 10 years for a stream with unregulated flow or the estimated minimum flow for a stream with regulated flow*.

Basin characteristics, for a watershed based on the discharge location, were obtained from the USGS StreamStats webpage. A nearby stream gage was selected as a reference. The selected gage is USGS #01540500 (Susquehanna River at Danville, PA). A $Q_{7,10}$ and drainage area for this gage were obtained from *Selected Streamflow Statistics for Streamgage Locations in and near Pennsylvania* (USGS Open Files Report 2011-1070). The drainage area at the discharge (5.12 mi^2) was determined by the *USGS Pennsylvania StreamStats* application. With both the drainage area (11,220 mi^2) and $Q_{7,10}$ (978 CFS) at the reference gage, the *Drainage Area Ratio Method* was used to calculate a $Q_{7,10}$ at the discharge of 0.44 CFS.

See Attachment 01 for the $Q_{7,10}$ determination.

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TREATMENT FACILITY SUMMARY

The Dreschers operate the Kipps Run MHP in Riverside Borough, Northumberland County. The original MHP WWTF was designed to serve approximately 34 units. The current WWTF is a package treatment plant, obtained from the East Lycoming School District in 1996. The plant consists of a pumping station, an aeration tank (22,500 gallons), a settling tank (5,625 gallons), a sludge holding tank (1631 gallons), an erosion tablet chlorinator and a chlorine contact tank (2,000 gallons).

See Attachment 02 for a map of the WWTP location.

WWTP characteristics are as follows.

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Extended Aeration	Hypochlorite	0.0340
Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.0085	20.4	Not Overloaded	Storage	Hauled Away

The original WWTF was approved by Water Quality Management (WQM) permit #4985407, issued December 17, 1985 to John and Gay Kremer. The permit was transferred January 29, 1990 to Kipps Run Mobile Home Park (Robert H. Shank) as #4985407-T1. The permit was again transferred December 02, 2003 to the current owners as #4985407-T2.

The original design consisted of septic tanks (at each unit), a dosing tank, two subsurface sand filters (each 48' X 84'), erosion tablet chlorinator, and a 2,000-gallon chlorine contact tank.

The annual average flow of the year prior to application submission was 0.0034 MGD.

COMPLIANCE HISTORY

The WMS Query *Open Violations for Client by Permit Number* revealed one open violation at Kipps Run MHP. This open violation is summarized below.

#	Facility	Inspection ID	Violation ID	Program	Region	Violation
1	Kipps Run MHP	2946571	865400	Safe Drinking Water	NCRO	Failure to submit or revise a comprehensive monitoring plan.

The most recent Department inspection, a compliance evaluation inspection (CEI), was conducted June 14, 2019. At the time of the inspection, all required treatment units were online and operational. No sample was collected. According to the report, this plant does not employ a flow meter since "permit only requires measurement".

Recent effluent violations, from March 2019 to January 2020, are presented in the table below.

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
TSS	07/31/19	Avg Mo	31	mg/L	30	mg/L
Fecal Coliform	07/31/19	Geo Mean	534.04	CFU/100 ml	200	CFU/100 ml
Fecal Coliform	07/31/19	IMAX	2419.6	CFU/100 ml	1000	CFU/100 ml

Recent Discharge Monitoring Report (DMR) data, from February 2019 to January 2020, is presented in the table below.

