

Northcentral Regional Office CLEAN WATER PROGRAM

Application Type Facility Type Major / Minor	Renewal Municipal Minor		T FACT SHEET L SEWAGE	Application No. APS ID Authorization ID	PA0114693 976279 1243822
		Applicant and Fa	cility Information		
Applicant Name	Clymer Townsh	ip Municipal Authority	Facility Name	CTMA WWTP	
Applicant Address	P.O. Box 62		Facility Address	P.O. Box 62	
	Sabinsville, PA	16943-0062		Sabinsville, PA 16943-0062	
Applicant Contact	Sandra E. Swed	le	Facility Contact	William M. Bloom	
Applicant Phone	814-628-2455		Facility Phone	814-628-2405	
Client ID	63926		Site ID	255429	
Ch 94 Load Status	Not Overloaded		Municipality	Clymer Township	
Connection Status	No Limitations		County	Tioga	
Date Application Received	d Augus	st 29, 2018	EPA Waived?	Yes	
Date Application Accepted	d Octob	er 04, 2018	If No, Reason	N/A	
Purpose of Application	Renev	wal of existing NPDES permit			

Summary of Review

INTRODUCTION

Sandra E. Swede, Secretary and Board Member of the Clymer Township Municipal Authority, has proposed the renewal of the existing National Pollution Discharge Elimination System (NPDES) permit authorizing the discharge from the municipal wastewater treatment plant (WWTP) serving over 200 residents in Sabinsville Village.

APPLICATION

Swede, the client contact for this application, submitted the NPDES Application for Permit to Discharge Sewage (DEP #3800-PM-WSFR0018b). This application was received by the Department on August 29, 2018 and was considered administratively complete on October 04, 2018. Her additional contact information is (email) <u>hsswede@verizon.net</u>. The site contact is William M. Bloom, Plant Manager and Operator. His additional contact information is (email) <u>william.bloom@ntiogasd.org</u>.

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		Date	
		Jeffrey J. Gocek, EIT	Project Manager	
		Nicholas W. Hartranft, PE	Environmental Engineer Manager	

DISCHARGE, RECEIVING WATERS AND WATER SUPPLY INFORMATION

	2' 19.64"	_ Design Flow (MGD) _ Longitude	0.025 _77° 31' 24.00"
	abinsville, PA	_ Quad Code	0425
Wastewater Descriptic	n: Treated Sewage Effluent		
Receiving Waters NHD Com ID	Mill Creek 57351621	Stream Code	<u>31085</u> 3.816
Drainage Area	7.69	Yield (cfs/mi ²)	0.0132
Q7-10 Flow (cfs)	0.102	Q ₇₋₁₀ Basis	Gage 01518862
Elevation (ft)	1600	Slope (ft/ft)	0.01251
Watershed No.	4-A	Chapter 93 Class.	TSF
Existing Use	None	Existing Use Qualifier	N/A
Exceptions to Use	None	Exceptions to Criteria	None
Assessment Status	Impaired		
Cause(s) of Impairmer	nt Cause Unknown, Siltation, Th	nermal Modifications	
Source(s) of Impairme	nt Industrial Point Source Discha	arge, Removal of Riparian Vegetation	
TMDL Status	None	Name N/A	
Nearest Downstream I	Public Water Supply Intake	PA-NY Border	
PWS Waters	Cowanesque River	Distance from Outfall (mi)	31.0
-			

Q7,10 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 during the last renewal with the USGS Ecoflo Tool. The selected gage is USGS #01518862 (Cowanesque River at Westfield, 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 (7.69 mi²) was determined by the USGS Pennsylvania *StreamStats* application. With both the drainage area (90.6 mi²) and Q_{7,10} (1.2 CFS) at the reference gage, the *Drainage Area Ratio Method* was used to calculate a Q_{7,10} at the discharge of 0.102 CFS.

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

TREATMENT FACILITY SUMMARY

The Municipal Authority operates the WWTP in Clymer Township, Tioga County. Domestic wastewater is treated by a biological fixed-film WWTP which consists of a comminutor, bar screen, equalization tank, primary clarifier, rotating biological contactor, final clarifier, sodium hypochlorite disinfection, chlorine contact tank, post aeration, aerobic digester and sludge drying beds.

See Attachment 02 for a map of the WWTP location.

WWTP characteristics are as follows.

