pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southwest Regional Office
CLEAN WATER PROGRAM

Application Type	**New**	Application No.	**PA0285234**
Wastewater Type	**Sewage**	APS ID	**1099900**
Facility Type	**SRSTP**	Authorization ID	**1460000**

NPDES PERMIT FACT SHEET
INDIVIDUAL SFTF/SRSTP

Applicant, Facility and Project Information

Applicant Name	**Charles Vrabel**	Facility Name	**Vrabel Properties SRSTP**
Applicant Address	13 Dewey Lane	Facility Address	2720 Ridge Road
	Gibsonia, PA 15044-4910		Natrona Heights, PA 15065-3072
Applicant Contact	Charles Vrabel	Facility Contact	Same as Applicant
Applicant Phone	(724) 321-2955	Facility Phone	Same as Applicant
Client ID	380693	Site ID	867948
SIC Code	8800	Municipality	Fawn Township
SIC Description	Private Households	County	Allegheny
Date Application Received	October 25, 2023	WQM Required	Yes
Date Application Accepted	October 30, 2023	WQM App. No.	0223405

Project Description: Application for a new NPDES permit authorize a discharge of a treated Sewage.

Summary of Review

The applicant proposes to construct a 500 GPD (1.25 EDUs) Small Residential Sewage Treatment Plant (SRSTP) that will serve an existing three-bedroom dwelling in Fawn Township, Allegheny County. This is a new system will be installed to serve four bedrooms dwelling.

WQM Permit No. 0223405 will be issued concurrently with the final issuance of the NPDES Permit.

The proposed SRSTP will discharge directly to UNT 42463 of Little Bull Creek which is classified as TSF and located in State Watershed 18-A.

This NPDES permit is being issued to approve the operation and discharge of treated sewage effluent from a Single Residence Sewage Treatment Plant (SRSTP) Module 16 consisting of (see page 8):

- One Singulair Bio-Kinetic Model 960-500 Treatment tank. This system is rated for a capacity of 2355 gallons, and up to 600 gpd to treat.
- Three treatment chambers (Pretreatment, Extended Aeration, and Final Clarification) connected in series with a total volume of 1300 gallons.
- Hydro-Kinetic Bio-Film Reactor (HKBFR) system installed in the clarification chamber which mainly include Micronically Molded Design Flow Filter, and a peak flow filter.
- A Norweco AT 1500 UV Disinfection System preinstalled by the manufacturer.

Approve	Deny	Signatures	Date
X		Hazim Aldalli / Environmental Engineering Specialist	December 29, 2023
X		Christopher Kriley, P.E. / Program Manager	January 03, 2024

Summary of Review

The project drawings (see page 7) shows an average of 80 feet of a 4 inches schedule 40 PVC pipe that will deliver the effluent from the dwelling to the point of discharge (UNT of Little Bull Creek), which is located adjacent to the applicant property. The last 10 feet of the discharge pipe will be perforated.

Act 537 Planning was approved for this project on September 29, 2023.

A Public Notice receiving this application was published in the PA Bulletin on November 18, 2023.

The Act – 14 PL 834 Municipal Notifications were provided by the October 12 & 13, 2023 letters and no comments were received.

At this time, the applicant has no open or unresolved violations.

Permit issuance is recommended.

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.

Discharge and Stream Data – 2 - Receiving Waters and PWS

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	001	Design Flow (MGD)	0.0005
Latitude	40º 37' 43"	Longitude	-79º 44' 36"
Quad Name	Freeport	Quad Code	40079F6
Wastewater Description:	Sewage Effluent		
Receiving Waters	Unnamed Tributary of Little Bull Creek (TSF)	Stream Code	42463
NHD Com ID	123971787	RMI	0.6300
Drainage Area	0.0523 square miles	Yield (cfs/mi^2)	0.004
Q_{7-10} Flow (cfs)	0.000209	Q_{7-10} Basis	USGS StreamStats
Elevation (ft)	1138	Slope (ft/ft)	0.0004
Watershed No.	18-A	Chapter 93 Class.	TSF
Existing Use		Existing Use Qualifier	
Exceptions to Use	None	Exceptions to Criteria	None
Assessment Status	Attaining Use(s): Aquatic Life		
Cause(s) of Impairment			
Source(s) of Impairment			
TMDL Status		Name	

Changes Since Last Permit Issuance: N/A. This is a new permit.