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Parameter	JAN-20	DEC-19	NOV-19	OCT-19	SEP-19	AUG-19	JUL-19	JUN-19	MAY-19	APR-19	MAR-19	FEB-19
Flow (MGD) Average Monthly	0.0025	0.0017	0.0020	0.0018	0.0018	0.0019	0.0008	0.0011	0.0011	0.0012	0.0012	0.0009
pH (S.U.) Minimum	7.4	7.4	7.0	6.9	7.1	6.8	7.0	7.1	7.1	7.4	7.1	7.0
pH (S.U.) Maximum	7.8	7.7	7.4	8.1	7.5	7.8	7.6	7.9	7.7	8.0	7.8	8.4
TRC (mg/L) Average Monthly	0.33	0.38	0.46	0.25	0.61	0.37	0.12	0.63	0.37	0.38	0.39	0.43
TRC (mg/L) Instantaneous Maximum	0.53	1.14	0.85	1.09	0.98	1.22	0.28	1.23	0.75	0.86	0.75	0.89
CBOD5 (mg/L) Average Monthly	3.15	< 2.0	3.0	< 3.0	< 3.0	3.0	5.0	< 3.0	< 3.0	4.1	< 3.0	5.0
CBOD5 (mg/L) Instantaneous Maximum	3.6	< 2.0	4.0	< 3.0	< 3.0	3.0	4.0	< 3.0	< 3.0	8.2	5.0	10
TSS (mg/L) Average Monthly	< 4.0	< 4.0	< 4.0	< 5.0	< 5.0	5.0	31	< 5.0	< 5.0	5.5	6.0	< 5.0
TSS (mg/L) Instantaneous Maximum	4.0	< 4.0	< 4.0	< 5.0	7.0	5.0	53	< 5.0	< 5.0	7.0	12	< 5.0
Fecal Coliform (CFU/100 ml) Geometric Mean	10.9	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	534.04	< 1.0	< 1.0	27.73	< 1.0	< 1.0
Fecal Coliform (CFU/100 ml) Instantaneous Maximum	3.30	< 1.0	< 1.0	1.0	< 1.0	< 1.0	2419.6	< 1.0	1.0	> 2419.6	< 1.0	1.0
Total Nitrogen (mg/L) Daily Maximum		4.8										
Total Phosphorus (mg/L) Daily Maximum		4.4										

EXISTING PERMIT LIMITATIONS

The following limitations were established at the last renewal issuance which occurred June 30, 2014.

Discharge Parameter	Mass Limits (lb/day)		Concentration Limits (mg/L)				Monitoring Requirements	
	Monthly Average	Daily Maximum	Minimum	Monthly Average	Daily Maximum	IMAX	Minimum Measurement Frequency	Required Sample Type
Flow (MGD)	Report	XXX	XXX	XXX	XXX	XXX	1/Day	Measured
pH (SU)	XXX	XXX	6.0	XXX	XXX	9.0	2/Week	Grab
Total Residual Chlorine	XXX	XXX	XXX	1.0	XXX	2.7	2/Week	Grab
$CBOD_5$	XXX	XXX	XXX	25	XXX	50	2/Month	Grab
Total Suspended Solids	XXX	XXX	XXX	30	XXX	60	2/Month	Grab
Fecal Coliform (CFU/100mL) (05/01-09/30)	XXX	XXX	XXX	200 Geometric Mean	XXX	1,000	2/Month	Grab
Fecal Coliform (CFU/100mL) (10/01-04/30)	XXX	XXX	XXX	2,000 Geometric Mean	XXX	10,000	2/Month	Grab
Total Nitrogen	XXX	XXX	XXX	XXX	Report	XXX	1/Year	Grab
Total Phosphorus	XXX	XXX	XXX	XXX	Report	XXX	1/Year	Grab

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DEVELOPMENT OF EFFLUENT LIMITATIONS

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)

Total Residual Chlorine

The Department's *TRC_CALC spreadsheet* is a model used to evaluate Total Residual Chlorine (TRC) effluent limitations. This model determines applicable acute and chronic wasteload allocations (WLAs) for TRC based on the data supplied by the user and then compares the WLAs to the technology-based average monthly limit using the procedures described in the EPA Technical Support Document (for Water Quality-based Toxics Control).

Parameter	Effluent Limitations (mg/L)	
	Monthly Average	IMAX
Total Residual Chlorine	0.50	1.635

See Attachment 03 for the TRC_CALC output.

