County of San Diego

Department of Environmental Health and Quality

Land and Water Quality
5500 Overland Ave., Suite 210, San Diego, CA 92123 / (858) 565-5173
www.sdcdehq.org

ONSITE WASTEWATER TREATMENT SYSTEM LAYOUT APPROVAL
EXPIRATION DATE: 2/27/2028

Owner: Linda Kaye Gutman, Trustee Of The Baker Family Trust, Trust B

Address: 0 Boundary Ave
Ramona, CA 92065

Phone:

Site: BOUNDARY AVE, RAMONA

Parcel: 282-251-20-00

Certification: Percolation Test

Record ID: DEH2025-LOWTS-020469

This project is **APPROVED** for the following:

Commercial / Residential: Residential

Gallons / Day: 600

Number of Bedrooms: 4

THIS IS NOT AN ONSITE WASTEWATER TREATMENT SYSTEM PERMIT

You have until 2/27/2028 to obtain a septic permit. However, a site recheck may be required at any time to determine if site conditions have changed. Refer to the County of San Diego, Department of Environmental Health and Quality, Local Agency Management Program for Onsite Wastewater Treatment Systems for all applicable setbacks and standard conditions of approval.

ONSITE WASTEWATER SYSTEM REQUIREMENTS

Primary Septic Tank (in gallons): 1500

Supplemental Treatment Type: AdvanTex*, Other Supplemtal Treatment:*

Make/Model of Supplemental Treatment: AX20-RT

System Details:

Soil Disposal System

	System Type	Length	Width	Depth	Cap Depth	Spacing	Depth of Medium	# of Pods
Primary Dwelling	Drip Dispersal Line	412		1		2		

CONDITIONS TO BE COMPLETED PRIOR TO THE ISSUANCE OF A SEPTIC PERMIT

Potable Water Source: Public Water Supply

Water District: Ramona Municipal Water District

DEHQ Grading Inspection: Waived

DEHQ Building Plan Review:

COMMENTS: PROPOSED 4 BR SFD. High groundwater lot.
Approved for 1500 gallon septic tank preceding Advantex AX-20RT supplemental treatment tank dispersed to 412' drip lines.
No grading proposed.
Prior to septic permit issuance:
Record master covenant and agreement
Septic permit application signed by septic designer and licensed contractor
Building plan review

THE SEPTIC CONTRACTOR SHALL CONTACT THE DESIGN ENGINEER PRIOR TO INSTALLATION OF ANY SYSTEM COMPONENTS AND COORDINATE NECESSARY INSPECTION(S) BY THE ENGINEER.

FINAL APPROVAL SHALL REQUIRE:

- **WRITTEN CERTIFICATION AND AS BUILT FROM DESIGN ENGINEER**
- **TELEMETRY**
- **COPY OF MAINTENANCE AGREEMENT**
- **OBTAIN AN ANNUAL OPERATING PERMIT**

County of San Diego

Department of Environmental Health and Quality

Land and Water Quality

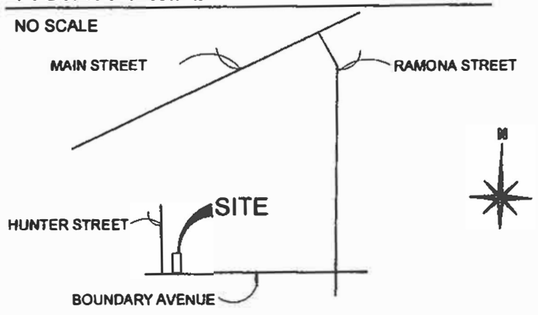
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www.sdcdehq.org

Approved By: Cara Schiksnis **Date:** 2/27/2026

VICINITY MAP

NO SCALE



Department of Environmental Health & Quality
Record ID: DEH2025-LOWTS-020469
The onsite wastewater treatment system design approval expires on 2/27/28. Any changes to the structures, grading, driveways, stormwater devices, or other constraints on the property may void this approval.
Cara Schiksnis 2/27/2026
Specialist Date

PROPOSED SYSTEM:

A NEW PRIMARY AND RESERVE SYSTEM FOR
A PROPOSED 4 BEDROOM SFD
TO UTILIZE A NEW ADVANTEX DRIP ADVANCED TREATMENT SYSTEM
(SEE CALCULATIONS ATTACHED).
THE BASE OF THE SSBA TO BE PLACED AT 12" BELOW GRADE.
1 NEW 1500 GALLON SEPTIC TANKS TO BE INSTALLED AS SHOWN.

OWNER

BAKER FAMILY 2010 TRUST, TRUST B
LINDA KAYE GUTMAN, TRUSTEE
116659 WINDCREST DR.
FONTANA, CA 92337

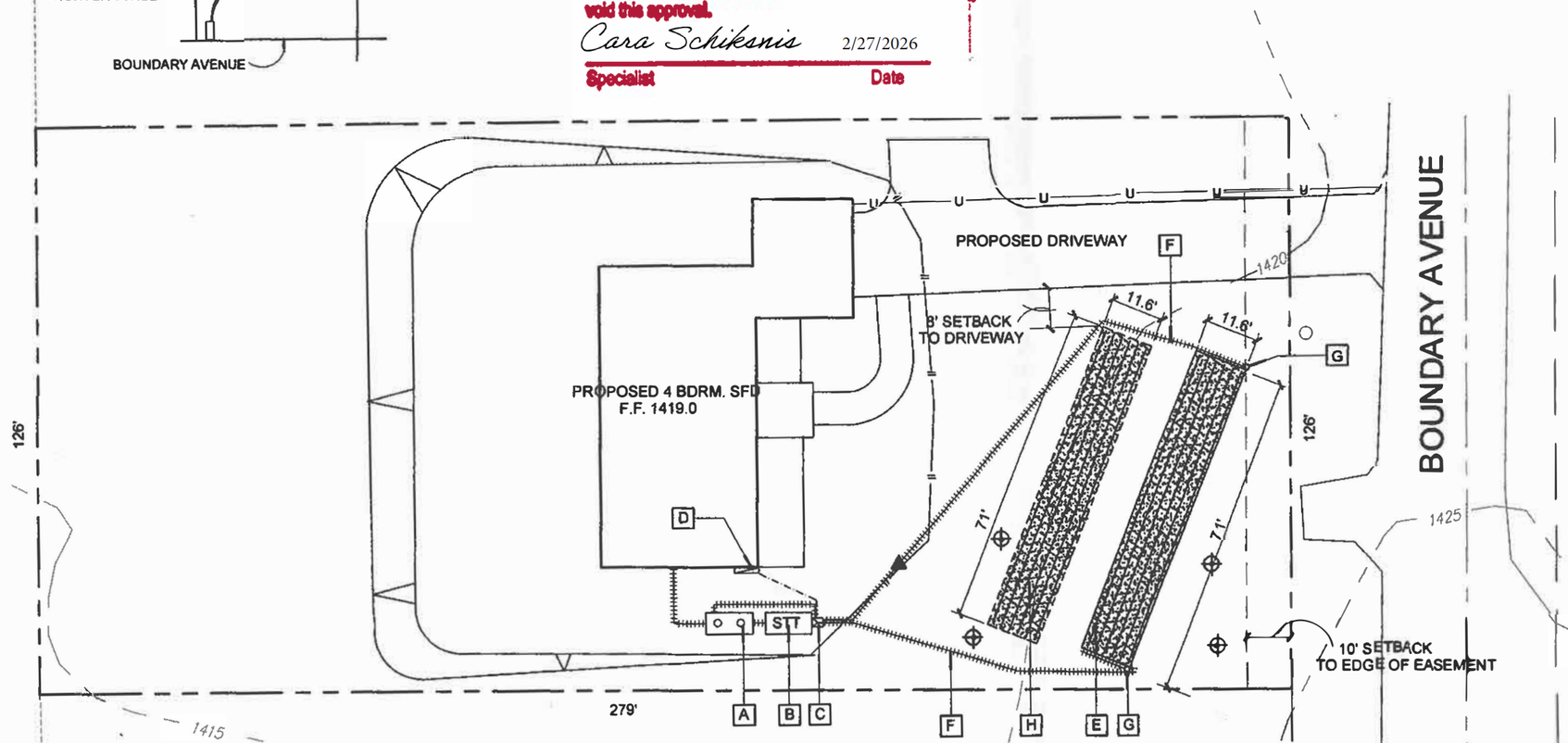
LEGAL

A.P.N. 282-251-20

WATER DISTRICT:
RAMONA WATER DIST.

LEGEND:

EXIST. CONTOURS
PRIMARY AREA TO UTILIZE AN ADVANTEX SYSTEM FOR 4 BDRM. SFD SSBA = 823 S.F. 412 L.F. DRIPLINE [E]
RESERVE AREA TO UTILIZE AN ADVANTEX SYSTEM FOR 4 BDRM. SFD SSBA = 823 S.F. 412 L.F. DRIPLINE [H]
PROPOSED FILL SLOPE
EXISTING FILL SLOPE
EXISTING CUT SLOPE
PROPERTY LINES
EXIST. WATER LINE
SURFACE BOULDERS
PVT. UTILITY TRENCH
TEST HOLE LOCATIONS
OBSERVATION HOLE
GUNITE BROW DITCH PER PER S.D.R.S.D. D-75
PROP. SEPTIC TANKS (1500 GAL.) [A]
PROP. SUPPLEMENTAL TREATMENT TANK [B] STT
PROP. HEADWORKS [C]
PROP. CONTROL PANEL [D]
PROP. TIGHT LINES / SUPPLY & RETURN LINES [F]
PROP. AIR VACUUM BREAKER [G]



PREPARED BY:

SAN DIEGO SEPTIC DESIGN & TESTING
P.O. BOX 3120
ESCONDIDO, CA 92033
PH. (760) 518-5763
sandiegodesigners2@gmail.com

I CERTIFY THAT THE LAYOUT SHOWS ALL PUBLIC WATERLINES WITHIN 20 FEET OF THE LOT BOUNDARIES.

10/02/2025
STEVE MURCKO DATE

REGISTERED ENVIRONMENTAL HEALTH SPECIALIST
TODD WALSH
NO. 5683
EXPIRES: 12/31/26
STATE OF CALIFORNIA
Todd Walsh
2/11/26

SEPTIC LAYOUT

SCALE 1" = 30'

SEPTIC SYSTEM LAYOUT

OWNER: BAKER FAMILY 2010 TRUST, TRUST B — A.P.N. 282-251-20
PROJECT ADDRESS: 0 BOUNDARY AVENUE, RAMONA CA
PREPARED BY: SAN DIEGO SEPTIC DESIGN & TESTING
P.O. BOX 3120 ESCONDIDO, CA 92033 PH. (760) 518-5763
DESIGNER: TODD WALSH REHS 5683 DRAFTED BY: STEVE MURCKO

S1

COUNTY OF SAN DIEGO
DEPARTMENT OF ENVIRONMENTAL HEALTH
PERCOLATION TEST REPORT

DEH Control #:
Date:
Activity Code:

Assessor's Parcel #: APN 282-251-20-00 Map #: BY DEED, NOT VERIFIED Lot #: -----

Site Address: NKA BOUNDARY ROAD Town: RAMONA Zip Code: 92026

Owner: BAKER FAMILY 2010 TRUST B 04/15/10 Phone: C/O DON GARDENER 760-445-3555

Mailing Address: 1444 MAIN STREET NO 187, RAMONA CA 92065 DON@SD4U.COM

Test Hole	Test Depth	Stabilzed Rate	Test Hole	Test Depth	Stabilzed Rate	Test Hole	Test Depth	Stabilzed Rate	ASSIGNED Perc Rate
PT-101	12"	15							15 MPI
PT-102	12"	9							0.729 GAL/SQFT/DAY
PT-103	12"	8							
PT-104	12"	11							

TYPE OF SOIL: (clay, silt, sand, decomposed granite, etc.)
DEEP HOLE 100
0-3' SILTY LOAM
3' 15' CLAYEY LOAM
15'-22' CLAY, DARK BROWN, SOME SANDS

Depth to Refusal: NOT ENCOUNTERED TO 22' Depth to Groundwater: FEBRUARY 9, 2022 4'-7' BELOW GRADE