Waste Type	Degree of Treatment	Process Type	Disinfection	Average Annual Daily Flow (MGD)
Sewage	Secondary	Fixed Film	Hypochlorite	0.025
Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.025	68.0	Not Overloaded	Aerobic Digestion	Other WWTP

The original WWTP was approved by Water Quality Management (WQM) permit #5991401, issued February 6, 1992 to the Clymer Township Municipal Authority. The permit was amended (WQM #5991401-A1) December 18, 2006 to approve the rerate of the organic capacity of the WWTP from 40 pounds BOD5 per day to 68 pounds BOD5 per day.

The annual average flow of the year prior to application submission was 0.01 MGD. The highest monthly average flow for the year prior to the application submission was 0.014 MGD (April 2017).

COMPLIANCE HISTORY

The WMS Query Open Violations for Client by Permit Number revealed no open violations for the Authority.

The most recent Department inspection, a compliance evaluation inspection (CEI), was conducted January 02, 2019. At the time of the inspection, all required treatment units were online and operational. The plant effluent was clear with a Total Residual Chlorine (TRC) of 0.50 mg/L and a pH of 7.4. No impact to the receiving stream was observed. Effluent violations from July 2018 were documented.

Recent Discharge Monitoring Report (DMR) data; from July 2018 to June 2019, is presented in the table below.

NPDES Fact Sheet

Parameter	JUN-19	MAY-19	APR-19	MAR-19	FEB-19	JAN-19	DEC-18	NOV-18	OCT-18	SEP-18	AUG-18	JUL-18
Flow (MGD) Average Monthly	0.00988	0.01076	0.01464	0.01031	0.01155	0.01152	0.0118	0.01218	0.01114	0.01837	0.00956	0.042
Flow (MGD) Daily Maximum	0.01369	0.01468	0.0939	0.01621	0.02789	0.02642	0.02966	0.02529	0.01813	0.04365	0.01541	0.02637
pH (S.U.) Minimum	7.22	7.13	7.14	7.16	7.06	7.27	7.15	7.49	7.33	7.15	7.31	7.2
pH (S.U.) Maximum	7.58	7.55	7.52	7.61	7.74	7.76	7.88	7.92	8.12	7.74	7.81	7.71
DO (mg/L) Minimum	7.55	7.81	7.23	6.1	7.02	4.86	4.41	4.77	4.35	4.28	4.42	4.31
TRC (mg/L) Average Monthly	0.23	0.23	0.27	0.25	0.29	0.27	0.24	0.26	0.22	0.28	0.25	0.25
TRC (mg/L) Instantaneous Maximum	0.32	0.32	0.32	0.33	0.39	0.33	0.38	0.3	0.32	0.41	0.45	0.44
CBOD5 (lbs/day) Average Monthly	0.5	0.8	3.0	0.4	0.4	0.8	0.5	0.5	0.6	0.9	0.4	0.7
CBOD5 (lbs/day) Weekly Average	0.5	0.8	6.0	0.6	0.7	0.8	0.6	0.6	0.7	1.0	0.4	1.0
CBOD5 (mg/L) Average Monthly	6.0	9.0	7.0	5.0	3.0	9.0	6.0	6.0	5.0	7.0	5.0	7.0
CBOD5 (mg/L) Weekly Average	6.0	9.0	11	7.0	4.0	9.0	8.0	8.0	6.0	7.0	5.0	10
BOD5 (lbs/day) Raw Sewage Influent Average Monthly	17	7.0	6.0	6.0	7.0	12	14	6.0	22	18	6.0	7.0
BOD5 (lbs/day) Raw Sewage Influent Daily Maximum	21	9.0	7.0	6.0	11	14	20	6.0	30	30	8.0	9.0
BOD5 (mg/L) Raw Sewage Influent Average Monthly	221	71	75	70	87	133	187	65	199	116	87	77
TSS (lbs/day) Average Monthly	0.4	2.0	6.0	0.7	0.8	2.0	0.9	1.0	1.0	1.0	0.7	1.0
TSS (lbs/day) Raw Sewage Influent Average Monthly	13	4.0	3.0	4.0	3.0	9.0	17	5.0	13	21	6.0	5.0
TSS (lbs/day) Raw Sewage Influent Daily Maximum	17	6.0	5.0	4.0	5.0	11	26	5.0	20	40	6.0	6.0
TSS (lbs/day) Weekly Average	0.4	2.0	18	1.0	2.0	2.0	1.0	0.6	2.0	1.0	0.8	3.0
TSS (mg/L) Average Monthly	5.0	21	12	8.0	6.0	18	12	13	12	8.0	10	14
TSS (mg/L) Raw Sewage Influent Average Monthly	161	46	39	42	42	101	232	51	117	129	78	58
TSS (mg/L) Weekly Average	5.0	22	23	11	10	20	18	8.0	14	9.0	10	22
Fecal Coliform (CFU/100 ml) Geometric Mean	201	796	20	14	6.0	18	97	35	15	70	37	423
Fecal Coliform (CFU/100 ml) Instantaneous Maximum	387.3	1732.9	105.4	52.1	8.0	26	1733	52	23	91	48	548
Total Nitrogen (lbs/day) Average Monthly							1.79					
Total Nitrogen (mg/L) Average Monthly							26.9					
Ammonia (Ibs/day) Average Monthly	< 0.03	0.05	0.07	0.03	0.03	0.05	0.06	0.05	0.08	0.08	0.04	0.05
Ammonia (Ibs/day) Weekly Average	< 0.04	0.05	0.2	0.05	0.05	0.05	0.06	0.04	0.1	0.09	0.04	0.07
Ammonia (mg/L) Average Monthly	< 0.34	< 0.56	0.21	0.34	0.24	< 0.56	1.0	1.0	1.0	1.0	1.0	1.0
Ammonia (mg/L) Weekly Average	< 1.0	< 1.0	0.1	1.0	0.27	< 0.56	1.0	1.0	1.0	1.0	1.0	1.0
Total Phosphorus (lbs/day) Average Monthly							0.1903					
Total Phosphorus (mg/L) Average Monthly							2.85					