Other Comments: None.

Treatment Facility Summary

Treatment Facility Name: Vrabel Properties SRSTP.

WQM Permit No.	Issuance Date
0223405	Processing

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Tertiary	Extended Aeration	Ultraviolet	0.0005

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.0005	0.9	Not Overloaded	Aerobic Tank	None/Semi Annual Cleaning

Changes Since Last Permit Issuance: N/A (New Facility).

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0.0005
Latitude 40º 37' 43" **Longitude** -79º 44' 36"

Wastewater Description: Treated Sewage Effluent

Technology-Based Limitations (TBELs)

The following effluent limitations and monitoring requirements, at a minimum, will be established in all new and renewed SRSTP permits based on the requirements of DEP's "Standard Operating Procedure (SOP) for Clean Water Program New and Reissuance Single Residence Treatment Facility Individual NPDES Permit Application" (SOP No. BCW-PMT-003, Version 1.8, Final, November 9, 2012, Revised May 17, 2019).

Parameter	Avg	IMAX	Sample Type	Frequency: SFTFs	Frequency: SRSTPs
Flow (GPD)	Report	XXX	Estimate (SRSTPs) Measured (SFTFs)	1/month	1/year
BOD5 (mg/L)	10	20	Grab	1/month	1/year
TSS (mg/L)	10	20	Grab	1/month	1/year
pH*	6.0 S.U. Inst. Min.	9.0 S.U.	Grab	1/month	1/year
TRC (mg/L)	Report for SRSTPs; Use TRC Spreadsheet to determine WQBELs or 0.02 mg/L for SFTFs		Grab	1/month	1/year
Fecal Coliform (No./100 ml)	200 Geometric Mean (SFTFs) / Average (SRSTPs)		Grab	1/month	1/year

***** Technology-Based effluent limits for pH will be imposed based upon Federal Regulation 133.102(c) and State Regulation 95.2(1).
** Use the Geometric Mean if the Sampling Frequency is at least 1/month. Use Annual Average, Semi-Annual Average or Quarterly Average if the Sampling Frequency is less than 1/month.

Additional Considerations:

After checking on the proposed treatment plant technical specs, this treatment unit can achieve the stringent limits imposed since it is included within the plant's design manual, and it is NSF approved.

BOD_5 limitations will be imposed instead of $CBOD_5$ which reflect the most stringent limitation amongst the Technology-Based Effluent Limitations and based upon the Department's SOP – New and Reissuance Individual SRSTP NPDES Permits, and per DEP's Small Treatment Facilities Manual (Nov. 2023).

Technology-based effluent limits for pH will be imposed based upon State Regulation 95.2(1).

For SRSTPs with UV disinfection systems, it is not necessary to require UV intensity or transmittance monitoring in the permit.

Sewage discharges with design flows < 2,000 gpd do not require monitoring for Total Nitrogen and Total Phosphorus in new and reissued permits per Department's *SOP- New and Reissuance of SRSTP Individual NPDES Permit Applications*. Therefore, no nutrient monitoring will be imposed at Outfall 001.

Sampling frequency for all parameters is 1/year which is consistent with the Department's *SOP - New and Reissuance of SRSTP Individual NPDES Permit Applications*.

The applicant does not use eDMR and current policy does not require eDMR to be used for SRSTPs.