RECOMMENDATIONS: USED DESIGN PERC RATE OF 15 MPI AND APPLICATION RATE OF 0.729 SQFT/GAL/DAY

FOR A 3 BEDROOM SINGLE FAMILY HOME WITH A DESIGN PEAK FLOW OF 450 GALLONS PER DAY
DISPOSAL FIELD = 450 GAL PER DAY / 0.729 SQFT/GAL/DAY = 618 SQFT
DRIP LINES AND DRIP EMITTERS SPACED APART ON CENTER MINIMUM AT A DEPTH OF 12" BELOW NATURAL GRADE
PROVIDE AN NSF-40 APPROVED SUPPLEMENTAL TREATMENT SYSTEM WITH A MINIMUM PEAK FLOW CAPACITY OF 450
CONNECT SAID STS TANK TO AN EFFLUENT PUMP TANK WITH A MINIMUM OF 450 GALLON OF EMERGENCY STORAGE
SYSTEM SHALL BE DESIGN TO MEET SAN DIEGO COUNTY DEH SEPTIC CODES
PROVIDE FOR 100% RESERVE

NOTE: A PERC TEST IS NOT A SEPTIC APPROVAL. A SEPTIC LAYOUT INDICATING TOPOGRAPHY, SITE DEVELOPMENT UTILITIES, PROPERTY LINES AND EASEMENTS MUST BE SUBMITTED AND APPROVED BY DEH.
AT THE TIME OF THE SEPTIC LAYOUT SUBMITTAL, DEH SHALL EVALUATE SITE CONSTRAINTS, SOIL AND GROUNDWATER CONDITIONS THE REVIEW AT THAT TIME WILL TAKE PRECEDENCE OVER PRIOR DEH CORRESPONDENCE
DEPENDING ON THE TIME OF YEAR AND SEASONAL RAINFALL PATTERNS, DEH MAY REQUIRE ADDITIONAL SITE MONITORING
THIS PERCOLATION TEST REPORT DOES NOT GUARANTEE APPROVAL OF ANY SPECIFIC SITE DEVELOPMENT OF THE RECOMMENCED DESIGN HERE-ON.

REGISTERED PROFESSIONAL ENGINEER
KEVIN PATRICK BRESNAHAN
No. C59954
Exp. 06/30/2024
CIVIL
STATE OF CALIFORNIA

WATER SUPPLY:

Source of Potable Water: RAMONA MUNICIPAL WATER DISTRICT Well Permit Number: N/A

Registered CE, PE, Geologist, REHS: KEVIN BRESNAHAN RCE 59954

Address: 3031 RIDGE CREEK DRIVE- FALLBROOK CA 92028 Phone: 951-532-6371 Date: 02-09-24

FOR DEPARTMENTAL USE ONLY

APPROVED: YES X NO ____ DATE 2/27/2026 FINAL MAP REQUIRED: YES ____ NO ____

Specialist: Cara Schiksnis

Bldg. Plan Review: DATE

Grading Review: DATE OCT 27 2025

Water Analysis Results: DATE

RECEIVED

Septic Layout New
Proposed 4BR SF

OWTS Layout and Design Report – Residential Project
Page 1

DEHQ Use Only

RECORD ID #: DEH 2025 LOWTS 020409

DATE RECEIVED: 10/31/25

SECTION A – GENERAL INFORMATION *Required for All Projects*

PROJECT LOCATION:	0 Boundary Avenue	CITY: Ramona	APN: 282-251-10
OWNER NAME:	Linda Kaye Gutman, Trustee of the Baker Family Trust, Trust B		PHONE: (909) 938-3915
OWNER MAILING ADDRESS:	0 Boundary Avenue, Ramona CA		EMAIL: csgutman@gmail.com
BUSINESS MAILING ADDRESS:			
QUALIFIED PROFESSIONAL COMPANY NAME:	Todd Walsh		PHONE: (760) 580-5079
QUALIFIED PROFESSIONAL ADDRESS:	P.O. Box 3120 Escondido, CA 92033		
QUALIFIED PROFESSIONAL NAME:	Todd Walsh		EMAIL: sandiegodesigners2@gmail.com
QUALIFIED PROFESSIONAL TITLE:	REHS	LICENSE/REGISTRATION TYPE: REHS 5683	

SECTION B – PROJECT LOCATION INFORMATION *Required for All Projects*

DESCRIPTION OF THE GENERAL PROJECT LOCATION: (ATTACH vicinity map)
See attached

Contact Owner Before Site Visit? ☑ Yes ☐ No
Locked Gate/Access Issues? ☑ Yes ☐ No

DESCRIPTION OF PARCEL: (ATTACH layout diagram or separate diagram, if needed to show entire parcel)
see attached

Assessor's Parcel Number: 282-251-20	Parcel Acreage: 0.78
Parcel or Tentative Map and Lot Number:	Plat Number:

SECTION C – PROJECT TYPE INFORMATION *Required for All Projects*

PROJECT TYPE:
☑ Primary Residence ☐ Second Unit Dwelling/Accessory Dwelling Unit ☐ Other:
☑ New OWTS ☑ Replacement OWTS ☐ Repair/Modification OWTS
Does Project Include Tying a New Dwelling Unit into Existing OWTS? ☐ Yes ☑ No

OTHER PERMIT INFORMATION: (PDS Record ID: Building Permit/Discretionary Permit)

PROJECT DESCRIPTION: (Description should match the description provided in the building permit or discretionary permit application)
A new elevated Presby system for a new residence

GRADING INFORMATION: Does the project include grading of the site? Check Yes even if a grading permit is not required. ☑ Yes ☐ No

If yes, provide description location/areas, purpose and timing of proposed grading activities. Include grading permit # and ATTACH grading plans, if applicable.
future grading for a building pad

SECTION D – RESIDENTIAL SCOPE *Required for All Projects*

DESCRIPTION OF RESIDENTIAL SCOPE: Provide a description of the existing and proposed residential units, the number of bedrooms for each unit, and the OWTS that serves each unit. All residential units and their OWTS to be labeled and shown on layout diagram.
A new residence with an elevated Presby primary and reserve

ATTACH: Diagram showing locations and labels of all buildings (if not included in the layout diagram)

# Existing Residential Units:	1	Total # Existing Bedrooms:	4	# Existing OWTS:	1
# Proposed Residential Units:	0	Total # Proposed Bedrooms:	0	# Proposed OWTS:	0
# Total Persons served:	4	NOTE: If OWTS serves 20 or more persons, then it may be a Class V Underground Injection Well per EPA. If so, register system with EPA and provide copy of registration.			

COUNTY OF SAN DIEGO
DEPARTMENT OF ENVIRONMENTAL HEALTH AND QUALITY
LAND AND WATER QUALITY DIVISION

OFFICIAL INSPECTION REPORT

Facility Name/Type:	APN:	Inspection Date:
RESIDENTIAL (VACANT)	282-251-20-00	2/6/2024

Inspection Address or Location:	City:	Zip Code:
BOUNDARY AVENUE	RAMONA	

Owner/Operator Name and Address:	Phone #:
NANCY BAKER	(562) 447-6649

Type of Inspection: ☐ Complaint ☑ Consultation ☐ Reinspection ☐ Other

Program:	Record ID#:
Land Use	DEH2024-LCSLT-001558

Nature of Complaint/Consultation:

CONSULTATION:

Property is located in a high groundwater area, and is one of the few vacant lots remaining. Property owner hired Kevin Bresnahan to install deep borings and request an official opinion from DEHQ regarding whether Supplemental Treatment is feasible on said property.

Observations/Comments:

Deep Boring readings as follows:
12/08/2023, total depth 19'3", ground water 9'3" below ground surface
01/23/2024, total depth same, ground water 10'1" below ground surface

APN 282-251-22 (formerly ending in 58) is located directly north of the property of concern. Groundwater monitoring occurred at the northern lot over the 2004-2005 rainfall season which was a normal to above average rainfall period. The highest anticipated groundwater level established at that time was 6'8" 04/26/2005.

The Registered Civil Engineer, Kevin Bresnahan, stated that the elevation of the proposed STS at the property of concern would be "similar" to that of elevation on the east end of APN 282-251-22. Furthermore, it has been stated that the proposed dispersal field would be drip lines at 6" burial depth.

Corrective Actions/Recommendations:

DEHQ has no objection to evaluation of a supplemental treatment system at the property of concern. Do not remove the deep boring that has been installed at the property, as DEHQ may use it to collect more groundwater data.

Please submit a septic layout to LWQDuty.DEH@sdcounty.ca.gov when ready. Note that a subsequent septic permit must be obtained to install the supplemental treatment system if it is approved. Additionally, once the supplemental treatment system is installed, an Annual Operating Permit must be pulled, then renewed annually.

Please contact LWQDuty.DEH@sdcouty.ca.gov if there are any questions regarding the fee or septic permitting process.

Correct By:

Be advised DEHQ bills for time spent on justified complaints at our hourly rate. This includes time spent on investigation, travel time, correspondence, follow up, and enforcement.

Inspected By:	Phone:	Email:
Brandi Coley	619-207-7436	brandi.coley@sdcounty.ca.gov

Received By:	Phone:	Email:
Nancy Baker	562-447-6649	poohnmelinda@yahoo.com

FIELD FLOW

Job Description:	*0 Boundary Road, Ramona CA*
Contact:	*Todd Walsh*
Prepared by:	
Date:	*1-Dec-25*

Please fill in the shaded areas and drop down menus:
This spreadsheet is a guide for small systems with residential waste & is not a cor

Worksheet 1- Field Flow

Total field

Total Quantity of effluent to be disposed per day	600	gallons / day
Hydraulic loading rate	0.729	gallons / sq.ft. / da
Minimum Dispersal Field Area	823	square ft.
Total Dispersal Field Area	823	square ft.

Flow per zone

Number of Zones	1	zone(s)
Dispersal area per zone	823	square ft.
Choose line spacing between WASTEFLOW lines	2	ft.
Choose emitter spacing between WASTEFLOW emi	2	ft.
Total linear ft.per zone (minimum required)	412	ft. per zone
Total number of emitters per zone	206	emitters per zone
Select Wasteflow dripline (16mm)	Wasteflow PC - 1 gph	dripline
	Wasteflow Classic	
	Wasteflow PC - 1/2gph	
	Wasteflow PC - 1 gph	
Pressure at the beginning of the dripfield	25	psi
Feet of Head at the beginning of the dripfield	57.75	ft.
What is the flow rate per emitter in gph?	1.02	gph
Dose flow per zone	**3.50**	**gpm**

Note: A few States or Counties require additional flow for flushing. Please check your local regulat
Flush velocity calculation below is for PC dripline. Classic dripline requires less flow to flush than I
Please refer to Geoflow's spreadsheet "Design Flow and Flush Curves" at www.geoflow.com or call

If required, choose flush velocity	0.5	ft/sec
How many lines of WASTEFLOW per zone?	6	lines
Fill in the *actual* length of longest dripline lateral	69	ft.
Flush flow required at the end of each dripline	0.37	gpm
Total Flow required to achieve flushing velocity	2.22	gpm
Total Flow per zone- worst case scenario	**5.72**	**gpm**

Select Filters and zone valves

Select Filter Type	BioDisc Filter	
Recommended Filter (item no.)	BioDisc Filter-150	1.5in < 30 gpm
Select Zone Valve Type	None	
Recommended Zone Valve (item no.)	0	0

Dosing

Number of doses per day / zone:	12	doses
Timer ON. Pump run time per dose/zone:	14.18	mins:secs
Timer OFF. Pump off time between doses	1:45	hrs:mins
Per Zone - Pump run time per day/zone:	2:51	hrs:mins
All Zones - Number of doses per day / all zones	12	doses / day

PUMP SIZING

Job Description:	*10250 Verdugo Road*
Contact:	*David Caron*
Prepared by:	
Date:	*10/18/2023*

Please fill in the shaded areas and drop down menus:

This spreadsheet is a guide for small systems with residential waste & is not a com

Pressure losses may be grossly overstated, particularly if designing with WASTEF

The letters on the diagram(right) match the letters in section 2 below.