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EFFLUENT VIOLATIONS

The following effluent violations occurred between August 01, 2018 and June 30, 2019.

Parameter	Date	SBC	DMR Value	Units	Limit Value
TSS	04/30/19	Wkly Avg	18	lbs/day	9
Fecal Coliform	05/31/19	Geo Mean	796	CFU/100 ml	200
Fecal Coliform	06/30/19	Geo Mean	201	CFU/100 ml	200
Fecal Coliform	05/31/19	IMAX	1732.9	CFU/100 ml	1000

EXISITNG PERMIT LIMITATIONS

The following limitations were established at the last renewal issuance which occurred February 21, 2014.

	Mass Limit	s (lb/day)		Concentration	Limits (mg/L)		Monitoring Re	quirements
Discharge Parameter	Monthly Average	Weekly Average	Minimum	Monthly Average	Weekly Average	IMAX	Minimum Measurement Frequency	Required Sample Type
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Measured
pH (SU)	XXX	XXX	6.0	XXX	XXX	9.0	1/Day	Grab
Dissolved Oxygen	XXX	XXX	4.0	XXX	XXX	XXX	1/Day	Grab
Total Residual Chlorine	XXX	XXX	XXX	0.39	XXX	1.2	1/Day	Grab
CBOD₅	5.0	8.0	XXX	25	40	50	2/Month	Grab
BOD5 Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	2/Month	Grab
TSS Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	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 (05/01-10/31)	1.0	1.0	XXX	4.0	6.0	8.0	2/Month	Grab
Ammonia Nitrogen (11/01-04/30)	3.0	4.0	XXX	12	18	24	2/Month	Grab
Total Nitrogen	Report	XXX	XXX	Report	XXX	XXX	1/Year	Grab
Total Phosphorus	Report	XXX	XXX	Report	XXX	XXX	1/Year	Grab

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)
CBOD ₅	40	Average Weekly	133.102(a)(4)(ii)	92a.47(a)(2)
	30	Average Monthly	133.102(b)(1)	92a.47(a)(1)
Total Suspended Solids	45	Average Weekly	133.102(b)(2)	92a.47(a)(2)
pН	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)

Water Quality-Based Limitations

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)			
Falameter	Monthly Average	IMAX		
Total Residual Chlorine	0.395	1.20		

See Attachment 03 for the TRC_CALC output.

CBOD₅, NH₃-N and DO

WQM 7.0 for Windows is a DEP computer model used to determine wasteload allocations and effluent limitations for CBOD₅, NH₃-N and DO for single and multiple point source discharge scenarios. This model simulates two basic processes. The NH₃-N module simulates the mixing and degradation of NH₃-N in the stream and compares calculated instream NH₃-N concentrations to the water quality criteria. The DO module simulates the mixing and consumption of DO in the stream due to degradation of CBOD₅ and NH₃-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. The existing technology-based limitations were used as model inputs and proved to be more stringent than water quality-based limitations calculated by the model.