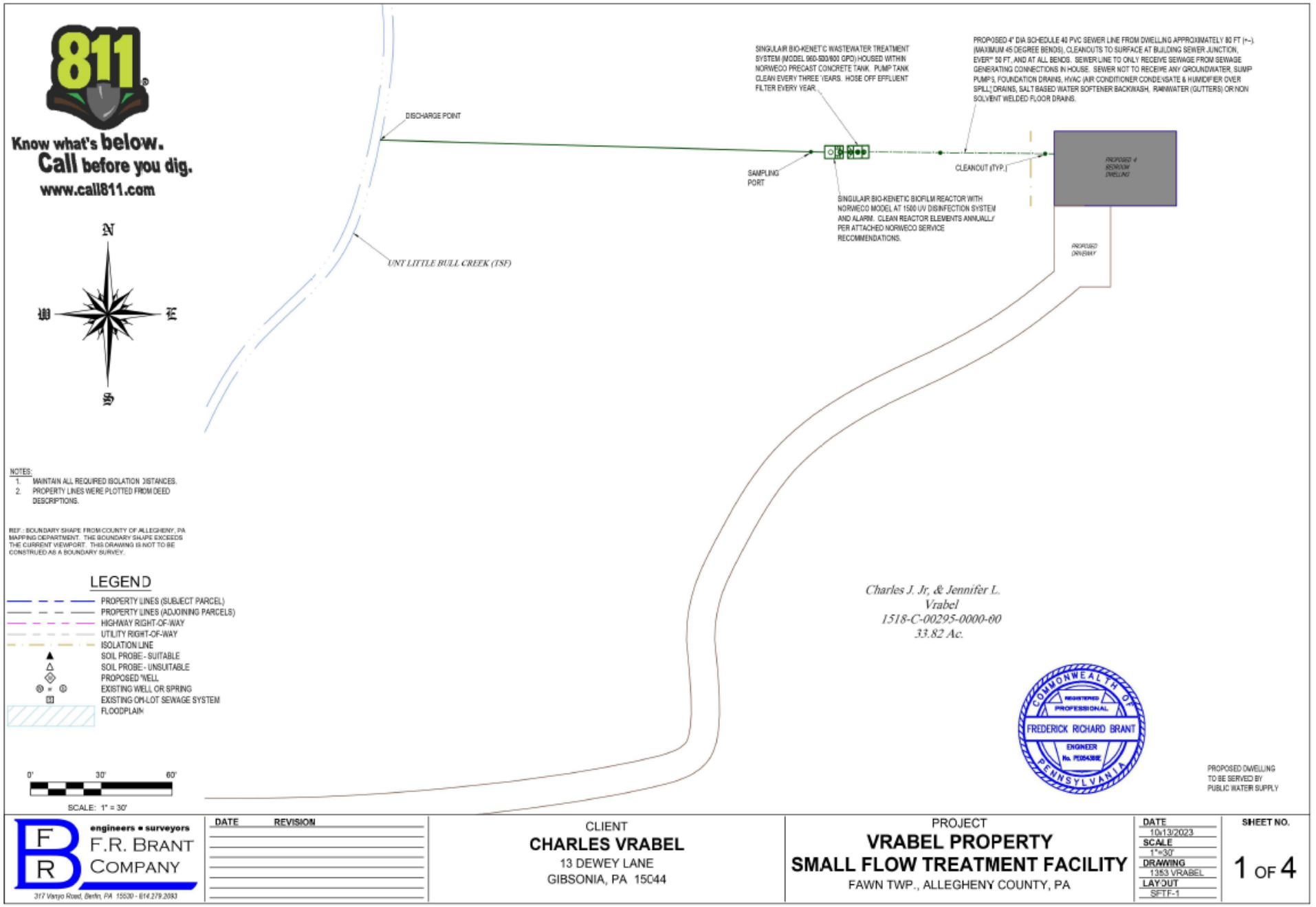
Proposed Effluent Limitations and Monitoring Requirements