Worksheet - Pump Sizing

Section 1 - Summary from Worksheet 1

	Flow required to dose field	3.50 gpm
	Flow required to flush field	2.22 gpm
	Flow required to dose & flush field	5.72 gpm
	Filter	BioDisc Filter-150
	No. of Zones	1 zones
	Zone valve	-
	Dripline	Wasteflow PC - 1 gph
	Dripline longest lateral	68.59 ft.

Section 2		Ft of head	Pressure
A. Flush line - Losses through return line			
	Select Pipe from dropdown menu	PVC schedule 40	
	Select Flush Line Diameter	1-1/4" inch	
	Length of return line	172 ft.	
	Equivalent length of fittings	5 ft.	
	Elevation change. (if downhill enter 0)	8 ft.	
	Pressure loss in 100 ft of pipe	0.10 ft.	0.04 psi
	Total pressure loss from end of dripline to return tan	*8.2 ft.*	3.54 psi
B. Dripline - Losses through Wasteflow dripline			
	Length of longest dripline lateral	69 ft.	
	Minimum dosing pressure required at end of dripline	23.10 ft.	10.00 psi
	Loss through dripline during flushing	1.29 ft.	0.559 psi
	Total minimum required dripline pressure	*24.39 ft.*	10.56 *psi*
A+B. Minimum Pressure required at beginning of dripfield			
	CALCULATED pressure required at beginning of dri	*32.57 ft.*	14.10 *psi*
	SPECIFIED pressure at beginning of dripfield (from	57.8 ft.	25.00 *psi*
	Great! SPECIFIED Pressure is greater than CALCULATED Pressure requirement. Go to next step		
C. Drip components - Losses through headworks			
	Filter	11.6 ft.	5.00 psi
	Zone valve pressure loss (not in diagram)	- ft.	- psi
	Flow meter pressure loss (not in diagram)	ft.	- psi
	Other pressure losses	ft.	- psi
	Total loss through drip components	11.55 ft.	5.00 psi
D. Supply line - Minimum Pressure head required to get from pump tank to top of dripfield			
	Select Pipe from dropdown menu	PVC schedule 40	
	Select Supply line diameter	1-1/2" Inch	
	Length of supply line	200 ft.	
	Equivalent length of fittings	5 ft.	
	Height from pump to tank outlet	5 ft.	
	Elevation change. (if downhill enter 0)	-8 ft.	
	Pressure loss/gain in 100 ft. of pipe	0.28 ft.	0.12 psi
	Total gain or loss from pump to field	*(2.4) ft.*	(1.05) psi
	Total dynamic head	66.9 ft.	28.95 *psi*
	Pump capacity * - Field Flush Flow	5.7 gpm	28.95 *psi*
	- Field Dose Flow	3.5 gpm	
	- Filter Flush Flow	- gpm	- *psi*
	Pump Model Number		
	Volts / Hp / phase		

* Note: Pump capacity flow assumes flow in dripline does not change during a dose cycle. With Wasteflow
For more accurate flows please see Geoflow's **Flushing worksheet.**

If you need assistance designing for this additional flow, please

a. See Geoflow flushing worksheet or

b. Contact Geoflow at 800-828-3388.

Supplemental Treatment System Components For Proposed Pressure Drip Dispersal

A Orenco Meander Tank 1500 gallon two chamber septic tank (or equal) with effluent filter

B Advantex Pump Disharge Treatment System by Orenco Systems Inc.
Model – AX20RT Mode 1B with 12" Grade Extension
(See attached Technical Data Sheet and attached drawing schematic)
Use 12" Watertight grade extensions to accommodate 24 hour emergency storage
(See attached Volume Guidelines)
Use Discharge Pump – Orenco PF200511 High Head Effluent Pump @ 20 GPM

C WHW Sporty Headworks – Includes Bio Disc Filter, Field Flush Filter, Headwork Air Vent, Filter Flush Valve, Pressure Gage and Headwork Box (Flow Meter Optional)

D Vericomm AXB Control Panel Configured to be compatible with Geoflow Automatic Headwor Valves.

E Wasteflow Dripline with Rootguard and UltraFresh protection by GEOFLOW
Use pressure Compensating 1" Gph Dripline with 2 foot emitter spacing

F Use Typical PVC Supply and Return/ Flush lines and fittings

G Air Vacuum Breaker Inside Buried Valve Box
Use One air Vacuum Breaker at highest point of supply line manifold
Use One Air Vacuum Breaker at highest point of flush line manifold.
Use in-line check valves and air breakers as necessary.

H. Reserve Leach Field utilizing identical components found in Section 'E' listed above.

Contact for Product Purchasing:

BIOSOLUTIONS

Steve Braband

5310 Derry Ave. Suite E
Agoura Hills, CA 91301
818 991 9997 Ex 203
sbraband@biosolutions.org
www.biosolutions.org

GEOFLOW PARTS LIST

Job Description:	#VALUE!
Contact:	#VALUE!
Prepared by:	#VALUE!
Date:	#VALUE!

Some of the following parts list will "self fill" as a guide and should not be construed as a complete parts list. Check item numbers and quantities against design layout.
Most "Item Number" cells have a drop down menu to select from. Just click mouse on the desired cell to find dropdown arrow
Recommended list prices are subject to change. For actual prices contact your local Geoflow dealer
Prices for large systems may be overstated in this scenario

Worksheet 3 - Parts List

Qty	Units	Item Number	Description		
Dripline					
412	ft.	WFPC16-4-24	Wasteflow PC . 1 gph, 24 in. emitter spacing		
Airvent and box					
2	ea.	APVBK-1	1" airvent for use on zones less than 50gpm		
2	ea.	AV BOX 6 inch	6" round box		
Pressure Regulators - Use to keep pressure from being too high					
1	ea.	Select	Restricts pressure from exceeding required pressure. Required with Classic dripline.		
Controllers					
1	ea.		Select Controller from list left		
Pre-assembled Headworks					
Select from cell with		BioDisc Filter			
0	-	WHWS-V-1F-A	Sporty Headworks box & guts with 1" Vortex Filter. Automatic flush		
1	ea.	BIODISC Filter Headworks	-		
0	-	GEOVAC filter Headworks	-		
* **Solenoid Flush valves - Select only if Headworks is not selected above**					
	ea.	SVLV-B-100	Flush valves		
* **Filters - Select only if Headworks is not selected above**					
	ea.	BioDisc Filter-150	0		
* **Pressure Gauges - Select only if Headworks is not selected above**					
	ea.	PG-25-Lead	Presssure gauge with lead		
Flow Meters					
1	ea.	Flow Meter - Digital Display	Select Flow Meter		
Zone valves -					
0	ea.	0	0		
Dripline fittings - Quantities below are estimates only.					
12	ea.	LTSLIP-600	Lockslip Adapter. 3/4" PVC slip to Wasteflow dripline		
2	ea.	LTC-600	This adds 2 couplings for each coil ordered.		
	ea.	LTTEE-600	Lockslip Tee. Fits 16mm Wasteflow dripline		
	ea.	LTELL-600	Lockslip Elbow. Fits 16mm Wasteflow dripline		
	ea.	LTFlex-R-18	18" flex PVC riser with 1 lockslip adapter. Used for risers		
	ea.	LTFlex-L-36	36" flex PVC with 2 lockslip adapters. Used for risers or loops		
Check Valves - Check design for quantities					
	ea.	CV-B-10	1" True Union ball check PVC/Viton		
	ea.	Spring check	Select size from drop down menu left		
Unions					
	ea.	Unions	0		
				Subtotal	

Non-Geoflow Items

	ea.	Pump Capacity (gpm) TDH (ft)	66.87 gpm 5.72 ft of head		
	ea.	Pump tank	Fill in description		
	ea.	Floats	Fill in description		
	ft.	PVC mainline	Fill in description		
	ft.	PVC Supply manifold (inches)	1-1/2" " PVC pipe		
	ft.	PVC Return manifold (inches)	1-1/4" " PVC pipe		
6	ea.	PVC Supply manifold tees	1-1/2" " x 3/4" " tees		

Reference: County of San Diego Local Management Program (LAMP), Chapter 8.7.1.1 – 8.7.4.6

Construction Requirements for Drip Dispersal Systems

1. An STS must be installed by a licensed qualified service provider certified to install the specific STS proposed and the system must be installed according to the qualified professional's specifications for location, components, size and depth.

2. The natural soil cover over a drip dispersal system shall be at least 6 inches but no greater than 12 inches.

3. The drip dispersal system shall be covered with vegetation to allow for uptake of nutrients from the wastewater.

4. The drip dispersal system shall be designed and maintained to reduce orifice clogging and root intrusion.

5. The drip dispersal system shall be designed. located and maintained to prevent vehicular traffic over it.

6. The setbacks required between drip dispersal systems and other components of the OWTS as well as structures, property lines, easements, watercourses, wells, or grading shall be the same as required for leach lines with the exception that the setback to structures and property lines can be reduced to 2 feet. See the setback table found in Chapter I of this LAMP for the complete list of setbacks.

7. The maximum slope allowed for the installation of a drip dispersal system shall bo 40 percent.

8. Drip dispersal systems are pressure distribution systems and head toss calculations shall be provided to ensure proper hydraulic pressure at the emitter.

9. Drip dispersal system emitter lines shall be designed as a continuous loop circuit with no dead ends.

10. Vacuum release valves shall be installed at the high point of the emitter lines.

11. The maximum longitudinal emitter spacing on an emitter line shall be 2 feet. The maximum spacing between a4jacent emitter lines in an absorption bed configuration shall be 2 feet.

12. Drip dispersal systems shall be time dosed over a 24-hour period. Demand control dosing shall override timed dosing in periods of flow where timed dosing cannot accommodate the excessive flow.

13. Drip dispersal systems shall be designed to have a minimum operating pressure at the emitter head of 10 pounds per square inch (psi, a maximum operating pressure of4S psi, a maximum system operation pressure of 60 psi□ and a maxi1num discharge rate per emitter of 1.5 gallons per hour.

14. Alt drip dispersal systems shall incorporate an automatic mechanism for backwashing or flushing the drip lines and filters.

OPERATION AND MAINTENANCE

1. All STS require an annual operating permit, issued by DEH. The annual operating permit will define the monitoring and maintenance requirements as specified by the manufacturer and/or qualified professional who designed the system.

2. An operation and maintenance manual shall be provided by the qualified professional that includes the qualified professionals name, address, telephone number, and business and professional license number. A copy shall be maintained at the site and shall be available to the qualified service provider.

3. All STS must be maintained by a qualified service provider and a maintenance contract must be kept in place throughout the life of the STS.

4. All STS require, at a minimum, biannual inspections by the qualified service provider to ensure proper operation and maintenance of the system. Copies of the inspection results shall be provided to the DEH within 30 days of the inspection being completed.

5. The drip dispersal system shall be flushed once every three months for the first year or until vegetation is established, whichever occurs first. Flushing shall occur every six months thereafter.

6. The qualified service provider shall be responsible for responding to alarms and performing telemetric monitoring of the STS, replacing faulty equipment and collecting effluent samples for quality analysis as needed.

7. All failures, malfunctions, service requests, alarms, or other instances where an STS requires the attention of a qualified service provider shall be reported to DEH within 72 hours of the incident occurring.

8. Recordation to the title and property records at the County of San Diego Recorder's Office of a Covenant and Agreement acknowledging the existence of the STS and requirements to maintain an annual operating permit and maintenance contract is required prior to final approval of the system installation.

9. Failure to maintain an annual operating permit or provide the biannual inspection results to DEH will result in enforcement action and may result in condemnation of the structure.

SYSTEM MAINTENACE – ADVANTEX

THE BEST WAY TO ASSURE YEARS OF TROUBLE-FREE LIFE FROM YOUR SYSTEM IS TO CONTINUOUSLY MONITOR THE SYSTEM AND TO PERFORM REGULAR MAINTENANCE FUNCTIONS. FOR LARGE SYSTEM OR SYSTEMS WITH A BOD > 30 MG/l AUTOMATION OF MAINTENACE IS ESSENTIAL. FOR SMALLER SYSTEMS WITH BOD < 30 MG/l INSPECTION AND MAINTENANCE SHOULD BE PERFORMED EVERY SIX MONTHS.