These proposed limits are more stringent that the existing limits of 1.0 mg/L (monthly average) and 2.7 mg/L (Instantaneous Maximum (IMAX)). The reported monthly average results for 10 of the last 12 months have been in compliance. Proper operation of the disinfection system should achieve the proposed limitations.

Water Quality-Based Limitations

$CBOD_5$, NH_3-N and DO

WQM 7.0 for Windows is a DEP computer model used to determine wasteload allocations and effluent limitations for $CBOD_5$, NH_3-N and DO for single and multiple point source discharge scenarios. This model simulates two basic processes. The NH_3-N module simulates the mixing and degradation of NH_3-N in the stream and compares calculated instream NH_3-N concentrations to the water quality criteria. The DO module simulates the mixing and consumption of DO in the stream due to degradation of $CBOD_5$ and NH_3-N and compares the calculated instream DO concentrations to the water quality criteria. The model then determines the highest pollutant loading the stream can assimilate and still meet water quality under design conditions.

This model recommended the following limitations.

Parameter	Effluent Limitations (mg/L)		
	30 Day Average	Maximum	Minimum
$CBOD_5$	25		
NH_3-N	25	50	
DO			3.0

See Attachment 04 for the WQM model output.

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Best Professional Judgment (BPJ) Limitations

None

Anti-Backsliding

None

DEVELOPMENT OF EFFLUENT MONITORING

Chesapeake Bay TMDL

Despite 25 years of extensive restoration efforts, the Chesapeake Bay Total Maximum Daily Load (TMDL) was prompted by insufficient progress and continued poor water quality in the Chesapeake Bay and its tidal tributaries. This TMDL, required by the Clean Water Act, is the largest ever developed by the Environmental Protection Agency (EPA). This document identifies the necessary pollution reductions of nitrogen, phosphorus and sediment across Delaware, Maryland, New York, Virginia, West Virginia, District of Columbia and Pennsylvania. It also sets pollution limits necessary to meet applicable water quality standards in the Bay, tidal rivers and embayments.

Pennsylvania explains how and when it will meet its pollution allocations in its Watershed Implementation Plan (WIP), which is incorporated into the TMDL. Pennsylvania's permitting strategy for significant dischargers has been outlined in the Phase I WIP and incorporated in the Phase II WIP by reference, and imposes Total Nitrogen (TN) and Total Phosphorus (TP) cap loads on the significant dischargers.

Because the design of this facility is less than 0.2 MGD, the Department considers this an existing Phase 5 sewage facility for the purposes of implementing the Chesapeake Bay TMDL. This system has a design flow of 0.0085 MGD. According to the Department's Wastewater Supplement to Phase III WIP (last revised December 17, 2019), renewed Phase 5 facilities are required to contain monitoring and reporting for TN and TP throughout the permit term at a frequency of no less than annually.

Dissolved Oxygen

As a new parameter being introduced into a renewed permit, the Department is requiring only monitoring to verify reasonable potential for the next permit application review. This parameter is being introduced per policy.

Ammonia Nitrogen

Since modeling demonstrates that the effluent is meeting the technology-based limitation (monthly average) of 25 mg/L as an existing discharge, a monitoring requirement is being introduced to confirm. This parameter is being introduced per policy.

RECEIVING STREAM

Stream Characteristics

The receiving stream is Kipps Run. This stream, according to 25 PA § 93.9L, is protected for Cold Water Fishes (CWF) and Migratory Fishes (MF). These are the streams *Designated Uses*, which is defined in 25 PA § 93.1 as "those uses specified in §§ 93.9a – 93.9z for each waterbody or segment whether or not the use is being attained". Designated uses are regulations promulgated by the Environmental Quality Board (EQB) throughout the rulemaking process. This stream currently has no *Existing Use*. Existing Use is defined in 25 PA § 93.1 as "those uses actually attained in the waterbody on or after November 28, 1975 whether or not they are included in the water quality standards".

Kipps Run is identified by Department stream code 27324. The stream is located in (Chapter 93) drainage list K and State Water Plan 5E (Catawissa and Roaring Creeks).