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)		Concentrations (mg/L)				Minimum Measurement Frequency	Required Sample Type
	Annual Average	Average Weekly	Minimum	Annual Average	Maximum	Instant. Maximum		
Flow (MGD)	Report	XXX	XXX	XXX	XXX	XXX	1/year	Estimate
pH (S.U.)	XXX	XXX	6.0 Inst. Min	XXX	9.0 Inst. Max	XXX	1/year	Grab
BOD5	XXX	XXX	XXX	10	XXX	20	1/year	Grab
TSS	XXX	XXX	XXX	10	XXX	20	1/year	Grab
Fecal Coliform (No./100 ml)	XXX	XXX	XXX	200	XXX	XXX	1/year	Grab

Compliance Sampling Location: Outfall 001.


811
Know what's below.
Call before you dig.
www.call811.com
N
W
E
S
SINGULAIR BIO-KENET'C WASTEWATER TREATMENT SYSTEM (MODEL 960-500/600 GPD) HOUSED WITHIN NORWECO PRECAST CONCRETE TANK. PUMP TANK CLEAN EVERY THREE YEARS. HOSE OFF EFFLUENT FILTER EVERY YEAR.
PROPOSED 4" DIA SCHEDULE 40 PVC SEWER LINE FROM DWELLING APPROXIMATELY 80 FT (+-). (MAXIMUM 45 DEGREE BENDS), CLEANOUTS TO SURFACE AT BUILDING SEWER JUNCTION, EVERY 50 FT, AND AT ALL BENDS. SEWER LINE TO ONLY RECEIVE SEWAGE FROM SEWAGE GENERATING CONNECTIONS IN HOUSE. SEWER NOT TO RECEIVE ANY GROUNDWATER, SUMP PUMP'S, FOUNDATION DRAINS, HVAC (AIR CONDITIONER CONDENSATE & HUMIDIFIER OVER SPILL) DRAINS, SALT BASED WATER SOFTENER BACKWASH, RAINWATER (GUTTERS) OR NON SOLVENT WELDED FLOOR DRAINS.
DISCHARGE POINT
SAMPLING PORT
CLEANOUT (TYP.)
SINGULAIR BIO-KENETIC BIOFILM REACTOR WITH NORWECO MODEL AT 1500 UV DISINFECTION SYSTEM AND ALARM. CLEAN REACTOR ELEMENTS ANNUALLY PER ATTACHED NORWECO SERVICE RECOMMENDATIONS.
PROPOSED 4 BEDROOM DWELLING
PROPOSED DRIVEWAY
UNT LITTLE BULL CREEK (TSF)
NOTES:
1. MAINTAIN ALL REQUIRED ISOLATION DISTANCES.
2. PROPERTY LINES WERE PLOTTED FROM DEED DESCRIPTIONS.
REF.: BOUNDARY SHAPE FROM COUNTY OF ALLEGHENY, PA MAPPING DEPARTMENT. THE BOUNDARY SHAPE EXCEEDS THE CURRENT VIEWPORT. THIS DRAWING IS NOT TO BE CONSTRUED AS A BOUNDARY SURVEY.
LEGEND
PROPERTY LINES (SUBJECT PARCEL)
PROPERTY LINES (ADJOINING PARCELS)
HIGHWAY RIGHT-OF-WAY
UTILITY RIGHT-OF-WAY
ISOLATION LINE
SOIL PROBE - SUITABLE
SOIL PROBE - UNSUITABLE
PROPOSED WELL
EXISTING WELL OR SPRING
EXISTING ON-LOT SEWAGE SYSTEM
FLOODPLAIN
0' 30' 60'
SCALE: 1" = 30'
Charles J. Jr, & Jennifer L. Vrabel
1518-C-00295-0000-00
33.82 Ac.
COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
FREDERICK RICHARD BRANT
ENGINEER
PROPOSED DWELLING TO BE SERVED BY PUBLIC WATER SUPPLY
F.R. BRANT COMPANY
engineers • surveyors
317 Vanyo Road, Berlin, PA 15530 - 814.279.2693
DATE REVISION
CLIENT
CHARLES VRABEL
13 DEWEY LANE
GIBSONIA, PA 15044
PROJECT
VRABEL PROPERTY
SMALL FLOW TREATMENT FACILITY
FAWN TWP., ALLEGHENY COUNTY, PA
DATE 10/13/2023
SCALE 1"=30'
DRAWING 1353 VRABEL
LAYOUT SFTF-1
SHEET NO. 1 OF 4