ROUTINE AND PREVENTATIVE MAINTENANCE

CLEAN THE FILTER CARTRIDGE. THIS MAY BE DONE WITH A PRESSURE HOSE. THE SCREEN FILTER CARTRIDGE SHOULD BE CLEANED FROM THE OUTSIDE INWARDS, WHILE THE DISCS IN THE DISC FILTER CARTRIDGE SHOULD BE SEPARATED AND THEN CLEANED. IF BACTERIA BUILDUP IS A PROBLEM, WE ADVISE FIRST TRYING LYE, AND IF THE PROBLEM PERSISTS, SOAK THE FILTER CARTRIDGE IN A CHEMICAL BATH – A MIXTURE OF 50% BLEACH AND 50% WATER.

OPEN THE FIELD FLUSH VALVE AND FLUSH THE FIELD FOR 3-5 MINUTES BY ACTIVATING THE PUMP IN "MANUAL" POSITION.
CLOSE THE FLUSH VALVE. ON AUTOMATIC SOLENOID VALVES THE MANUAL BLEED LEVER SHOULD ALWAYS BE IN THE CLOSED POSITION AND THE DIAL ON TOP SHOULD BE FREE SPINNING. THIS ALLOWS IT TO OPEN WHEN PULSED ELECTRONICALLY. CLOCKWISE ROTATION CLOSES VALVE.

WITH THE PUMP IN THE "MANUAL" POSITION, CHECK THE PRESSURE IN THE DIP FIELD BY USING A PRESSURE GAUGE ON THE SCHRADER VALVE LOCATED ON THE AIR VENTS AND BY READING THE PRESSURE GAUGE LOCATED IN THE WASTEFLOW HEDWORKS BOX. THE PRESSURE SHOULD BE THE SAME AS SHOWN ON THE INITIAL INSTALLATION RECORDS. ON SYSTEMS WITH MANUAL FLUSH VALVES, CLOSE THE THE FIELD FLUSH VALVE COMLETELY AND THEN OPEN THE VALVE SLIGHTLY UNTIL THERE IS A 1-2 PSI DROP OR DESIGN PRESSURE IS REACHED. THIS WILL ALLOW THE FIELD TO DRAIN AFTER EACH DOSE TO PREVENT THE MANIFOLD LINES FROM FREEZING.

REMOVE THE LIDS ON THE VACUUM BREAKER AND CHECK FOR PROPER OPERATION. IF WATER IS SEEN LEAKING FROM THE TOP OF THE VEACUUM BREAKER, REMOVE THE CAP OF THE VACUUM BREAKER AND PRESS DOWN ON THE BALL TO ALLOW ANY DEBRIS TO BE FLUSHED OUT. BE CAREFUL NOT TO COME IN CONTACT WITH THE EFFLUENT.

TURN OFF THE PUMP AND RESET THE CONTROLLER FOR AUTO MODE.

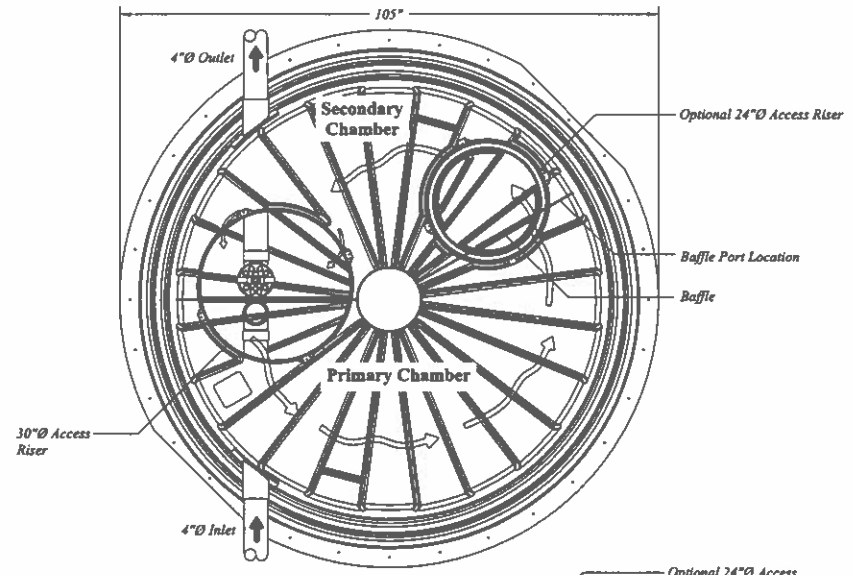
PERIODICALLY REMOVE AND CLEAN THE AIR VENTS, FIELD FLUSH AND FILTER FLUSH VALVES.

VISUALLY CHECK AND REPORT THE CONDITION OF THE DRIP FIELD, INCLUDING ANY NOTICEABLE WETNESS.

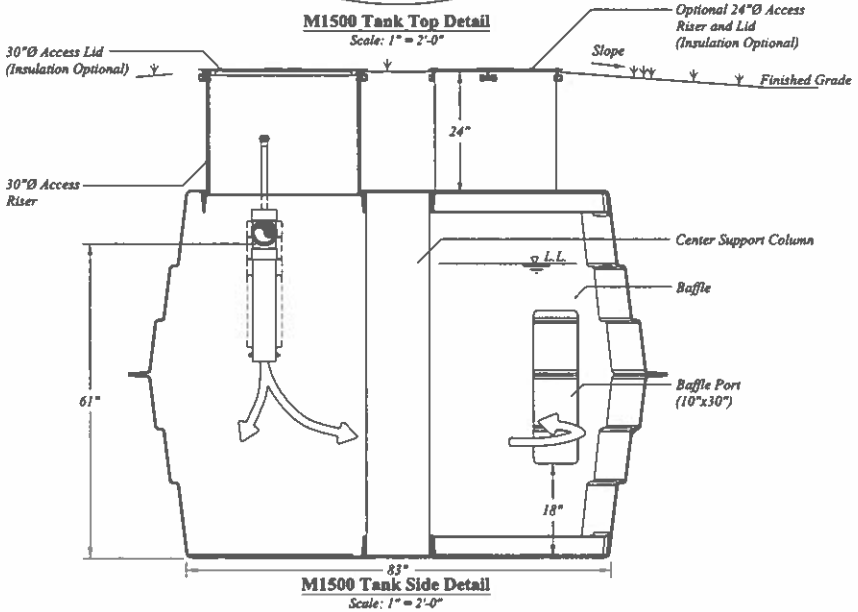
TREATMENT AND DISTRIBUTION TANKS ARE TO BE INSPECTED ROUTINELY AND MAINTAINED WHEN NECESSARY IN ACCORDANCE WITH THEIR APPROVALS.

RECORD THE ELAPSED TIME METER, PUMP COUNTER, OVERRIDE COUNTER, HIGH-LEVEL ALARM AND POWER FAILURES. THIS INFORMATION CAN BE OBTAINED FROM THE CONTROLLER.

WHEN STANDARD SEPTIC TANKS ARE USED, PUMP EVER 3 YEARS.



M1500 Tank Top Detail
Scale: 1" = 2'-0"



M1500 Tank Side Detail
Scale: 1" = 2'-0"

General Notes:

Tank Volumes:
Total Volume: 1788 gal±
Operating Volume: 1550 gal± @ 59"
Unit volume at typical Operating Depth: 25 gal./in.±
Chamber Options: 1000/500 or 876/625

Loads:
Top = 500 psf minimum
Lateral Load = 62.4 pcf, EFP
Concentrated Wheel Load = 2500 lb.
The septic tank shall be capable of withstanding long-term hydrostatic loading, in addition to the soil loading, due to a water table maintained at ground surface.
Soil Bearing = 1000 psf (re-evaluate support base if soil bearing is less or unequal)

Method of calculations:
1. Tanks shall be analyzed using strength design methods and finite element analysis for buried structures.
2. Calculations shall address the following:
- *strength*
- *buckling*
- *deflection of 0.5 - 1% of the tank diameter, based on service load (including long-term deflection lag)*
- *buoyancy*

3. Performance testing shall include vacuum testing followed by a hydrostatic test.

Material:
Resin: polydicyclopentadiene

The properties listed here along with the minimum thickness as shown in the details are considered design minimums that must be maintained during the manufacturing of the tanks. The primary strength properties are listed below:

Property	DCPD
Flexural modulus E_f	274,000 psi
Tensile strength F_t	6,700 psi
Flexural strength F_b	10,500 psi
Compressive strength F_c	9,200 psi
Shear In-Plane F_s	7,180 psi
Flexural Rigidity	585 psi

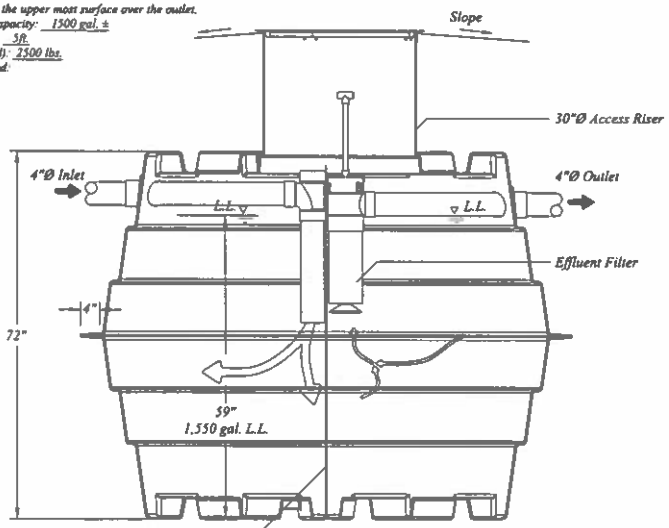
Poisson ratio = 0.400 (Any permanent metal part shall be 300 series stainless steel.)

Installation:
Installation, bedding, compaction, etc., shall be in "strict" compliance with the manufacturers standards and state or local rules and or guidelines. All tanks shall be set level on a minimum 4 inch thick compacted sand or approved granular bedding overlying a firm uniform base. The base shall be stable and uniform in order to ensure equal bearing across the tank bottom. Installations with 18 inches or less of ground cover may require additional buoyancy considerations as described in the manufacturers instructions. A minimum cover of 12 inches is required over the tank in areas subject to occasional light wheel loads.

Test:
Tanks shall be tested and certified watertight per manufacturers recommendations and or any prevailing rules or guidelines, whichever is more restrictive.

Tank Markings:
Place marking on the upper most surface over the outlet.
Nominal Liquid capacity: 1500 gal. ±
Max burial depth: 5ft.
Max traffic (wheel): 2500 lbs.
Date manufactured:
Permit no.:

Inside Height Inches	Total Gallons
71	1788
66	1714
60	1574
54	1425
48	1264
42	1090
36	906
30	721
24	544
18	382
12	230
6	89
0	0



End Detail
Scale: 1" = 2'-0"

Orenco SYSTEMS

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Portions or all of this Proposed System Configuration Drawing, as appropriate, may be reproduced and integrated into the site-specific layout and configuration of a system by its designer.

Disclaimer: This Proposed System Configuration Drawing is provided solely as a design aid and illustrates one possible configuration of a system that would comply with Orenco's design criteria for the requirements and/or specifications that have been communicated to Orenco (based on third-party standards testing protocols and performance reports, as applicable). Design decisions, including the actual layout and configuration of the system and its viability for the project, are at the sole discretion of the system's designer.