Parameter	Effluent Limitations (mg/L)				
Falailletei	30 Day Average	Maximum	Minimum		
CBOD₅	25				
NH ₃ -N	4.0	8.0			
DO			3.0		

See Attachment 04 for the WQM model output.

BEST PROFESSIONAL JUDGMENT (BPJ) LIMITATIONS

Seasonal Limitation

The applicable seasonal limit multiplier, in accordance with the Department's *Determining Water Quality-Based Effluent Limits* (DEP #391-2000-003), will be continued in this issuance. See below.

Parameter	Time Period	Multiplier
NH3-N	November 01 through April 30	3.0

Dissolved Oxygen

A minimum Dissolved Oxygen (DO) limitation of 4.0 mg/L is used to ensure adequate operation and maintenance of the WWTP.

ANTI-BACKSLIDING

In order to comply with 40 CFR § 122.44(I) (anti-backsliding requirements), the Department must issue a renewed permit with limitations as stringent as that the of the previous permit. No less stringent limitations have been proposed for this draft.

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 0.025 MGD. According to the Department's Wastewater Supplement to Phase II WIP (last revised November 09, 2018), 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.

Influent Sampling

In accordance with the Department's SOP for New and Reissuance Sewage Individual NPDES Permit Applications (unnumbered), influent sampling for BOD₅ and TSS is required for all POTWs with design flows greater than 2,000 gallons per day (gpd). The Department considers the existing 2/month monitoring adequate for characterizing the influent.

RECEIVING STREAM

Stream Characteristics

The receiving stream is Mill Creek. This stream, according to 25 PA § 93.9H, is protected for Trout Stock Fishes (TSF) 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".

This Unnamed Tributary to Susquehanna River is identified by Department stream code 31085. The stream is located in (Chapter 93) drainage list H and State Water Plan 4A (Cowanesque and Tioga Rivers).

Impairment

Department data indicates that Mill Creek is attaining its designated uses for supporting aquatic life but is not attaining its designated uses for supporting recreation. The stream is impaired for pathogens due to an unknown source.

ADDITIONAL CONSIDERATIONS

Hauled-In Wastes

According to the application materials, the Clymer Township WWTP has not received hauled-in wastes during the past three years and does not anticipate receiving hauled-in wastes in the next five years.

Whole Effluent Toxicity (WET) Testing

According to the application materials, the Clymer Township WWTP does not accept wastewater from industrial 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 Approval Contingencies Proper Waste Disposal Chlorine Minimization 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

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
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	Mass Limits (lb/day)		Concentration Limits (mg/L)				Monitoring Requirements	
Discharge Parameter	Monthly Average	Weekly Average	Minimum	Monthly Average	Weekly Average	IMAX	Minimum Measurement Frequency	Required Sample Type
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Measured
pH (SU)	XXX	XXX	6.0	XXX	XXX	9.0	1/Day	Grab
Dissolved Oxygen	XXX	XXX	4.0	XXX	XXX	XXX	1/Day	Grab
Total Residual Chlorine	XXX	XXX	XXX	0.39	XXX	1.2	1/Day	Grab
CBOD₅	5.0	8.0	XXX	25	40	50	2/Month	Grab
BOD5 Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	2/Month	Grab
Total Suspended Solids	6.0	9.0	XXX	30	45	60	2/Month	Grab
TSS Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	2/Month	Grab
Fecal Coliform (No./100mL) 05/01-09/30	XXX	XXX	XXX	200 Geo. Mean	XXX	1,000	2/Month	Grab
Fecal Coliform (No./100mL) 10/01-04/30	XXX	XXX	XXX	2,000 Geo. Mean	XXX	10,000	2/Month	Grab
Ammonia Nitrogen (05/01-10/31)	1.0	1.0	XXX	4.0	6.0	8.0	2/Month	Grab
Ammonia Nitrogen (11/01-04/30)	3.0	4.0	XXX	12	18	24	2/Month	Grab
Total Nitrogen	Report	XXX	XXX	Report	XXX	XXX	1/Year	Grab
Total Phosphorus	Report	XXX	XXX	Report	XXX	XXX	1/Year	Grab