GENERAL NOTES:

① SINGULAIR® AERATOR, AS TESTED AND ACCEPTED BY NSF.

② FALL THROUGH SINGULAIR® PLANT FROM INLET INVERT TO OUTLET INVERT IS FOUR INCHES. INLET INVERT IS TWELVE INCHES BELOW TANK TOP.

③ ON DEEPER INSTALLATIONS, RISERS MUST BE USED TO EXTEND AERATOR MOUNTING CASTING, BIO-FILM REACTOR RISER, AND BIO-KINETIC® SYSTEM MOUNTING CASTING TC GRADE. INSPECTION COVER ON PRETREATMENT CHAMBER MUST BE DEVELOPED TO WITHIN TWELVE INCHES OF GRADE.

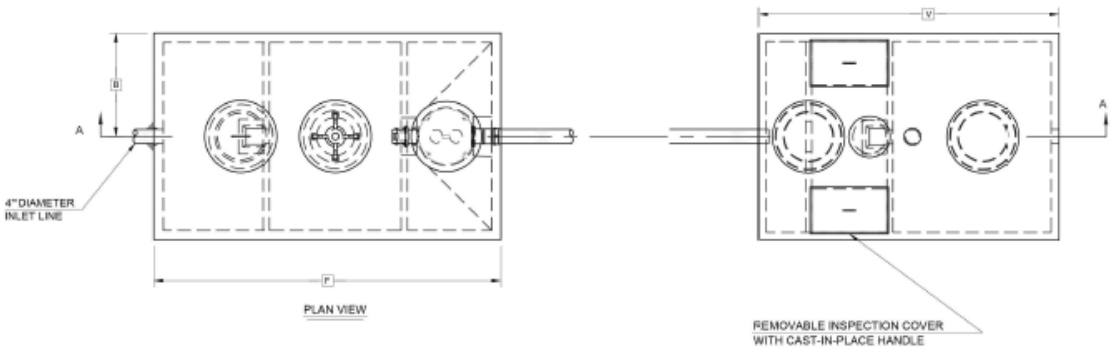
④ TANK REINFORCED PER ACI STD. 318-05.

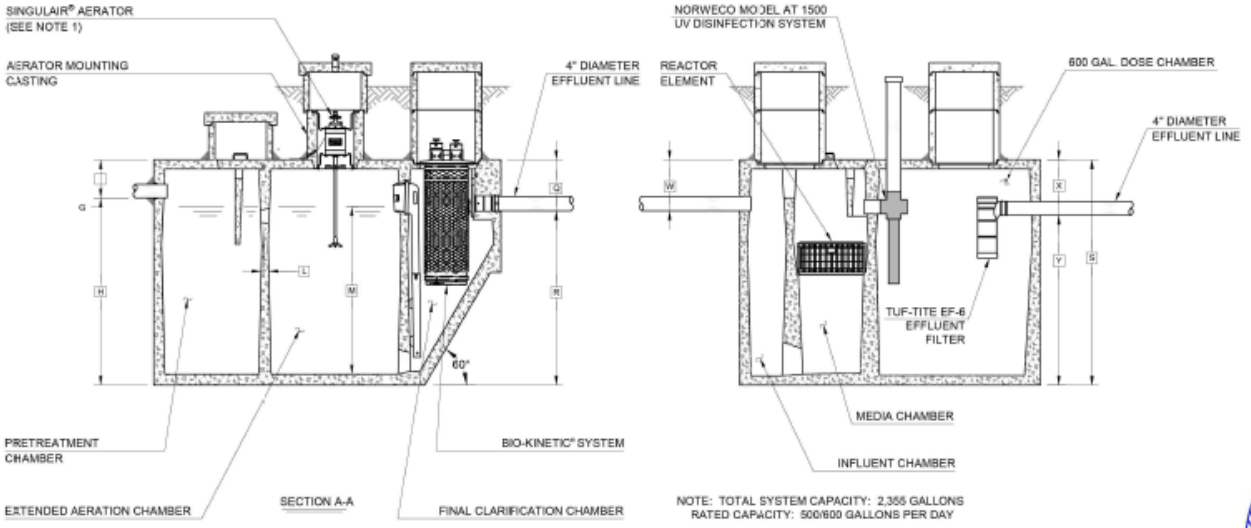
⑤ REMOVABLE COVERS ON RISERS WEIGH IN EXCESS OF SEVENTY-FIVE POUNDS EACH TO PREVENT UNAUTHORIZED ACCESS. REACTOR LID IS SECURED.