Meander Tank 1500 Gravity with Effluent Filter	Drawn By: BAS	Scale: 1" = 2'-0"	
	Reviewed By: AY	Sheet: 1 OF 1	
DESIGN AID	File Name: DR6263.DWG	Rev: 1.0	Date: 1/22/2021

Pump Selection for a Non-Pressurized System - Single Family Residence Project

0 Boundry / Discharge Pump

Parameters

Discharge Assembly Size	1.25	inches
Transport Length	200	feet
Transport Pipe Class	40	
Transport Line Size	1.25	inches
Distributing Valve Model	None	
Max Elevation Lift	8	feet
Design Flow Rate	5.7	gpm
Flow Meter	None	inches
'Add-on' Friction Losses	57.6	feet

Calculations

Transport Velocity	1.2	fps

Frictional Head Losses

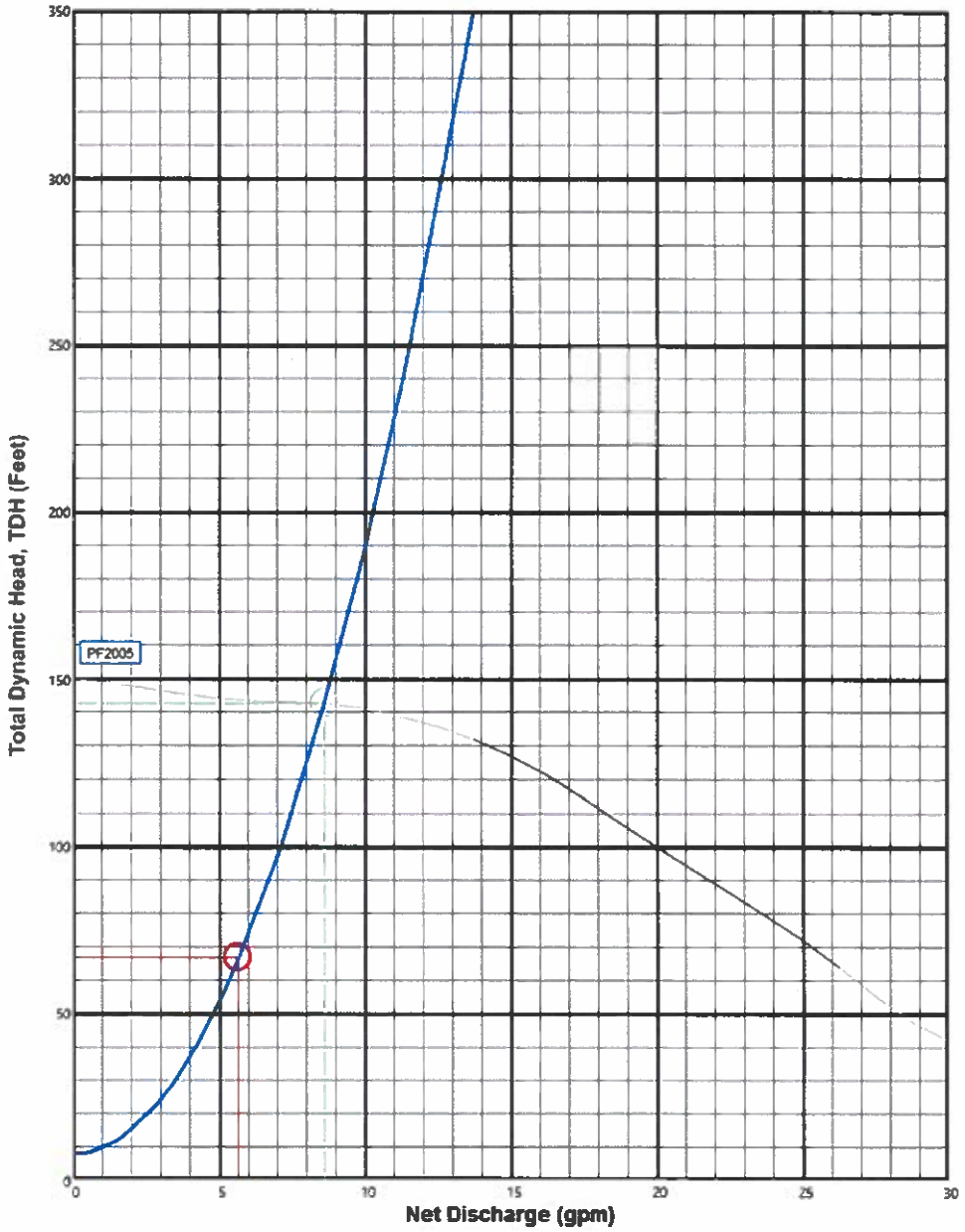
Loss through Discharge	0.2	feet
Loss in Transport	1.0	feet
Loss through Valve	0.0	feet
Loss through Flowmeter	0.0	feet
'Add-on' Friction Losses	57.6	feet

Pipe Volumes

Vol of Transport Line	15.5	gals

Minimum Pump Requirements

Design Flow Rate	5.7	gpm
Total Dynamic Head	66.9	feet



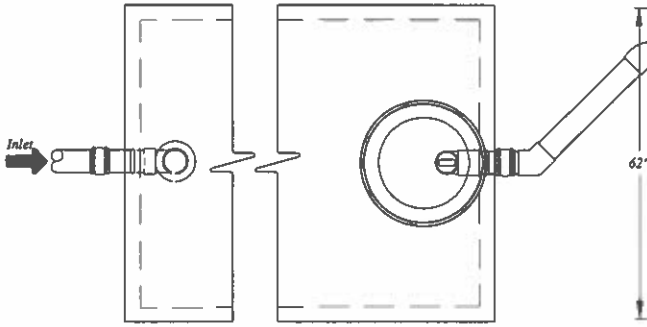
AX20RT Treatment System - Pump Discharge

Design Notes

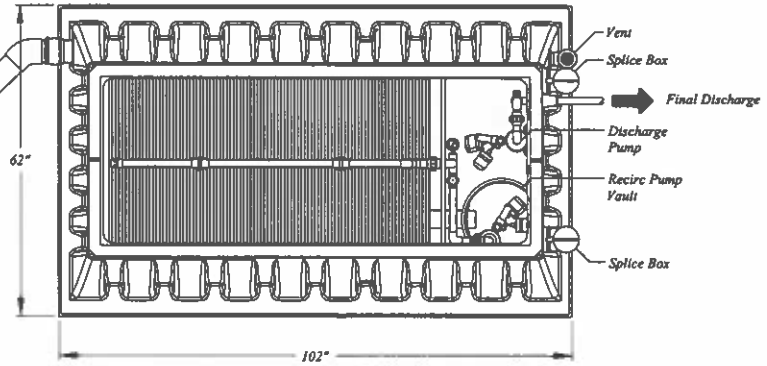
For residential strength waste up to 4 bedrooms.

Installation to be performed by an AdvanTex Authorized Installer only.

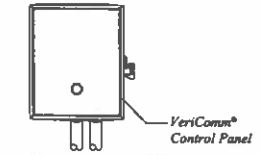
Start-up and service to be performed by an AdvanTex Authorized Service Provider only.



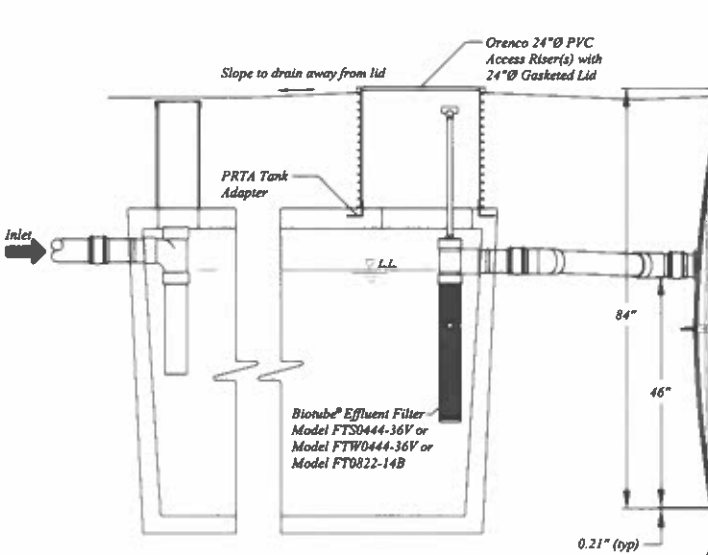
1000 gal. Primary Tank - Top View



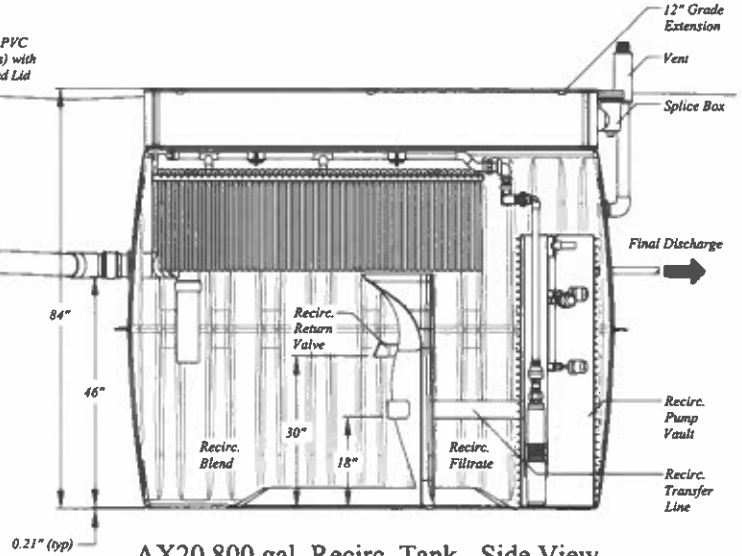
AX20 800 gal. Recirc. Tank - Top View



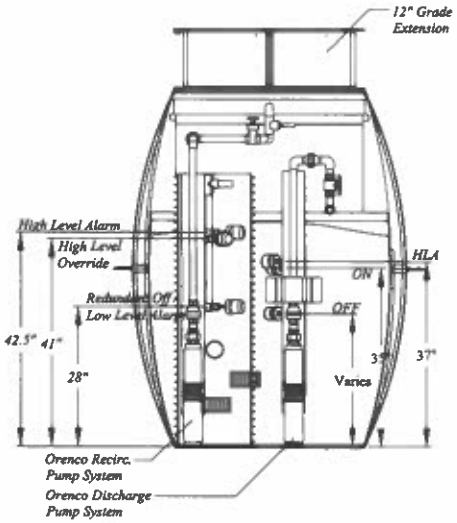
Control Panel Detail
Not To Scale



1000 gal. Primary Tank - Side View



AX20 800 gal. Recirc. Tank - Side View

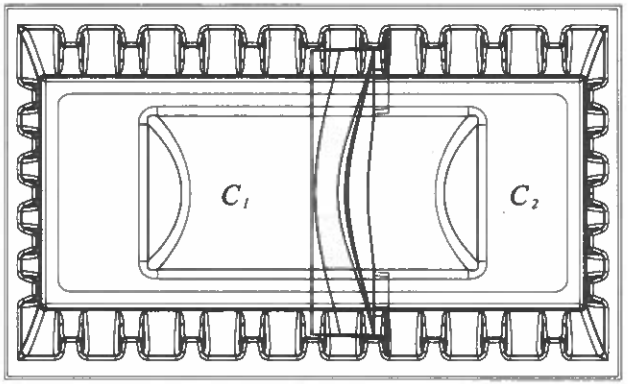


Discharge Chamber - End View

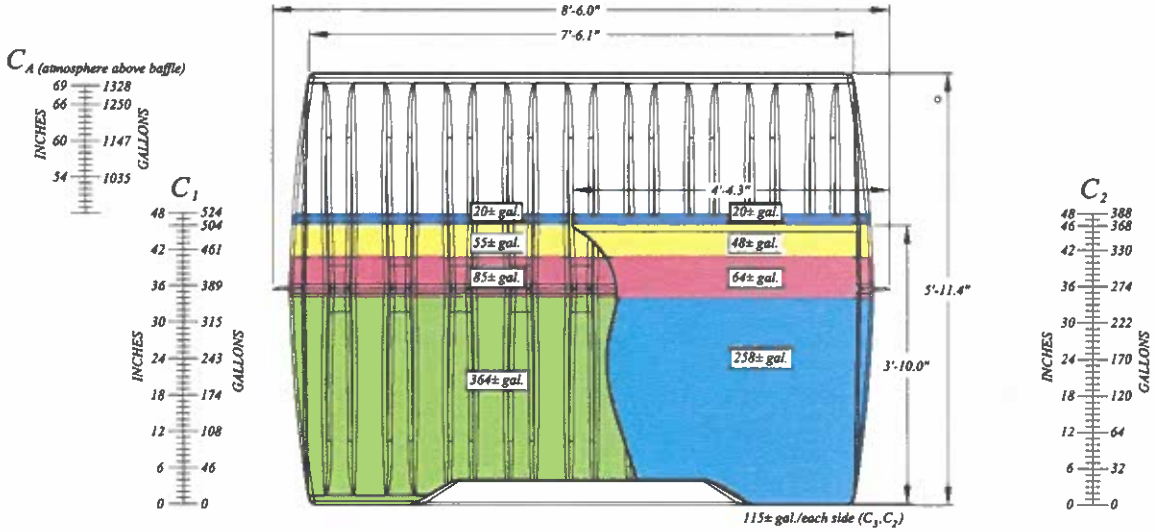
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UNAUTHORIZED CHANGES & USES Orenco has prepared these drawings for use by the design engineer. Orenco will not be responsible or liable for unauthorized changes to or uses of these drawings. All changes to these drawings must be made in writing and must be approved by the design engineer	*PRODUCT CONFIGURATION DRAWINGS*	Orenco® Orenco Systems®, Incorporated	Drawn By: *BEN SMITH* Drawn For:	Project: AX20RT Mode 1B with 12" Grade Extension Title: NDW-ATX-RT-STD-31	Scale: *1" = 2'-0"* Sheet: *1 OF 1* Rev: *A-01* Date: *7/23/2015*