Impairment

Department data indicates that Kipps Run is attaining its designated uses for supporting aquatic life. Kipps Run is NOT attaining its designated uses for recreation. It is impaired for pathogens from an unknown source.

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According to the Susquehanna River PCB TMDL (approved by EPA in 1999), a section of the river from the PA Route 92 bridge in Falls, PA to the confluence with the West Branch Susquehanna River in Sunbury, PA was determined to contain fish tissue samples with high concentrations of polychlorinated biphenyls (PCBs). The TMDL called for a 98% reduction in daily loads for PCB. Since this facility does not discharge PCBs, this TMDL will not impact this draft permit.

ADDITIONAL CONSIDERATIONS

Hauled-In Wastes

According to the application materials, the Kipps Run MHP WWTP has not received hauled-in wastes in the past.

Whole Effluent Toxicity (WET) Testing

According to the application materials, the Kipps Run MHP WWTP does not accept wastewater from industrial or commercial users. Because of this, a WET test evaluation is not required.

Rounding of Limitations

Limitations have been rounded in accordance with the Department's *Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits* (#362-0400-001).

Limit Multipliers

The instantaneous maximum limitations have been calculated using multipliers of 2.0 (for conventional pollutants) and 2.5 (for toxic pollutants) for determining the monthly average. This practice is in accordance with the Department's *Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits* (#362-0400-001).

Sample Frequencies and Types

The sample type and minimum measurement frequencies are in accordance with the Department's *Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits* (#362-0400-001).

Standard Operating Procedures (SOPs)

The review of this permit application was performed in accordance with the Department's *SOP for New and Reissuance Sewage Individual NPDES Permit Applications* and *SOP for Establishing Effluent Limitations for Individual Sewage Permits* (SOP #BPNPSM-PMT-033).

Special Permit Conditions

Stormwater Prohibition
Proper Waste Disposal
Approval Contingencies
Municipal Treatment Availability
Chlorine Minimization
Responsible Operator Notification
Solids Management (Non-Lagoon Systems) (PC110A)

Supplemental Discharge Monitoring Reports

Daily Effluent Monitoring
Non-Compliance Reporting
Biosolids Production and Disposal
Hauled-in Municipal Waste
Influent and Process Control
Lab Accreditation

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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.

Outfall 001, Effective Period: Permit Effective Date through Permit Expiration Date

Discharge Parameter	Mass Limits (lb/day)		Concentration Limits (mg/L)				Monitoring Requirements	
	Monthly Average	Daily Maximum	Minimum	Monthly Average	Daily Maximum	IMAX	Minimum Measurement Frequency	Required Sample Type
Flow (MGD)	Report	XXX	XXX	XXX	XXX	XXX	1/Day	Measured
pH (SU)	XXX	XXX	6.0	XXX	XXX	9.0	1/Day	Grab
Total Residual Chlorine	XXX	XXX	XXX	0.5	XXX	1.6	1/Day	Grab
Dissolved Oxygen	XXX	XXX	Report	XXX	XXX	XXX	1/Day	Grab
$CBOD_5$	XXX	XXX	XXX	25	XXX	50	2/Month	Grab
Total Suspended Solids	XXX	XXX	XXX	30	XXX	60	2/Month	Grab
Fecal Coliform (CFU/100mL) (05/01-09/30)	XXX	XXX	XXX	200 Geometric Mean	XXX	1,000	2/Month	Grab
Fecal Coliform (CFU/100mL) (10/01-04/30)	XXX	XXX	XXX	2,000 Geometric Mean	XXX	10,000	2/Month	Grab
Ammonia Nitrogen	XXX	XXX	XXX	XXX	Report	XXX	2/Month	Grab
Total Nitrogen	XXX	XXX	XXX	XXX	Report	XXX	1/Year	Grab
Total Phosphorus	XXX	XXX	XXX	XXX	Report	XXX	1/Year	Grab

END of Fact Sheet.