⑥ CONTACT THE LOCAL, LICENSED SINGULAIR® DISTRIBUTOR FOR ELECTRICAL REQUIREMENTS AND CONFIRMATION OF CRITICAL DIMENSIONS.

CRITICAL DIMENSIONS (SEE NOTE 6)

A	1'- 0"	N	
B	2'- 9"	O	
C		P	
D		Q	1'- 4"
E		R	4'- 8"
F	9'- 3"	S	6'- 0"
G	1'- 0"	T	
H	5'- 0"	U	
I		V	8'- 0"
J		W	1'- 4"
K		X	1'- 5.5"
L	0'- 2"	Y	4'- 6.5"
M	4'- 6"	Z	





SINGULAIR BIO-KINETIC MODEL 960-500 & HYDRO-KINETIC BIO-FILM REACTOR

N.T.S.

COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL ENGINEER — FREDERICK RICHARD BRANT

F R engineers ■ surveyors F.R. BRANT COMPANY
317 Vanyo Road, Berlin, PA 15530 - 814.279.2093

DATE REVISION

CLIENT
CHARLES VRABEL
13 DEWEY LANE
GIBSONIA, PA 15044

PROJECT
VRABEL PROPERTY
SMALL FLOW TREATMENT FACILITY
FAWN TWP., ALLEGHENY COUNTY, PA

DATE 10/13/2023
SCALE N.T.S.
DRAWING 1353 VRABEL
LAYOUT SFTF-2

SHEET NO. 2 OF 4

StreamStats Report

Region ID: PA
Workspace ID: PA20231113204324539000
Clicked Point (Latitude, Longitude): 40.63013, -79.74321
Time: 2023-11-13 15:43:46 -0500

Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	0.0523	square miles
ELEV	Mean Basin Elevation	1138	feet

Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 4]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.0523	square miles	2.26	1400
ELEV	Mean Basin Elevation	1138	feet	1050	2580

Low-Flow Statistics Disclaimers [Low Flow Region 4]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

Low-Flow Statistics Flow Report [Low Flow Region 4]

Statistic	Value	Unit
7 Day 2 Year Low Flow	0.000932	ft^3/s
30 Day 2 Year Low Flow	0.00206	ft^3/s
7 Day 10 Year Low Flow	0.000209	ft^3/s
30 Day 10 Year Low Flow	0.000558	ft^3/s
90 Day 10 Year Low Flow	0.0013	ft^3/s

Low-Flow Statistics Citations

Stuckey, M.H.,2006, Low-flow, base-flow, and mean-flow regression equations for Pennsylvania streams: U.S. Geological Survey Scientific Investigations Report 2006-5130, 84 p. (http://pubs.usgs.gov/sir/2006/5130/)

Application Version: 4.18.1
StreamStats Services Version: 1.2.22
NSS Services Version: 2.2.1