800 gal. Recirculating Tank 2 Compartment



Top View



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PRODUCT CONFIGURATION DRAWINGS

Orenco Systems® Incorporated
Changing the Way the World Does Wastewater®

Drawn By: CHRIS JORDAN	Project: AXRT 2 Compartment Tank Chamber Volumes, Surge Capacity, & Draw Down	Scale: 1" = 20"	
Drawn For:		Sheet: 1 OF 1	
	Title: Volume Guidelines	Rev: 5.0	Date: 11/15/11

Technical Data Sheet

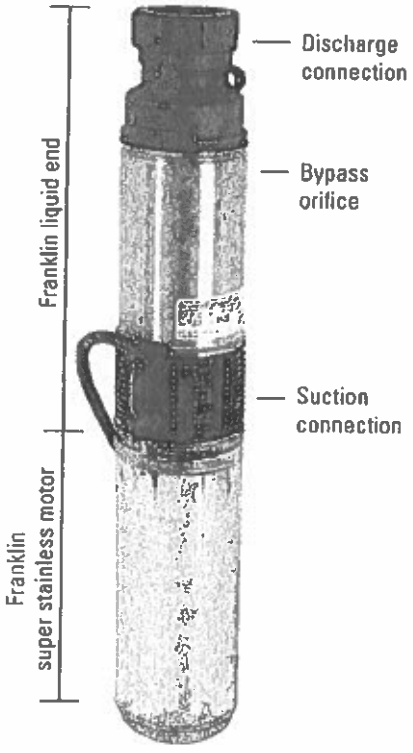
PF Series 4" (100 mm) Submersible Effluent Pumps

Orenco Systems Incorporated
800-348-9843

Applications

Our 4" (100 mm) Submersible Effluent Pumps are designed to transport screened effluent (with low TSS counts) from septic tanks or separate dosing tanks. All our pumps are constructed of lightweight, corrosion-resistant stainless steel and engineered plastics; all are field-serviceable and repairable with common tools; and all 60-Hz PF Series models are CSA certified to the U.S. and Canadian safety standards for effluent pumps, meeting UL requirements.

Orenco's Effluent Pumps are used in a variety of applications, including pressurized drainfields, packed bed filters, mounds, aerobic units, effluent irrigation, effluent sewers, wetlands, lagoons, and more. These pumps are designed to be used with a Biotube® pump vault or after a secondary treatment system.



C SA US
LR80980
LR2053896

Powered by Franklin Electric

Features/Specifications

To specify this pump for your installation, require the following:

- Minimum 24-hour run-dry capability with no deterioration in pump life or performance*
- ⅛-inch (3-mm) bypass orifice (patent pending) to ensure flow recirculation for motor cooling and to prevent air bind
- Liquid end repair kits available for better long-term cost of ownership
- TRI-SEAL™ floating impeller design on 10, 15, 20, and 30 gpm (0.6, 1.3, and 1.9 L/sec) models; floating stack design on 50 and 75 gpm (3.2 and 4.7 L/sec) models
- Super stainless Franklin Electric motor, rated for continuous use and frequent cycling
- Type SOOW 600-V motor cable (suitable for Class I, Division 1 and Division 2 applications)
- Five-year warranty on pump or retrofit liquid end from date of manufacture against defects in materials or workmanship

** Not applicable for 5-hp (3.73 kW) models*

Standard Models

See specifications chart, pages 2-3, for a list of standard pumps. For a complete list of available pumps, call Orenco.

Nomenclature

PF □ □ □ □ - □

- Pump (PF Series)
- Nominal flow, gpm (L/sec): 10 = 10 (0.6); 15 = 15 (1.0); 20 = 20 (1.3); 30 = 30 (1.9); 50 = 50 (3.2); 75 = 75 (4.7)
- Horsepower (kW): 03 = ⅓ hp (0.25); 05 = ½ hp (0.37); 07 = ¾ hp (0.56); 10 = 1 hp (0.75); 15 = 1-½ hp (1.11); 20 = 2 hp (1.50); 30 = 3 hp (2.24); 50 = 5 hp (3.73)
- Frequency: 1 = single-phase 60 Hz; 3 = three-phase 60 Hz; 5 = single-phase 50 Hz
- Voltage, nameplate: 1 = 115[2]; 200 = 200; 2 = 230[1]; 4 = 460
- Cord length, ft (m): Blank = 10 (3); 20 = 20 (6); 30 = 30 (9); 50 = 50 (15)

[1] Note: 20-foot cords are available only for single-phase pumps through 1-½ hp
[2] ½-hp (0.37kW) only
220 volts for 50 Hz pumps

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PROTECTING THE WORLD'S WATER

ASTM/NSF Standard 40

Daily Flow (gpd)	Septic Tank Size	Recirc Tank Size	AX Unit(s)
500	1000	500	AX20 / AX20RT
600	1200	600	AX20 / AX20RT
625	1250	625	AX25RT
750	1500	750	AX25RT
1000	2000	1000	(2) AX20 / (2) AX20RT
1500	3000	1500	(2) AX25RT

ASTM/NSF Standard 245

Daily Flow (gpd)	Septic Tank Size	Recirc Tank Size	AX Unit(s)
500	1000	500	AX20 / AX20RT
600	1200	600	AX20/AX20RT
750	1500	750	AX25RT
1000	2000	1000	(2) AX20 / (2) AX20RT
1200	2400	1200	(2) AX20 / (2) AX20RT
1500	3000	1500	(2) AX25RT

AX20 Residential Design Criteria (Separate Septic/Recirc Tanks)

Number of Bedrooms	Occupants	Septic Tank (mimimum)	Recirc Tank	AX Units
4 (or fewer)	8	1000	1000	1 - AX20
5	10	1250	1000	1 - AX20
6	12	1500	1000	2 - AX20

AX20 Residential Design Criteria (Single Processing Tank)

Number of Bedrooms	Occupants	Processing Tank	AX Units
4 (or fewer)	8	1500	1 - AX20
5	10	2000	1 - AX20
6	12	2500	2 - AX20

AXRT Residential Design Criteria

Number of Bedrooms	Occupants	Septic Tank (minimum)	AX-RT Model
4 (or fewer)	8	1000	AX20-RT
5	10	1250	AX20-RT
6	12	1500	AX25-RT

Note:
AX40 Indicates (2) AX20 Units
AX40 RT Indicates (2) AX20RT Units
Individual AX Units can be combined for higher design flows.
AXRT units have a built-in 800 gallon recirculation tank

HOMEOWNERS GUIDE FOR CARE AND MAINTENACE OF GEOGLOW DRIP DISPOSAL FIELD

A DRIP DISPOSAL SYSTEM HAS BEEN INSTALLED ON YOUR PROPERTY FOR THE SUBSURFACE DISPERSAL OF THE EFFLUENT FROME YOUR HOME

THE DRIP DISPOSALL SYSTEM CONSISTS OF A SERIES OF ½" DIAMETER DRIP TUBING INSTALLED AT A SHALLOW DEPTH OF 6" TO 10" BELOW THE GROUND SURFACE. IT IS DESIGNED TO EFFECTIVELY DISPERSE THE TREATED EFFLUENT IN THE GROUND WITH A COMBINATION OF SOIL ABSORPTION AND PLANT UPTAKE. YOUR DRIP DISPOSAL SYSTEM WILL FUNCTION FOR MANY YEARS WITH ONLY MINIMAL MAINTEMANCE BEING REQUIRED, PROVIDED THE FOLLOWING RECOMMENDATIONS ARE FOLLOWED.

ESTABLISHED LANDSCAPING (PREFERABLY A GRASS COVER) IMMEDIATELY. THIS WILL STABILIZE THE SOIL AND ALLOW FOR THE GRASS TO TAKE UP THE WATER.

DO NOT DISCHARGE SUMP PUMPS, FOOTING DRAINS OR OTHER SOURCES OF CLEAR WATER TO THE SYSTEM, EXCEPT FOR THE EFFLUENT DISCHARGE FROM YOUR TREATMENT SYSTEM.

MAINTAIN ALL PLUMBING FIXTURES TO PREVENT EXCESS WATER FROM ENTERING THE DISPOSAL SYSTEM.

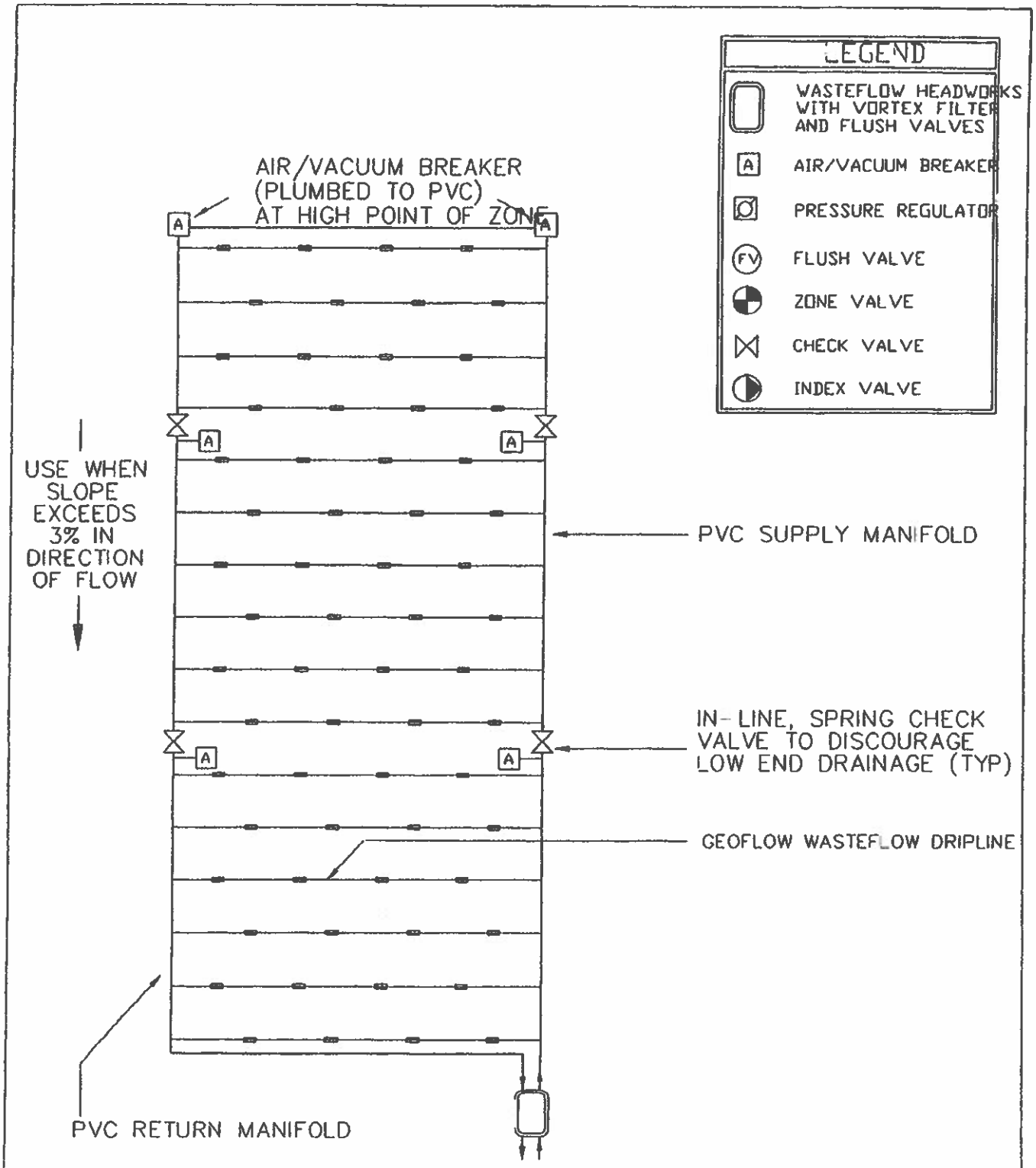
DO NOT DRIVE CARS, TRUCKS OR OTHER HEAVY EQUIPMENT OVER THE DRIP DISPOSAL FIELD. THIS CAN DAMAGE THE DRIP COMPONENTS OR THE SOIL AND CAN CAUSE THE SYSTEM TO MALFUNCTION. LAWN MOWERS, RUBBER WHEELED GARDEN TRACTORS AND LIGHT EQUIPMENT CAN BE DRIVEN OVER THE DRIP FIELD.

DO NOT DRIVE TENT STAKES , GOLF PUTTING HOLES, CROQUET HOOPS. ETC. INTO THE DISPERSAL FIELD.

CONTACT YOUR SERVICE COMPANY IF YOUR HIGH-WATER ALARM SHOULD SOUND, THE PUMP CHAMBER IS SIZED TO ALLOW ADDITIONAL STORAGE AFTER THE HIGH-WATER ALARM SOUNDS BUT YOU SHOULD REFRAIN FROM EXCESSIVE WATER USAGE (I.E. LAUNDRY) UNTIL THE SYSTEM HAS BEEN CHECKED.

AFTER A TEMPORARY SHUTDOWN DUE TO VACATION OR OTHER REASON, THE TREATMENT PLANT AHEAD OF THE DRIP FIELD FILTER INITIALLY MAY NOT FUNCTION EFFECTIVELY, RESULTING IN THE FILTER BLOCKING. REFER TO MAINTENANCE GUIDELINES TO CLEAR THE FILTER.

CONTACT YOUR SERVICE COMPANY IF YOU NOTICE ANY AREAS OF EXCESSIVE WETNESS INT THE FIELD. IN MOST CASES, THISIS USUALLY CAUSED BY LOOSE FITTING OR NICKED DRIPLINE AND CAN BE EASILY REPAIRED. NOTE: THERE MAY BE SOME INITIAL WETNESS OVER THE DRIPLINE FOLLOWING THE SYSTEM'S INSTALLATION. THIS SHOULD CEASE ONCE THE GROUND HAS SETTLED AND A GRASS COVER IS ESTABLISHED.



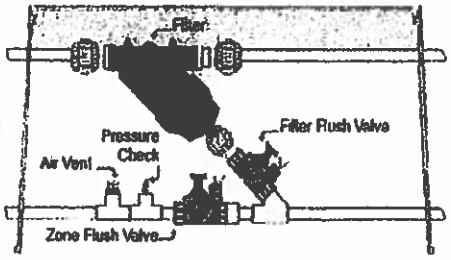
607A GEOFLOW SLOPE LAYOUT FOR SINGLE ZONE
WASTEFLOW PRESSURE COMPENSATING DRIPLINE

Not To Scale

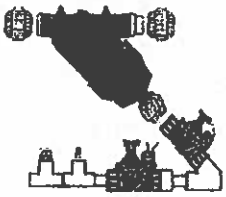
09-02 GEOFLOW ©

WHW Sporty Headworks - Disc
In-Ground

Description
The Wasteflow Headwork is a pre-assembled unit including filters, valves, fittings and pressure gauges mounted inside a box for direct burial, or inside a pump tank riser. It is installed between the pump and the field to filter out fine particles from entering the treatment field, and to flush fine particles that may collect in the dripfield. recommended for maximum flow rate of 30gallons per minute and 600 gallons per day.

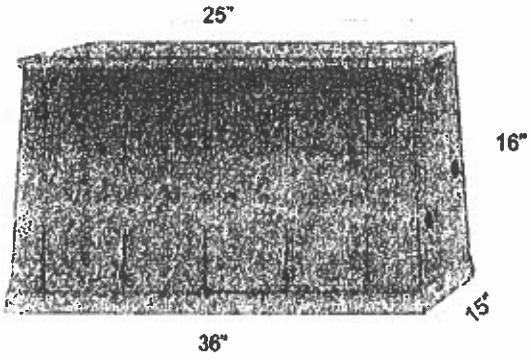


Process
During a *dosing cycle*, the wastewater exits the pump chamber and enters the inlet fitting of the Sporty Headworks. It passes through the filter before exiting the box and going to the dripfield zone that is open. Both the field flush valve and zone flush valves are closed at this time.



The water enters back into the Headworks through the return line, goes past the point to measure pressure and stops at the field flush valve.

During a *field flush* cycle, water enters the Headworks as above, the filter flush valve remains closed, but the field flush valve opens to allow water to circulate through the dripfield and return back into the return fitting of the headworks, past the pressure gage and through the field flush valve at an increased velocity than during normal dosing. The water passes through the field flush valve and down the flush line in the headworks to exit the headworks for return to the pump tank or pretreatment tank.



When *filter flushing*, the filter valve opens and the field flush valve is closed. While water passes through the filter to the field, part of the water is directed to the base of the filter, pushing solids down the screen, out of the filter, through the open filter flush valve, into the flush line in the ultra headworks to exit the headworks for return to the pump tank or pretreatment tank.

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Components Specification:

Enclosure: The Wasteflow Headworks Sporty enclosure shall be injection molded of structural foam polyethylene with a melt index of 10-12. The box shall be tapered with a top measurement of 25" x 16" and a bottom measurement of 33"x 23". The height shall be a minimum of 15" tall with a minimum wall thickness of 0.320". The body shall have a double wall at the top to cover seat area with a minimum thickness of 0.320". The cover seat area shall have structural support ribs on the underside of the seat. The bottom of the body shall have a 1.0" flange. The cover shall have an average thickness of 0.350".

Pressure Gauges: There shall be 3 points to measure pressure on the Sporty Wasteflow Headworks; one on each side of the filter and one on the return line. The pressure gauge is oil-filled and capable of registering pressure between 0-80 psi.

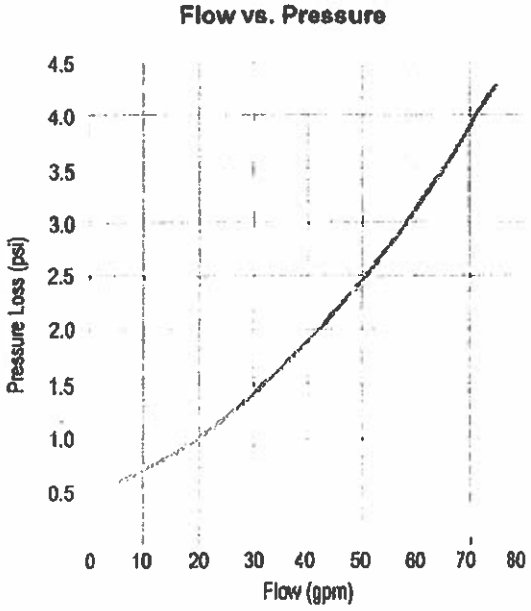
BioDisc filter (APBIODISC-150): The APBIODISC-150 filter body and discs shall be molded of polyethylene resins. The disc shall include **Geoshield®** anti-bacterial compound to protect the filter element against slime build-up. Filtration shall be 150 mesh/100 micron. The two piece body shall be capable of being serviced by unwisting and shall include an O-ring seal. The seals shall be manufactured from Nitrile rubber. The inlet and outlet shall be 1.5 inch MPT. The UF disc filter shall be part number APBIODISC-150 as supplied by Geoflow, Inc.

Filter Flush Valve (SVLV-075): The solenoid valve shall be an electrically operated, normally closed, hydraulic valve with a 3/4" FIPT inlet and outlet. The globe shaped valve body is constructed of nylon reinforced molded epoxy resin and is waterproof, with an O-ring seal, and complies with NFC Class II circuit requirements for 24V a.c. operation. Metal parts shall be constructed of stainless steel, and the diaphragm shall be molded of natural rubber. The recommended operating pressure range is between 10-150 psi. Also available with manual flush where approved.

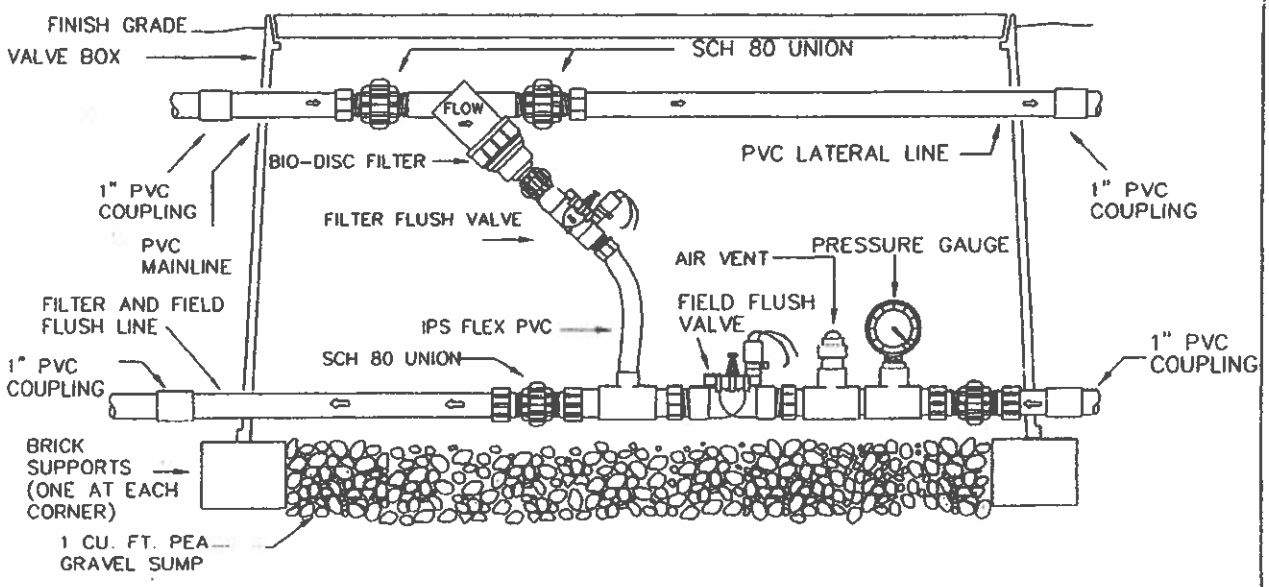
Field Flush Valve (SVLV-100 or SVLV-150): The solenoid valve shall be an electrically operated, normally closed, hydraulic valve with a 1" FIPT inlet and outlet. The globe shaped valve body is constructed of nylon reinforced molded epoxy resin and is waterproof, with an O-ring seal, and complies with NFC Class II circuit requirements for 24V a.c. operation. Metal parts shall be constructed of stainless steel, and the diaphragm shall be molded of natural rubber. The recommended operating pressure range is between 10-150 psi. Also available with manual flush where approved.

½" Air Relief Valve (ARV-05): Molded plastic air vent with rubber ring shall be used on flush end of the Headworks. It shall be capable of allowing air in at 5 gpm.

Piping, Unions and Fittings shall be schedule 40 or schedule 80 grade PVC.



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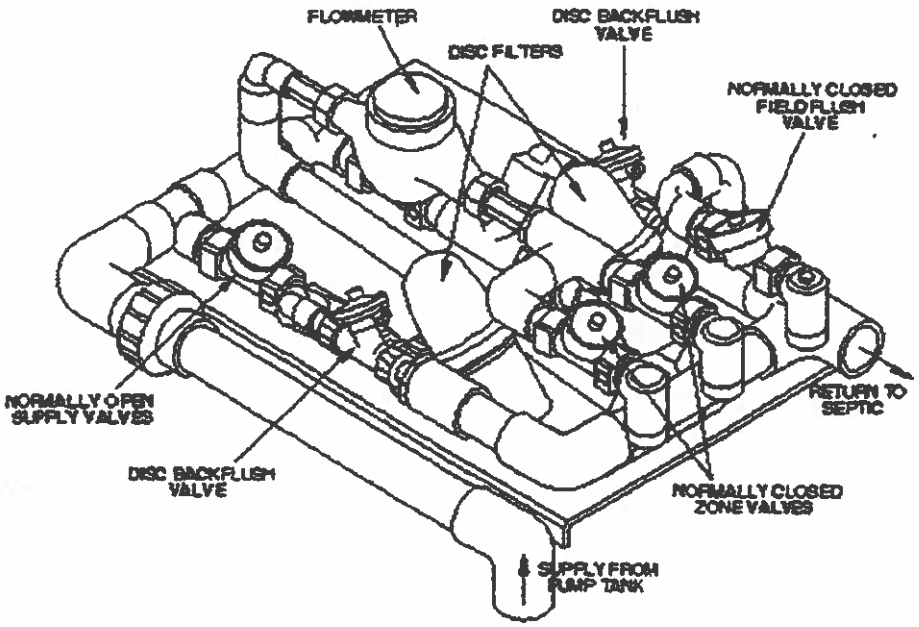
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SIMPLE WASTEFLOW HEADWORKS BOX - AUTOMATIC

SCHEMATIC

Not To Scale

Typical Head Works



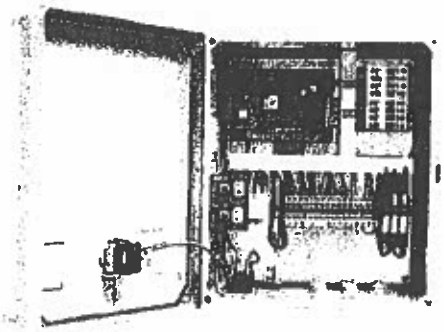
For AdvanTex® Treatment Systems

VeriComm® AXB_ Control Panels

Technical Data Sheet

Applications

VeriComm AXB1 and AXB2 remote telemetry control panels are used with AdvanTex dual pumping operations (timed, recirculating, with on-demand discharge). Coupled with the VeriComm web-based Monitoring System, these affordable control panels give water/wastewater system operators and maintenance organizations the ability to monitor and control each individual system's performance remotely, with real-time efficiency, while remaining invisible to the homeowner. VeriComm AXB panels allow remote operators to change system parameters, including timer settings, from the web interface.



Typical AXB_ VeriComm® Control Panel

Standard Models:
VCOM AXB1, VCOM AXB2

To Specify...

To specify this panel for your installation, require the following:

Basic Control Logic: Three Operating Modes

- A "Start-up Mode" for the initial 30 days, during which the system collects trend data to establish operating standards for future reference.
- A "Normal Mode" that manages day-to-day functions.
- A "Test Mode" that suspends data collection and alarm reporting during installation and service.

Data Collection and Utilization

- Data logs of system conditions and events, such as pump run times, pump cycles, and alarm conditions.

Troubleshooting and Diagnostic Logic

- Troubleshooting capabilities that can report suspected failed components, which then trigger Alarms.

Advanced Control Logic

- Advanced control logic that activates during float malfunctions to diagnose the situation and keep the system operating normally until servicing.

Communication and Alarm Management

- Remote telemetry capabilities coupled with a web-based monitoring application (see *VeriComm Monitoring System*, ATD-WEB-VCOM-1) for communication and alarm management. Updating of point values (including timer settings) and receipt of queued changes during each communication session with host. Communication sessions that occur monthly, at a minimum, and more frequently during alarm conditions.
- Multiple methods of communication, as follows:

  Call-In to VeriComm® Host

  - Automatic notification to host of "Alarms," which signal fault conditions that need to be addressed immediately (e.g., pump failure).
  - Automatic notification to host of "Alerts," which signal less critical fault conditions and which trigger the panel's troubleshooting logic and alternative operating mode (e.g., stuck float switch).
  - Automatic notification to host of "Updates," which include alarm updates or all-clear notifications following Alarms/Alerts, as well as normally scheduled monthly panel reports.
  - Manual, forced communication from panel to host to effect an updating of point values and receipt of queued changes.

  Real-Time Direct Connection to Panel

  - Manual, direct connection at the site via RS-232 serial port, to allow a local operator real-time access to detailed logged data and the ability to change point values from a laptop.
  - Manual, forced communication by local operator/homeowner at the site to initiate an auto-answer mode, allowing a remote operator real-time access to detailed logged data and the ability to change point values.

  During real-time, manual connections, software with open architecture (and password security) is used; no proprietary software is required. VT100 protocol allows access and control from any computer modem (Mac or PC) with a simple communication program (e.g., Windows' HyperTerminal); multilevel password protection in panel ensures that only qualified personnel can access the panel's data.

Additional Features

- Status light indicators on the board, including . . .
  - Flashing green LED for normal operation
  - Yellow LEDs for status of digital inputs
  - Red LEDs for status of digital outputs and modem activity
- UL-recognized and FCC-approved

For more information, try our online demo at www.vericomm.net (no password required).

Orenco Systems® Incorporated

Changing the Way the World Does Wastewater

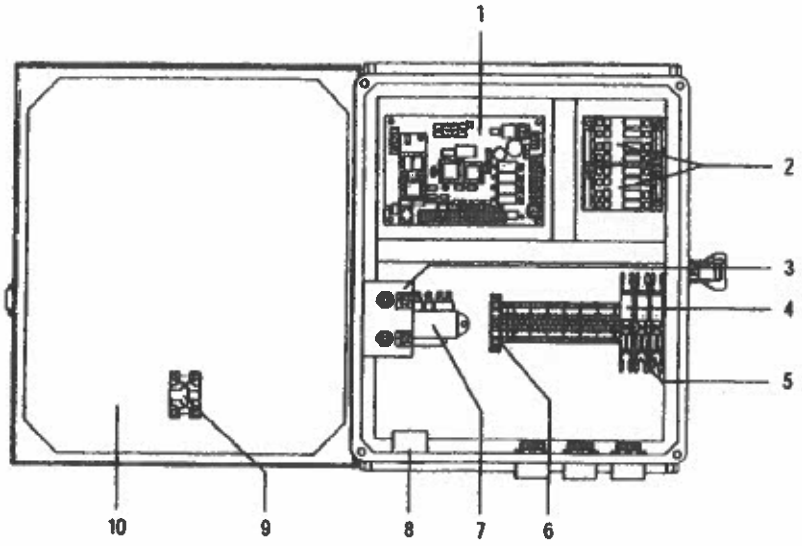
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VeriComm® AXB_ Control Panels

Technical Data Sheet

1. VeriComm® Remote Telemetry Board
2. Motor-Start Contactors
3. Toggle Switches
4. Control Circuit Breaker
5. Pump Circuit Breakers
6. Fuse
7. Transformer
8. Audio Alarm
9. Visual Alarm
10. Panel Enclosure



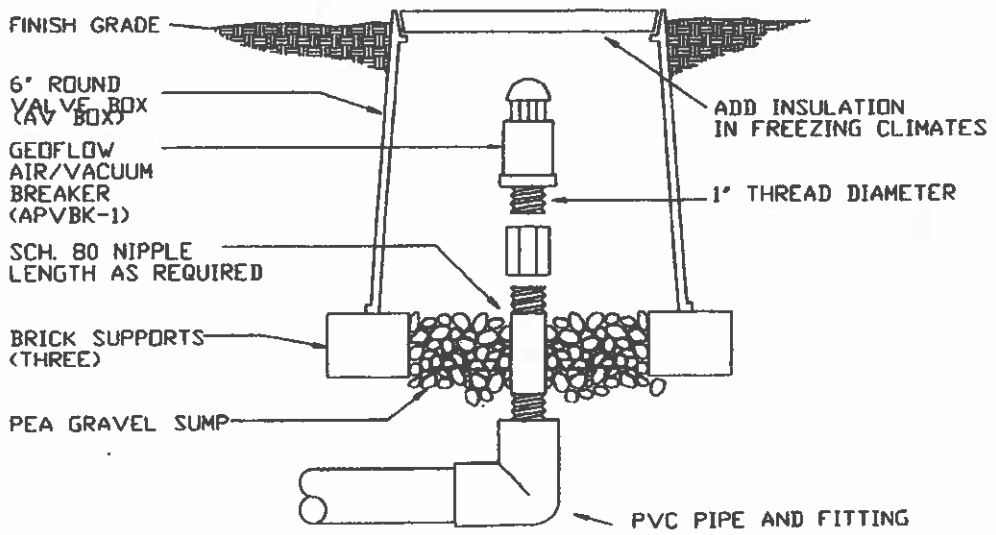
Standard Components

Feature	Specifications
1. VeriComm® Remote Telemetry Unit*	ATRTU-100: 36/18 VAC (center tap transformer), 8 digital inputs, 4 analog inputs, 4 digital outputs, 0 analog ouputs, on-board modem (2400 baud), LED input and output indicators, 1-year battery backup of data and program settings.
2. Motor-Start Contactors	120 VAC: 14 FLA, 3/4 hp, 60 Hz; 2.5 million cycles at FLA (10 million at 50% of FLA). 240 VAC: 14 FLA, 2 hp, 60 Hz; 2.5 million cycles at FLA (10 million at 50% of FLA).
3. Toggle Switches	Single-pole switch, automatic On, with spring-loaded, momentary, manual On. 20 amps, 1 hp.
4. Control Circuit Breaker	10 amps, OFF/ON switch. Single-pole 120 VAC, double-pole 240 VAC. DIN rail mounting with thermal magnetic tripping characteristics.
5. Pump Circuit Breakers	20 amps, OFF/ON switch. Single-pole 120 VAC, double-pole 240 VAC. DIN rail mounting with thermal magnetic tripping characteristics.
6. Fuse	120 VAC Primary, 36 VCT @ 0.05A Secondary.
7. Transformer	250 VAC, 1A.
8. Audio Alarm	80 dB at 24", warble-tone sound.
9. Visual Alarm	7/8" diameter red lens, "Push-to-silence." NEMA 4, 1 Watt bulb, 120 VAC.
10. Panel Enclosure	Measures 15.50" high x 13.30" wide x 6.70" deep. NEMA 4X rated. Constructed of UV-resistant fiberglass; hinges and latch are stainless steel. Conduit couplings provided.
VCOM-AXB1	120 VAC, 3/4 hp, 14 amps, single-phase, 60 Hz.
VCOM-AXB2	240 VAC, 2 hp, 14 amps, single-phase, 60 Hz.

Optional Components

Feature	Specifications	Product Code Adder
Pump Run Light	7/8" diameter green lens. NEMA 4, 1 Watt bulb, 120 VAC.	PRL
Heater	Anticondensation heater. Self-adjusting: radiates additional Wattage as temperature drops.	HT

* *See VeriComm Remote Telemetry Unit (ATD-CP-VCOM-1) and VeriComm Monitoring System (ATD-WEB-VCOM-1) for more detail.*



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1" AIR/VACUUM BREAKER (PLUMBED TO PVC)

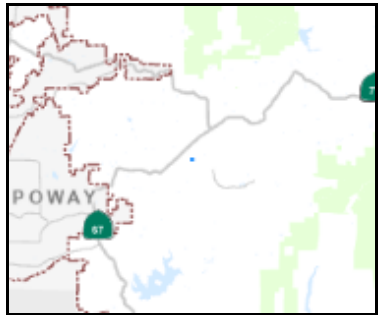
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09-02 GEOFLOW

LUEG GIS
Land Use & Environment Group
Geographic Information Services

Map Title





Legend

Department of Environmental Health and Quality

Assessor Parcels

Notes

0 100 200 ft

Print Date: 02/27/2026

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